

THE NEW VALUE FRONTIER



# POWER DEVICES 2020

京セラ株式会社  
KYOCERA Corporation

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- For further information, please contact your local Kyocera sales representative or sales agent.

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# 1. 記号と用語 Symbols and Terms

## 1-1. ダイオード Diode

記号 Symbol	用語 Term	定義 Definition
VRMM	繰り返しピーク逆電圧 Repetitive Peak Reverse Voltage	繰り返し印加できる逆電圧のピーク値 Allowable peak reverse voltage repetitively applicable to diode
	非繰り返しピーク逆電圧 Surge Peak Reverse Voltage	非繰り返し印加できる逆電圧のピーク値 Allowable peak reverse voltage non-repetitively applicable to diode
Vz	ゼナー電圧 Zener Voltage	逆方向に指定された電流Izを流した時の電圧値 Voltage value when a specified current Iz flows in reverse direction
	実効順電流 RMS Forward Current	連続して通電できる順電流の実効値 Maximum RMS value of continuous forward current
Io	平均整流電流 Average rectified output current	指定された条件で商用周波数（50Hz/60Hz）で流しうる最大平均電流 Maximum average forward current allowable in the commercial frequency (50Hz/60Hz) sine wave under specified conditions
	サージ順電流 Surge forward current	50Hzまたは60Hzの正弦波1サイクルを非繰り返しで流しうる最大順電流のピーク値 Non-repetitive maximum peak forward current in one cycle of (50Hz/60Hz) sine wave
PRRSM	繰り返しピークサージ逆電力 Repetitive Surge Peak Reverse Power	指定された条件で許容しうる逆電力のピーク値 Acceptable peak reverse power under specified conditions
	I <sup>2</sup> t	電流2乗時間積 Current squared times
IRM	ピーク逆電流 Peak reverse current	規定の逆電圧を印加したときに流れる逆電流のピーク値 Peak reverse current at the specified reverse voltage
	Iz	ゼナー電流 Zener current
VFM	ピーク順電圧 Peak Forward Voltage	規定の順電流を流したときの順電圧ピーク値 Peak forward voltage at the specified forward current
	T <sub>jw</sub>	動作接合温度範囲 Operating Junction Temperature Range
T <sub>stg</sub>	保存温度範囲 Storage Temperature Range	保存（非動作時）の周囲温度保証範囲 Range of ambient temperature while not operating
	R <sub>th</sub>	熱抵抗 Thermal Resistance
t <sub>rr</sub>	逆回復時間 Reverse Recovery Time	順方向通電状態から逆方向にスイッチするときに、逆阻止能力を回復するまでの時間、図1参照 Time required to recover blocking capability after current is switched from forward to reverse. Refer to Fig 1.

## 1-2. サイリスタ Thyristor

記号 Symbol	用語 Term	定義 Definition
VRMM	繰り返しピーク逆電圧 Repetitive Peak Reverse Voltage	アノード・カソード間に繰り返し印加できる逆電圧のピーク値 Allowable peak reverse voltage repetitively applicable between anode and cathode
	VDRM	繰り返しピークオフ電圧 Repetitive Peak Off-state Voltage
Io	平均オン電流 Average rectified output current	指定された条件で商用周波数（50Hz/60Hz）で流しうる最大オン電流の平均値 Maximum average on-state current allowable in the commercial frequency (50Hz/60Hz) half sine wave under specified conditions
	ITSM	サージオン電流 Surge on-state current
IGT	トリガゲート電流 Gate trigger current	オンさせるのに必要な最小ゲート電流 Minimum gate current required to turn on
	VGT	トリガゲート電圧 Gate trigger voltage
T <sub>jw</sub>	動作接合温度範囲 Operating Junction Temperature Range	動作時の接合温度の範囲 Range of junction temperature while operating

### 1-3. IGBT

記号 Symbol	用語 Term	定義 Definition
V <sub>CES</sub>	コレクタ・エミッタ間電圧 Collector-Emitter Voltage	ゲート・エミッタ間を短絡したうえでコレクタ・エミッタ間に印加できる電圧のピーク値 Allowable peak voltage between collector and emitter with gate short-circuited to emitter
	コレクタ電流 Collector Current	連続して流せるコレクタ電流の最大値 Maximum allowable continuous value of collector current
V <sub>CES(sat)</sub>	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	規定のゲート電圧を印加して、規定のドレイン電流を流したときのコレクタ・エミッタ間電圧 Collector-Emitter saturation voltage at specified gate voltage and source current
	ターンオン時間 turn-on time	図2. 参照 Refer to Fig 2.
t <sub>off</sub>	ターンオフ時間 turn-off time	図2. 参照 Refer to Fig 2.

用語解説用波形

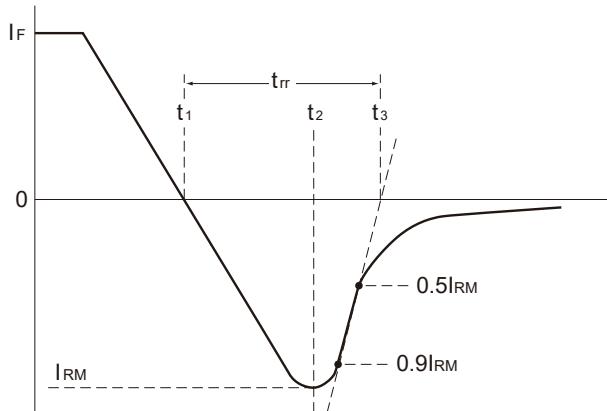


図 1. 逆回復波形

Fig 1. Reverse Recovery Waveforms

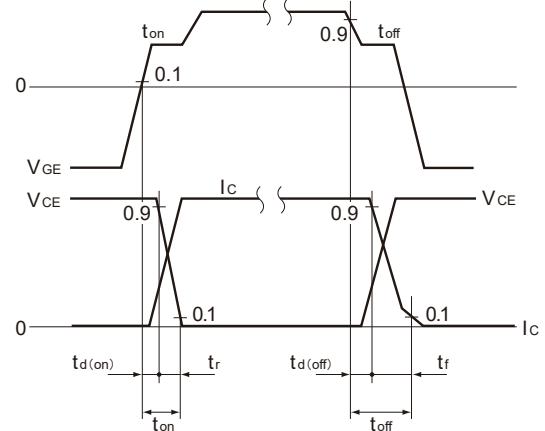


図 2. スイッチング時間波形

Fig 2. Switching Time Waveforms

## 2. 製品早見表 Quick Reference

### 2-1. ディスクリート製品 Discrete Products

#### 2-1-1. 一般整流ダイオード Rectifier Diodes

Package	$V_{RRM}[V]$ $I_o[A]$	400	600	900	Page
SOD-123	0.5	EP05DA40	✓		18
DO-214AC (SMA)	1.0	EC10DS4			18
		EC10DA40	✓		18
3Max × ø2.7 (DO-41S)	1.0	10EDB40	10EDB60		18
DO-204AC (DO-15)	2.0	20CDA40	20CDA60		18
DO-201AD	3.0	30GDA40	30GDA60		18
nSMC	3.0	NSD03A40	✓		18
TO-220 Full-Mold 2pin	20.0			FSD20A90	18

✓ : AEC-Q101準拠 AEC-Q101 qualified

#### 2-1-2. ファストリカバリダイオード（単体） (1/2) Fast Recovery Diodes (Single chip) (1/2)

Package	$V_{RRM}[V]$ $I_o[A]$	200	300	400	600	Page
SOD-123	0.4				EP04RA60	✓ 18
	0.5	EP05FA20	✓			18
DO-214AC (SMA)	0.8				EC8FS6	✓ 18
	1.0	EC11FS2	✓	EC11FS4	✓	18
		EC10UA20				18
3Max × ø2.7 (DO-41S)	1.0	11EFS2		11EFS4		18
DO-204AC (DO-15)	2.0			20CFA40	20CFB60	18
TO-251	3.0			EA31FS4		18
TO-252 (Dpak)	3.0	EA31FS2-F		EA31FS4-F	ESF03F60-F	18
TO-220 Full-Mold 2pin	3.0				FSF03F60	19
DO-201AD	3.0	30GFA20		30GFA40	30GFB60	18
					30GFD60	18
DO-214AC (SMA)	3.0	EC30FA20	✓	EC30FA40	✓ EC30FH60	✓ 18
nSMC	3.0	NSF03A20		NSF03A40	✓ NSF03B60	✓ 18
					NSF03E60	✓ 18
					NSU03A60	18
TO-277	5.0	VSF05A20	✓			18
TO-252 (Dpak)	5.0				ESF05H60-F	18
TO-220 2pin	5.0	GSF05A20		GSF05A40	GSF05F60	18
TO-220 Full-Mold 2pin	5.0	FSF05A20		FSF05A40	FSF05F60	19
					FSF05H60	19
					FSF05HU60	19
		FSU05A20	FSU05A30	FSU05A40	FSU05D60	19
TO-220 Full-Mold	5.0	FSF05A20B		FSF05A40B	FSF05F60B	19
TO-262	5.0	TSF05A20-11A			TSU05D60-11A	19
		TSF05A20			TSU05D60	19

✓ : AEC-Q101準拠 AEC-Q101 qualified

2-1-2. ファストリカバリダイオード（単体） (2/2) Fast Recovery Diodes (Single chip) (2/2)

Package	$I_o$ [A]	$V_{RRM}$ [V]	200	300	400	600	Page
TO-252 (Dpak)		8.0				ESF08HU60B-F	18
TO-220 Full-Mold 2pin		8.0				FSF08F60	19
						FSF08H60	19
						FSU08D60	19
TO-220 2pin		10.0	GSF10A20		GSF10A40		18
TO-220 Full-Mold 2pin		10.0	FSF10A20		FSF10A40	FSF10F60	19
						FSF10H60	19
						FSF10HU60	19
						FSF10HU60V	19
			FSU10A20	FSU10A30	FSU10A40	FSU10D60	19
						FSU10D60V	19
TO-220 Full-Mold		10.0	FSF10A20B		FSF10A40B	FSF10F60B	19
TO-262		10.0				TSU10D60-11A	19
						TSU10D60	19
						FSF15F60	19
TO-220 Full-Mold 2pin		15.0				FSF15H60	19
						FSU15D60	19
						KSF30F60	19
TO-247 2pin		30.0				KSF30H60	19
						KSU30D60	19
			KSF30A20B	KSU30A30B	KSF30A40B	KSF30F60B	19
TO-247 2pin (long lead)		30.0				KSU30D60N	19
						KSF30F60N	19
						KSF30H60N	19
TO-247		60.0				KSF60F60B	19
TO-247 2pin (long lead)		60.0				KSF60F60N	19
						KSF60H60N	19
						KSU60D60N	19

## 2. 製品早見表 Quick Reference

2-1-2. ファストリカバリダイオード（複合型） Fast Recovery Diodes (Multi chip)

Package	$I_o[A]$	$V_{RRM}[V]$	200	300	400	600	Page
TO-277	6.0	VCF06A20	✓				20
TO-251	6.0	EA61FC2		EA61FC4			20
TO-252 (Dpak)	6.0	EA61FC2-F	✓		EA61FC4-F	✓	20
					ECF06B60-F	✓	20
					ECF06F60-F	✓	20
TO-220	6.0	GCF06A20		GCF06A40	GCF06F60		20
TO-220 Full-Mold	6.0	FCF06A20		FCF06A40	FCF06F60		20
TO-220	10.0	GCF10A20		GCF10A40			20
TO-220 Full-Mold	10.0	FCF10A20		FCF10A40	FCF10F60		20
				FCF10A40V			20
					FCF10H60		20
		FCU10A20	FCU10A30	FCU10A40	FCU10A60		20
					FCU10D60		20
		FRF10A20		FRF10A40			20
TO-262	10.0	TCF10A20-11A		TCF10A40-11A	TCF10F60-11A		20
		TCU10A20-11A		TCU10A40-11A	TCF10B60-11A		20
TO-263 (D2pak)	10.0	TCF10A20		TCF10A40	TCF10F60		21
		TCU10A20		TCU10A40	TCF10B60		21
TO-263LP	10.0			UCF10B40	✓		21
TO-262	16.0	TCF16A20-11A					20
TO-263	16.0	TCF16A20					21
TO-220 Full-Mold	16.0	FCF16A20		FCF16A40			20
TO-247	16.0	KCF16A20		KCF16A40			21
TO-200 Full-Mold	20.0			FCF20AU40	FCF20F60		20
					FCF20G60		20
					FCF20H60		20
		FCU20A20	FCU20A30	FCU20A40	FCU20D60		20
			FCU20D30	FCU20AU40			20
TO-262	20.0	TCU20A20-11A	TCU20A30-11A	TCU20A40-11A	TCF20B60-11A		20
TO-263 (D2pak)	20.0	TCU20A20	TCU20A30	TCU20A40	TCF20B60		21
TO-263LP	20.0		UCU20D30	UCF20B40	✓		21
TO-247	20.0				KCF20F60		21
		KCU20A20	KCU20A30	KCU20A40			21
		25.0	KCF25A20	KCF25A40			21
		30.0	KCU30A20	KCU30A30	KCU30A40		21
TO-247 (long lead)	30.0				KCF30F60N	✓	21
	60.0				KCU60D60N		21

✓ : AEC-Q101準拠 AEC-Q101 qualified

2-1-3. ショットキーバリアダイオード（単体） Schottky Barrier Diodes (Single chip)

Package	$V_{RRM}[V]$	30	35	40	45	60	65	Page
	$I_o[A]$							
SOD-123	0.5	EP05Q03L		EP05Q04 ✓		EP05Q06 ✓		21
3Max × ø2.7 (DO-41S)	1.0	11EQS03L		11EQS04		11EQS06		21
SOD-323FL	1.0	SA10QA03		SA10QA04		SA10QA06		21
SOD-123	1.0	EP10QY03		EP10QY04 ✓				21
DO-214AC (SMA)	1.0	EC10QS03L		EC10QS04 ✓		EC10QS06 ✓		21
DO-204AC (DO-15)	2.0	20CQA03L		20CQA04		20CQA06		21
DO-214AC (SMA)	2.0	EC21QS03L		EC21QS04 ✓	EC20QSA045 ✓	EC21QS06	EC20QSA065	22
TO-251	3.0			EA30QS04				22
TO-252 (Dpak)	3.0	EA30QS03L-F		EA30QS04-F		EA30QS06-F		22
DO-201AD	3.0	30GQA03L		30GQA04		30GQA06		21
DO-214AC (SMA)	3.0	EC31QS03L		EC31QS04 ✓	EC30QSA045 ✓	EC31QS06 ✓	EC30QSA065 ✓	22
NA (DO-221BC)	3.0		NA03QSA035		NA03QSA045		NA03QSA065	22
nSMC	3.0	NSQ03A03L		NSQ03A04		NSQ03A06		22
TO-220 2pin	5.0			GSQ05A04		GSQ05A06		22
TO-220 Full-Mold 2pin	5.0	FSQ05A03L			FSQS05A045		FSQS05A065	22
							FSQS05AU065	22
DO-201AD	5.0				50GQSA045		50GQSA065	21
NA (DO-221BC)	5.0		NA05QSA035		NA05QSA045		NA05QSA065	22
TO-277	10.0				VSQS10A045 ✓		VSQS10A065	22
TO-220 2pin	10.0			GSQ10A04		GSQ10A06		22
TO-220 Full-Mold 2pin	15.0				FSQS10A045		FSQS10A065	22
					FSQS15A045			22
TO-277	15.0				FSQS15A045V			22
TO-247 2pin	15.0			KSQ15A04		KSQ15A06		22
TO-220 Full-Mold 2pin	30.0				FSQS30A045			22
TO-247 2pin	30.0			KSQ30A04		KSQ30A06		22

✓ : AEC-Q101準拠 AEC-Q101 qualified

## 2. 製品早見表 Quick Reference

2-1-3. ショットキーバリアダイオードHシリーズ〈低リーク品〉(単体) V<sub>RRM</sub> : 30~80

Schottky Barrier Diodes H-Series <Low-IR type> (Single chip) V<sub>RRM</sub> : 30 to 80

Package	V <sub>RRM</sub> [V] I <sub>o</sub> [A]	30	40	65	80	Page
SOD-123	0.5					-
3Max × ø2.7 (DO-41S)	1.0					-
SOD-123	1.0	EP10HY03				23
DO-214AC (SMA)	1.0					-
DO-204AC (DO-15)	2.0					-
DO-214AC (SMA)						-
TO-252 (Dpak)	3.0					-
DO-201AD	3.0					-
DO-214AC (SMA)	3.0	EC30HA03L	EC30HA04			23
NA (DO-221BC)	3.0			NA03HSA065	NA03HSA08	23
nSMC	3.0	NSH03A03L				23
TO-277	3.0					-
TO-252 (Dpak)	5.0					-
TO-220 2pin	5.0					-
TO-220 Full-Mold 2pin	5.0	FSH05A03L		FSHS05A065	FSHS05A08	23
DO-201AD	5.0				50GHS08	23
NA (DO-221BC)	5.0			NA05HSA065	NA05HSA08	23
nSMC	5.0	NSH05A03		NSHS05A065	✓	23
TO-277	10.0					-
TO-220 2pin	10.0					-
TO-220 Full-Mold 2pin	10.0	FSH10A03L				-
TO-277	15.0				VSHS15A08	23
TO-247 2pin	15.0					-
	30.0					-

✓ : AEC-Q101準拠 AEC-Q101 qualified

2-1-3. ショットキーバリアダイオードHシリーズ〈低リーク品〉(単体) V<sub>RRM</sub> : 100~200  
 Schottky Barrier Diodes H-Series <Low-IR type> (Single chip) V<sub>RRM</sub> : 100 to 200

Package	$\frac{V_{RRM}[V]}{I_o[A]}$	100	120	150	200	Page
SOD-123	0.5	EP05H10	✓			26
3Max x Ø2.7 (DO-41S)	1.0	11EQS10			10EHA20	26
SOD-123	1.0					-
DO-214AC (SMA)	1.0	EC10QS10	✓	EC30HB15	✓	26
DO-204AC (DO-15)	2.0	20CHA10			20CHA20	26
DO-214AC (SMA)	2.0	EC21QS10	✓			26
TO-252 (Dpak)	3.0	EA30QS10-F				26
DO-201AD	3.0	30GHA10			30GHA20	26
DO-214AC (SMA)	3.0	EC31QS10	✓			26
NA (DO-221BC)	3.0		NA03HSA12	NA03HA15	NA03HA20	26
nSMC	3.0	NSH03A10		NSH03A15		26
TO-277	3.0		VSHS03A12	✓		26
TO-252 (Dpak)	5.0			ESH05A15-F		26
TO-220 2pin	5.0	GSH05A10				26
TO-220 Full-Mold 2pin	5.0	FSH05A10		FSH05A15	FSH05A20	26
DO-201AD	5.0		50GHSA12			26
NA (DO-221BC)	5.0		NA05HSA12			26
nSMC	5.0					26
TO-277	10.0		VSHS10A12			26
TO-220 2pin	10.0	GSH10A10				26
TO-220 Full-Mold 2pin	10.0	FSH10A10		FSH10A15		26
TO-277	15.0		VSHS15A12			26
TO-247 2pin	15.0	KSH15A10				26
	30.0				KSH30A20	26

✓ : AEC-Q101準拠 AEC-Q101 qualified

## 2. 製品早見表 Quick Reference

2-1-3. ショットキーバリアダイオード（複合）V<sub>RRM</sub> : 30~40 Schottky Barrier Diodes (Multi chip) V<sub>RRM</sub> : 30 to 40

Package	V <sub>RRM</sub> [V] I <sub>o</sub> [A]	30	35	40	Page
TO-251	6.0			EA60QC04	24
TO-252 (Dpak)	6.0	EA60QC03L-F		EA60QC04-F	24
NB	6.0		NB06QSA035		24
TO-252 (Dpak)	10.0		ECQS10A035-F		24
TO-220	10.0			GCQ10A04	24
TO-220 Full-Mold	10.0	FCQ10A03L	FCQS10A035		24
					-
					-
					-
TO-262	10.0			TCQ10A04-11A	24
TO-263 (D2pak)	10.0			TCQ10A04	24
TO-263LP	10.0				-
NB	10.0		NB10QSA035		24
TO-220	20.0			GCQ20A04	24
TO-220 Full-Mold	20.0	FCQ20A03L			24
					-
					-
					-
TO-262	20.0	TCQ20A03L-11A		TCQ20A04-11A	24
TO-263 (D2pak)	20.0	TCQ20A03L		TCQ20A04	24
TO-263LP	20.0				-
TO-247	20.0			KCQ20A04	24
TO-220	30.0	GCQ30A03L		GCQ30A04	24
TO-220 Full-Mold	30.0	FCQ30A03L			24
	30.0				-
TO-262	30.0			TCQ30A04-11A	24
TO-263 (D2pak)	30.0			TCQ30A04	24
TO-263LP	30.0				-
TO-247	30.0	KCQ30A03L		KCQ30A04	25
	60.0	KCQ60A03L		KCQ60A04	25

2-1-3. ショットキーバリアダイオード（複合）V<sub>RRM</sub> : 45~65 Schottky Barrier Diodes (Multi chip) V<sub>RRM</sub> : 45 to 65

Package	V <sub>RRM</sub> [V] I <sub>o</sub> [A]	45	60	65	Page
TO-251	6.0		EA60QC06		24
TO-252 (Dpak)	6.0		EA60QC06-F		24
NB	6.0	NB06QSA045		NB06QSA065	24
TO-252 (Dpak)	10.0	ECQS10A045-F			24
TO-220	10.0		GCQ10A06		24
TO-220 Full-Mold	10.0	FCQS10A045		FCQS10A065	24
		FCQS10AU045			24
		FCQS10AU045V			24
TO-262	10.0				-
TO-263 (D2pak)	10.0				-
TO-263LP	10.0			UCQS10A065	24
NB	10.0	NB10QSA045		NB10QSA065	24
TO-220	20.0		GCQ20A06		24
TO-220 Full-Mold	20.0	FCQS20A045		FCQS20A065	24
				FCQS20BU065	24
				FCQS20BU065V	24
		FRQS20A045		FRQS20A065	24
TO-262	20.0				-
TO-263 (D2pak)	20.0				-
TO-263LP	20.0	UCQS20A045		UCQS20A065	24
TO-247	20.0		KCQ20A06		24
TO-220	30.0		GCQ30A06		24
TO-220 Full-Mold	30.0	FCQS30A045		FCQS30A065	24
	30.0	FCQS30AU045		FCQS30AU065	24
TO-262	30.0		TCQ30A06-11A		24
TO-263 (D2pak)	30.0		TCQ30A06		24
TO-263LP	30.0	UCQS30A045			24
TO-247	30.0		KCQ30A06		25
	60.0		KCQ60A06		25

: AEC-Q101準拠 AEC-Q101 qualified

## 2. 製品早見表 Quick Reference

2-1-3. ショットキーバリアダイオード Hシリーズ 〈低リーク〉 (複合) V<sub>RRM</sub> : 30~65  
 Schottky Barrier Diodes H-Series <Low-IR type> (Multi chip) V<sub>RRM</sub> : 30 to 65

Package	$\frac{V_{RRM}[V]}{I_o[A]}$	30	40	45	60	65	Page
TO-251	6.0						-
TO-252 (Dpak)	6.0						-
NB	6.0					NB06HSA065	25
TO-220 Full-Mold	8.0						-
TO-252 (Dpak)	10.0						-
TO-220	10.0						-
	FCH10A03L			FCHS10A045		FCHS10A065	25
TO-220 Full-Mold	10.0						-
							-
							-
TO-262	10.0						-
TO-263 (D2pak)	10.0						-
TO-263LP	10.0					UCHS10A065	26
NB	10.0					NB10HSA065	25
TO-220	20.0						-
	FCH20A03L			FCHS20A045		FCHS20A065	25
TO-220 Full-Mold	20.0						-
							-
							-
							-
TO-262	20.0						-
TO-263 (D2pak)	20.0						-
TO-263LP	20.0						-
TO-247	20.0						-
TO-220	30.0						-
	FCH30A03L			FCHS30A045		FCHS30A065	25
TO-220 Full-Mold	30.0						-
							-
							-
TO-262	30.0				TCH30A06-11A		26
TO-263 (D2pak)	30.0				TCH30A06		26
TO-263LP	30.0						26
TO-247	30.0	KCH60A03L	KCH60A04		KCH30A06		26
	60.0						26

2-1-3. ショットキーバリアダイオード G シリーズ 〈超低リーク品〉 (複合)  
 Schottky Barrier Diodes G-Series <Ultra-Low-IR type> (Multi chip)

Package	$\frac{V_{RRM}[V]}{I_o[A]}$	150	Page
TO-220 Full-Mold	10.0	FCG10AU15	27
	20.0	FCG20BU15	27
	30.0	FCG30AU15	27
	30.0	FCG30AU15V	27

2-1-3. ショットキーバリアダイオード Hシリーズ〈低リーク〉(複合) VRMM : 80~200  
 Schottky Barrier Diodes H-Series <Low-IR type> (Multi chip) VRMM : 80 to 200

Package	$V_{RRM}[V]$	80	100	120	150	200	Page
	$I_o[A]$						
TO-251	6.0		EA60QC10				25
TO-252 (Dpak)	6.0		EA60QC10-F			ECH06A20-F	25
NB	6.0	NB06HSA08		NB06HSA12			25
TO-220 Full-Mold	8.0		FCH08A10	FCHS08A12	FCH08A15		25/26
					FRH08A15		26
TO-252 (Dpak)	10.0	ECHS10A08-F					25
TO-220	10.0		GCH10A10				25
TO-220 Full-Mold	10.0	FCHS10A08	FCH10A10	FCHS10A12	FCH10A15	FCH10A20	25/26
					FCH10A15V	FCH10A20V	26
			FCH10AU10V				25
			FCH10E10		FRH10A15	FRH10A20	25/26
TO-262	10.0		TCH10A10-11A		TCH10A15-11A		26
TO-263 (D2pak)	10.0		TCH10A10		TCH10A15		26
TO-263LP	10.0	UCHS10A08		UCHS10A12			26
NB	10.0	NB10HSA08		NB10HSA12			25
TO-220	20.0		GCH20A10				25
TO-220 Full-Mold	20.0	FCHS20A08	FCH20A10	FCHS20A12	FCH20A15	FCH20A20	25/26
			FCH20BU10		FCH20BU15	FCH20A20V	25/26
			FCH20E10		FCH20BU15V	FCH20AU20	25/26
			FCH20E10V			FCH20AU20V	25/26
			FCH20AU10V				25
			FRH20A10		FRH20A15	FRH20A20	25/26
TO-262	20.0		TCH20A10-11A		TCH20A15-11A	TCH20A20-11A	26
TO-263 (D2pak)	20.0		TCH20A10		TCH20A15	TCH20A20	26
TO-263LP	20.0	UCHS20A08		UCHS20A12			26
TO-247	20.0		KCH20A10			KCH20A20	26
TO-220	30.0	GCHS30A08	GCH30A10				25
TO-220 Full-Mold	30.0	FCHS30A08	FCH30A10	FCHS30A12	FCH30A15		25/26
		FCHS30AU08	FCH30E10				25
			FCH30E10V				25
			FCH30AU10				25
TO-262	30.0				TCH30A15-11A		26
TO-263 (D2pak)	30.0				TCH30A15		26
TO-263LP	30.0	UCHS30A08		UCHS30A12			26
TO-247	30.0		KCH30A10		KCH30A15	KCH30A20	26
	60.0						26

: AEC-Q101準拠 AEC-Q101 qualified

2-1-4. アバランシェ保証型ショットキーバリアダイオード  
 Avalanche Guaranteed Schottky Barrier Diode

Package	$V_{RRM}[V]$	90	Page
	$I_o[A]$		
TO-263LP	30.0	UCHD30A09	27

: AEC-Q101準拠 AEC-Q101 qualified

2-1-5. ツエナーダイオード  
 Zener Diode

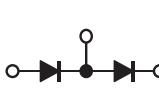
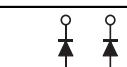
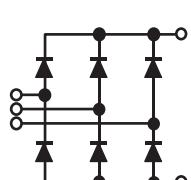
Package	$V_{RRM}[V]$	85	120	Page
	$I_o[A]$			
TO-263LP	20.0	USDZ20A085	USDZ20A12	27

: AEC-Q101準拠 AEC-Q101 qualified

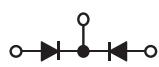
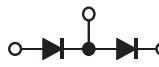
## 2. 製品早見表 Quick Reference

### 2-2. モジュール製品 Module Products

#### 2-2-1. 一般整流ダイオードモジュール Rectifier Diode Modules

Package	Circuit	$V_{RRM}[V]$ $I_o[A]$	800	1600	1800	Page
PD		30	PD30KN8	PD30KN16		28
		60	PD60KN8	PD60KN16		28
		100	PD100N8C	PD100N16		28
			PD100KN8	PD100KN16		28
				PD100MYN16	PD100MYN18	28
		150	PD150S8	PD150S16		28
		150	PD150KN8	PD150KN16		28
		200	PD200S8	PD200S16		28
			PD200KN8	PD200KN16		28
				PD200MYN16	PD200MYN18	28
		230	PD230S8	PD230S16		28
		250	PD250KN8A	PD250KN16A		28
		260		PD260MYN16	PD260MYN18	28
		380		PD380MYN16	PD380MYN18	28
		700		PD700MYN16	PD700MYN18	28
PR		250	PR250KN8N			28
PE		30	PE30SN8	PE30SN16		28
		100	PE100SN8			28
PF		30	PF30SN8	PF30SN16		28
		100	PF100SN8			28
PT		50	PT50SN8	PT50SN16		29
		50	PT50KN8	PT50KN16		29
		75	PT76SN8	PT76SN16		29
			PT75KN8	PT75KN16		29
		80		PT80MYN16	PT80MYN18	29
		100	PT100SN8	PT100SN16		29
			PT100KN8	PT100KN16		29
		150	PT150KN8	PT150KN16		29
			PT150N8	PT150N16		29
				PT150MYN16	PT150MYN18	29
		200	PT200KN8	PT200KN16		29
			PT200N8	PT200N16		29
				PT200MYN16	PT200MYN18	29
		300	PT300S8	PT300S16		29

## 2-2-2. ファストリカバリダイオードモジュール Fast Recovery Diode Modules

Package	Circuit	$V_{RRM}[V]$ $I_o[A]$	200	400	600	1200	Page
PC-F		100			PC100FYN6		30
		100			PC100FYN6C		30
		150			PC150FYN6		30
		150			PC150FYN6C		30
		150			PC151FYN6		30
		150			PC151FYN6C		30
		200			PC201FKN6		30
		200			PC200FYN6		30
		200			PC200FYN6C		30
		300			PC300FN6		30
PD-F		100			PD100FYN6		30
		150			PD150FYN6		30
		150			PD151FYN6		30
		200			PD201FKN6		30
		200			PD200FYN6		30
P2H-F		30	P2H30F2	P2H30F4			30
		50				P2H50F12	30
		60	P2H60F2	P2H60F4			30
		80	P2H80F2	P2H80F4			30

## 2-2-3. ショットキーバリアダイオードモジュール Schottky Barrier Diode Modules

Package	Circuit	$V_{RRM}[V]$ $I_o[A]$	100	150	200	Page
P2H-Q		30	P2H30QH10	P2H30QH15	P2H30QH20	30
		60	P2H60QH10	P2H60QH15	P2H60QH20	30
		80	P2H80QH10	P2H80QH15	P2H80QH20	30

## 2-2-4. アバランシェ保証型ショットキーバリアダイオードモジュール

Avalanche Guaranteed Schottky Barrier Diode Modules

Package	Circuit	$V_{RRM}[V]$ $I_o[A]$	90	120	Page
MR		80	MR80QZ09N	MR80QZ12N	30

## 2. 製品早見表 Quick Reference

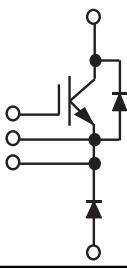
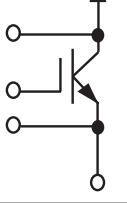
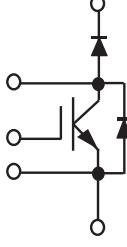
### 2-2-5. サイリスタモジュール Thyristor Modules

Package	Circuit	$V_{DRM}[V]$ $I_o[A]$	800	1600	Page
PHT		30	PHT308C		31
		60	PHT608C		31
		60	PHT608AC	PHT6016AC	31
		250	PHT250N8	PHT250N16	31
PAH		30	PAH30N8CM	PAH30N16CM	31
		60	PAH60N8CM	PAH60N16CM	31
		60	PAH60LN8	PAH60LN16	31
		100	PAH100N8CM		31
		100	PAH100LN8	PAH100N16	31
		150		PAH150N16	31
		200	PAH200N8		31
		250	PAH250N8		31
		300	PAH300N8		31
PGH		50	PGH50N8	PGH50N16	31
		75	PGH75N8	PGH75N16	31
		100	PGH100N8	PGH100N16	31
		100	PGH101N8		31
		150	PGH150N8	PGH150N16	31
		200	PGH200N8	PGH200N16	31

### 2-2-6. IGBT モジュール (1/2) IGBT Modules (1/2) ※Not Recommended for New Design

Package	Circuit	$V_{CES}[V]$ $I_o[A]$	650	1200	Page
PHMB		50		PHMB50W12CL	32
PDMB		50	PDMB50W6	PDMB50W12	32
		75	PDMB75W6	PDMB75W12	32
		100	PDMB100W6	PDMB100W12	32
		150	PDMB150W6	PDMB150W12	32
		200	PDMB200W6	PDMB200W12	32
		300	PDMB300W6	PDMB300W12	32
		400	PDMB400W6	PDMB400W12	32
		600		PDMB600W12	32
PCHMB		50	PCHMB50W6	PCHMB50W12	32
		75	PCHMB75W6	PCHMB75W12	32
		100	PCHMB100W6	PCHMB100W12	32
		150	PCHMB150W6	PCHMB150W12	32
		200	PCHMB200W6	PCHMB200W12	32
		300	PCHMB300W6	PCHMB300W12	32
		400	PCHMB400W6	PCHMB400W12	32

2-2-6. IGBT モジュール (2/2) IGBT Modules (2/2) ※Not Recommended for New Design

Package	Circuit	$V_{CES}$ [V] $I_o$ [A]	650	1200	Page
PCFMB		50	PCFMB50W6	PCFMB50W12	32
		75	PCFMB75W6	PCFMB75W12	32
		100	PCFMB100W6	PCFMB100W12	32
		150	PCFMB150W6	PCFMB150W12	32
		200	PCFMB200W6	PCFMB200W12	32
		300	PCFMB300W6	PCFMB300W12	32
		400	PCFMB400W6	PCFMB400W12	32
PRHMB		50	PRHMB50W6	PRHMB50W12	33
		75	PRHMB75W6	PRHMB75W12	33
		100	PRHMB100W6	PRHMB100W12	33
		150	PRHMB150W6	PRHMB150W12	33
		200	PRHMB200W6	PRHMB200W12	33
		300	PRHMB300W6	PRHMB300W12	33
		400	PRHMB400W6	PRHMB400W12	33
PRFMB		50	PRFMB50W6	PRFMB50W12	33
		75	PRFMB75W6	PRFMB75W12	33
		100	PRFMB100W6	PRFMB100W12	33
		150	PRFMB150W6	PRFMB150W12	33
		200	PRFMB200W6	PRFMB200W12	33
		300	PRFMB300W6	PRFMB300W12	33
		400	PRFMB400W6	PRFMB400W12	33

2-2-7. ソリッドステートリレー Solid State Relays (SSR)  
AC リレー AC Relays

Load Current [A]	Rated Voltage [V]	240 V <sub>rms</sub>		Page
		非ゼロ電圧スイッチング AC Relays/Non Zero-Cross Switching Type	ゼロ電圧スイッチング AC Relays/Zero-Cross Switching Type	
1.0	D2N201LD			34
	D2N201LE			34
	D2N201LF			34
	D2N201LG			34
2.0	D2N202LD			34
	D2N202LE			34
	D2N202LF			34
	D2N202LG			34
3.0	D2N203LD			34
	D2N203LE			34
	D2N203LF			34
	D2N203LG			34
15.0		PHA15DW2RP		34
25.0		PHA25DW2RP		34
35.0		PHA35DW2RP		34
45.0		PHA45DW2RP		34

## 2. 製品早見表 Quick Reference

### 2-3. ハイパワー製品 Hi Power Products

#### 2-3-1. 一般整流ダイオード Rectifier Diodes

Case Style	Parts No.	I <sub>o</sub> [A]	V <sub>RRM</sub> [V]												Page		
			100	200	400	600	800	1000	1200	1400	1600	1800	2000	2500	3000	4000	
スタッド型 Stud Package	15MA	25													O	O	35
平型 Flat Package	253PJA	250					O	O	O	O	O						35
	303PJA	300										O	O	O			35
	403PJA	400				O	O		O	O	O						35
	503PJA	500										O	O	O			35
	603PJA	600											O		O		35
	703PJA	700				O	O	O	O	O	O						35
	801PJA	800											O		O		35
	1003PJA	1000											O	O			35
	1500PJA	1500	O	O	O												35
	1603PJA	1600											O	O			35
	3500PJA	3500	O	O	O												35

#### 2-3-2. ファストリカバリダイオード Fast Recovery Diodes

Case Style	Parts No.	I <sub>o</sub> [A]	V <sub>RRM</sub> [V]				Page
			1600	1800	2000	2500	
スタッド型 Stud Package	15MLA	25	O	O	O		36
	15MLS		O		O	O	36

#### 2-3-3. サイリスタ Thyristors

Case Style	Parts No.	I <sub>o</sub> [A]	V <sub>DRM</sub> [V]												Page	
			100	200	400	600	800	1000	1200	1400	1600	1800	2000	2500		
平型 Flat Package	253PA	250						O	O	O	O					37
	403PAB	400										O	O	O		37
	503PA	500				O	O	O	O	O	O					37
	503PAB	500										O	O	O		37
	553PA	550				O	O	O	O	O	O					37
	803PA	800	O	O	O	O	O	O	O							37
	853PA	850									O					37
	853PAB	850										O		O		37
	1003PA	1000						O	O	O	O					37
	1003PAB	1000										O	O	O		37
	1503PA	1500			O	O	O	O	O	O	O					37
	3003PA	3000			O		O	O	O	O	O					37
	4003PA	4000			O	O	O									37

#### 2-3-4. 高速スイッチングサイリスタ Fast Turn-Off Thyristors

Case Style	Parts No.	I <sub>o</sub> [A]	V <sub>DRM</sub> [V]				Page
			1000		1200		
平型 Flat Package	1003PLF	1000	O		O		38
	1003PLH					O	38
	2503PLF	2500	O				38
	2503PLH		O		O		38

### 3. 定格・特性表 Specifications

#### 3-1. ディスクリート製品 Discrete Products

##### 3-1-1. 一般整流ダイオード Rectifier Diodes

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>(thj-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type
3Max × φ 2.7 (DO-41S)	10EDB40	400	1.0	45	0.01	1.00	1.0	-40 to +150	110.0 (j-a)*	0.170	A-1	
	10EDB60	600	1.0	45	0.01	1.00	1.0	-40 to +150	110.0 (j-a)*	0.170		
DO-204AC (DO-15)	20CDA40	400	2.0	75	0.01	1.00	2.0	-40 to +150	17.0 (j-l)	0.350	A-2	
	20CDA60	600	2.0	75	0.01	1.00	2.0	-40 to +150	17.0 (j-l)	0.350		
DO-201AD	30GDA40	400	3.0	100	0.01	1.00	3.0	-40 to +150	13.0 (j-l)	1.050	A-3	
	30GDA60	600	3.0	100	0.01	1.00	3.0	-40 to +150	13.0 (j-l)	1.050		
SOD-123	EP05DA40 ✓	400	0.5	8	0.01	1.10	0.5	-40 to +150	70.0 (j-l)	0.011	A-5	
DO-214AC (SMA)	EC10DA40 ✓	400	1.0	25	0.01	1.05	1.0	-40 to +150	108.0 (j-a)*	0.060	A-6	
	EC10DS4	400	1.0	25	0.01	1.10	1.0	-40 to +150	108.0 (j-a)*	0.060		
nSMC	NSD03A40 ✓	400	3.0	80	0.05	1.00	3.0	-40 to +150	13.0 (j-l)	0.160	A-9	
TO-220	FSD20A90	900	20.0	200	0.05	1.25	20.0	-40 to +150	1.50	1.700	A-15	J

✓ : AEC-Q101準拠 AEC-Q101 qualified

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

##### 3-1-2. ファストリカバリダイオード（単体）(1/2) Fast Recovery Diodes (Single chip) (1/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>(thj-c)</sub> [°C/W]	trr [ns]	Weight [g]	Outline No.	Connection type
3Max × φ 2.7 (DO-41S)	11EFS2	200	1.0	30	0.010	0.98	1.0	-40 to +150	110.0 (j-a)*	30	0.170	A-1	
	11EFS4	400	1.0	30	0.020	1.25	1.0	-40 to +150	110.0 (j-a)*	30	0.170		
DO-204AC (DO-15)	20CFA40	400	2.0	50	0.010	1.28	2.0	-40 to +150	17.0 (j-l)	35	0.350	A-2	
	20CFB60	600	2.0	50	0.010	1.58	2.0	-40 to +150	17.0 (j-l)	35	0.350		
DO-201AD	30GFA20	200	3.0	60	0.010	0.98	3.0	-40 to +150	13.0 (j-l)	30	1.050	A-3	
	30GFA40	400	3.0	60	0.020	1.25	3.0	-40 to +150	13.0 (j-l)	30	1.050		
	30GFD60	600	3.0	45	0.020	1.45	3.0	-40 to +150	13.0 (j-l)	45	1.050		
	30GFB60	600	3.0	45	0.020	1.70	3.0	-40 to +150	13.0 (j-l)	35	1.050		
SOD-123	EP05FA20 ✓	200	0.5	8	0.010	0.95	0.5	-40 to +150	70.0 (j-l)	30	0.011	A-5	
	EP04RA60 ✓	600	0.4	8	0.010	1.32	0.4	-40 to +150	70.0 (j-l)	40	0.011		
DO-214AC (SMA)	EC11FS2 ✓	200	1.0	20	0.010	0.98	1.0	-40 to +150	108.0 (j-a)*	30	0.060	A-6	
	EC10UA20	200	1.0	20	0.020	1.10	1.0	-40 to +150	108.0 (j-a)*	20	0.060		
	EC30FA20 ✓	200	3.0	45	0.010	0.98	3.0	-40 to +150	23.0 (j-l)	30	0.060		
	EC11FS4 ✓	400	1.0	20	0.020	1.25	1.0	-40 to +150	108.0 (j-a)*	30	0.060		
	EC30FA40 ✓	400	3.0	45	0.020	1.25	3.0	-40 to +150	23.0 (j-l)	30	0.060		
	EC8FS6 ✓	600	0.8	20	0.020	1.32	0.8	-40 to +150	108.0 (j-a)*	80	0.060		
	EC30FH60 ✓	600	3.0	35	0.020	1.22	3.0	-40 to +150	23.0 (j-l)	60	0.060		
nSMC	NSF03A20	200	3.0	45	0.010	0.98	3.0	-40 to +150	13.0 (j-l)	30	0.160	A-9	
	NSF03A40 ✓	400	3.0	45	0.020	1.25	3.0	-40 to +150	13.0 (j-l)	30	0.160		
	NSF03E60 ✓	600	3.0	60	0.020	1.28	3.0	-40 to +150	13.0 (j-l)	75	0.160		
	NSF03B60 ✓	600	3.0	45	0.020	1.70	3.0	-40 to +150	13.0 (j-l)	35	0.160		
	NSU03A60	600	3.0	35	0.020	2.30	3.0	-40 to +150	13.0 (j-l)	32	0.160		
TO-277	VSF05A20 ✓	200	5.0	80	0.010	0.98	5.0	-55 to +175	9.0 (j-l)	35	0.086	A-10	L
TO-251	EA31FS4	400	3.0	45	0.020	1.25	3.0	-40 to +150	6.00	30	0.350	A-11	
TO-252 (Dpak)	EA31FS2-F	200	3.0	45	0.010	0.98	3.0	-40 to +150	6.00	30	0.300	A-12	
	EA31FS4-F	400	3.0	45	0.020	1.25	3.0	-40 to +150	6.00	30	0.300		
	ESF03F60-F	600	3.0	45	0.020	1.70	3.0	-55 to +175	6.00	35	0.300		
	ESF05H60-F	600	5.0	80	0.020	1.35	5.0	-55 to +175	6.00	90	0.300		
	ESF08HU60B-F	600	8.0	80	0.020	1.52	8.0	-55 to +175	6.00	100	0.300		
TO-220 2pin	GSF05A20	200	5.0	80	0.020	0.98	5.0	-40 to +150	5.00	35	1.850	A-13	
	GSF10A20	200	10.0	120	0.025	1.03	10.0	-40 to +150	4.00	35	1.850		
	GSF05A40	400	5.0	80	0.030	1.25	5.0	-40 to +150	5.00	45	1.850		
	GSF10A40	400	10.0	120	0.030	1.30	10.0	-40 to +150	4.00	45	1.850		
	GSF05F60	600	5.0	80	0.020	1.70	5.0	-40 to +175	5.00	40	1.850		

✓ : AEC-Q101準拠 AEC-Q101 qualified

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

### 3. 定格・特性表 Specifications

3-1-2. ファストリカバリダイオード（単体）(2/2) Fast Recovery Diodes (Single chip) (2/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	t <sub>rr</sub> [ns]	Weight [g]	Outline No.	Connection type
TO-220 Full-Mold 2pin	FSF05A20	200	5.0	80	0.020	0.98	5.0	-40 to +150	5.00	35	1.700	A-15	J
	FSU05A20	200	5.0	100	0.020	1.10	5.0	-40 to +150	5.00	27	1.700		
	FSF10A20	200	10.0	120	0.025	1.03	10.0	-40 to +150	4.00	35	1.700		
	FSU10A20	200	10.0	120	0.025	1.13	10.0	-40 to +150	4.00	32	1.700		
	FSU05A30	300	5.0	100	0.025	1.30	5.0	-40 to +150	5.00	30	1.700		
	FSU10A30	300	10.0	120	0.025	1.40	10.0	-40 to +150	4.00	35	1.700		
	FSF05A40	400	5.0	80	0.030	1.25	5.0	-40 to +150	5.00	45	1.700		
	FSU05A40	400	5.0	80	0.030	1.53	5.0	-40 to +150	5.00	32	1.700		
	FSF10A40	400	10.0	120	0.030	1.30	10.0	-40 to +150	4.00	45	1.700		
	FSU10A40	400	10.0	120	0.030	1.53	10.0	-40 to +150	4.00	40	1.700		
	FSF03F60	600	3.0	45	0.020	1.70	3.0	-55 to +175	8.00	35	1.700		
	FSF05H60	600	5.0	80	0.020	1.35	5.0	-55 to +175	5.00	90	1.700		
	FSF05HU60	600	5.0	45	0.020	1.65	5.0	-40 to +175	6.00	85	1.700		
	FSF05F60	600	5.0	80	0.020	1.70	5.0	-40 to +175	5.00	40	1.700		
	FSU05D60	600	5.0	60	0.010	2.30	5.0	-55 to +175	5.00	35	1.700		
	FSF08H60	600	8.0	100	0.020	1.35	8.0	-55 to +175	4.00	100	1.700		
	FSF08F60	600	8.0	100	0.020	1.70	8.0	-55 to +175	4.00	55	1.700		
	FSU08D60	600	8.0	90	0.020	2.30	8.0	-55 to +175	4.00	45	1.700		
	FSF10H60	600	10.0	120	0.030	1.35	10.0	-40 to +175	4.00	100	1.700		
	FSF10HU60	600	10.0	80	0.020	1.65	10.0	-40 to +175	5.00	100	1.700		
	FSF10HU60V	600	10.0	80	0.020	1.65	10.0	-40 to +175	5.00	100	1.700		
	FSF10F60	600	10.0	120	0.030	1.80	10.0	-55 to +175	4.00	65	1.700		
	FSU10D60	600	10.0	100	0.030	2.30	10.0	-55 to +175	4.00	45	1.700		
	FSU10D60V	600	10.0	100	0.030	2.30	10.0	-55 to +175	4.00	45	1.700	A-16	A-15
	FSF15H60	600	15.0	140	0.030	1.35	15.0	-55 to +175	3.00	120	1.700		
	FSF15F60	600	15.0	140	0.030	1.57	15.0	-55 to +175	3.00	60	1.700		
	FSU15D60	600	15.0	140	0.030	2.30	15.0	-55 to +175	3.00	55	1.700		
TO-220 Full-Mold	FSF05A20B	200	5.0	80	0.020	0.98	5.0	-40 to +150	5.00	35	1.750	A-17	F
	FSF10A20B	200	10.0	120	0.025	1.03	10.0	-40 to +150	4.00	35	1.750		
	FSF05A40B	400	5.0	80	0.030	1.25	5.0	-40 to +150	5.00	45	1.750		
	FSF10A40B	400	10.0	120	0.030	1.30	10.0	-40 to +150	4.00	45	1.750		
	FSF05F60B	600	5.0	80	0.020	1.70	5.0	-40 to +175	5.00	40	1.750		
	FSF10F60B	600	10.0	120	0.030	1.80	10.0	-55 to +175	4.00	65	1.750		
TO-262	TSF05A20-11A	200	5.0	80	0.030	0.98	5.0	-40 to +150	5.00	35	1.450	A-20	I
	TSU05D60-11A	600	5.0	60	0.010	2.30	5.0	-55 to +175	5.00	35	1.450		
	TSU10D60-11A	600	10.0	100	0.030	2.30	10.0	-55 to +175	4.00	45	1.450		
TO-263	TSF05A20	200	5.0	80	0.030	0.98	5.0	-40 to +150	5.00	35	1.400	A-21	I
	TSU05D60	600	5.0	60	0.010	2.30	5.0	-55 to +175	5.00	35	1.400		
	TSU10D60	600	10.0	100	0.030	2.30	10.0	-55 to +175	4.00	45	1.400		
TO-247 2pin	KSF30H60	600	30.0	250	0.050	1.35	30.0	-40 to +175	1.40	130	5.500	A-23	H
	KSF30F60	600	30.0	240	0.050	1.70	30.0	-55 to +175	1.40	60	5.500		
	KSU30D60	600	30.0	250	0.030	1.95	30.0	-55 to +175	1.40	60	5.500		
TO-247	KSF30A20B	200	30.0	400	0.025	0.98	30.0	-40 to +150	1.40	50	5.550	A-24	H
	KSU30A30B	300	30.0	400	0.050	1.33	30.0	-40 to +150	1.40	45	5.550		
	KSF30A40B	400	30.0	400	0.050	1.25	30.0	-40 to +150	1.40	60	5.550		
	KSF30F60B	600	30.0	240	0.050	1.70	30.0	-55 to +175	1.40	60	5.550		
	KSF60F60B	600	60.0	600	0.050	1.70	60.0	-55 to +175	0.75	85	5.550		
TO-247 2pin (long lead)	KSU30D60N	600	30.0	250	0.030	2.30	30.0	-55 to +175	1.40	60	5.500	A-25	I
	KSF30F60N	600	30.0	240	0.050	1.70	30.0	-55 to +175	1.40	60	5.500		
	KSF30H60N	600	30.0	250	0.050	1.35	30.0	-40 to +175	1.40	130	5.500		
	KSF60H60N	600	60.0	400	0.050	1.35	60.0	-55 to +175	0.75	140	5.500		
	KSF60F60N	600	60.0	600	0.050	1.70	60.0	-55 to +175	0.75	85	5.500		
	KSU60D60N	600	60.0	400	0.050	1.95	60.0	-55 to +175	0.75	65	5.500		

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

### 3-1-2. ファストリカバリダイオード（複合型）(1/2) Fast Recovery Diodes (Multi chip) (1/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	t <sub>rr</sub> [ns]	Weight [g]	Outline No.	Connection type	
TO-277	VCF06A20	200	6.0	60	0.010	0.93	3.0	-55 to +175	9.0 (j-l)	30.0	0.09	A-10	M	
TO-251	EA61FC2	200	6.0	45	0.010	0.98	3.0	-40 to +150	5.00	30.0	0.35	A-11	B	
	EA61FC4	400	6.0	45	0.020	1.25	3.0	-40 to +150	5.00	30.0	0.35			
TO-252 (Dpak)	EA61FC2-F	200	6.0	45	0.010	0.98	3.0	-40 to +150	5.00	30.0	0.30	A-12		
	EA61FC4-F	400	6.0	45	0.020	1.25	3.0	-40 to +150	5.00	30.0	0.30			
	ECF06B60-F	600	6.0	45	0.020	1.70	3.0	-40 to +150	5.00	35.0	0.30			
	ECF06F60-F	600	6.0	45	0.020	1.70	3.0	-55 to +175	5.00	35.0	0.30			
	ECU06B60-F	600	6.0	35	0.020	2.70	3.0	-40 to +150	5.00	27.0	0.30			
TO-220	GCF06A20	200	6.0	60	0.010	0.98	3.0	-40 to +150	4.00	30.0	1.90	A-14	E	
	GCF10A20	200	10.0	80	0.020	0.98	5.0	-40 to +150	3.00	35.0	1.90			
	GCF06A40	400	6.0	60	0.020	1.25	3.0	-40 to +150	4.00	30.0	1.90			
	GCF10A40	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.90			
	GCF06F60	600	6.0	45	0.020	1.70	3.0	-55 to +175	4.00	35.0	1.90			
TO-220 Full-Mold	FCF06A20	200	6.0	60	0.010	0.98	3.0	-40 to +150	4.00	30.0	1.75	A-17	E	
	FCF10A20	200	10.0	80	0.020	0.98	5.0	-40 to +150	3.00	35.0	1.75			
	FCU10A20	200	10.0	100	0.020	1.10	5.0	-40 to +150	3.00	27.0	1.75			
	FCF16A20	200	16.0	120	0.025	0.98	8.0	-40 to +150	2.00	35.0	1.75			
	FCU20A20	200	20.0	120	0.025	1.13	10.0	-40 to +150	2.00	32.0	1.75			
	FCU10A30	300	10.0	100	0.025	1.30	5.0	-40 to +150	3.00	30.0	1.75			
	FCU20D30	300	20.0	120	0.010	1.30	10.0	-55 to +175	2.00	33.0	1.75			
	FCF06A40	400	6.0	60	0.020	1.25	3.0	-40 to +150	4.00	30.0	1.75			
	FCF10A40	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.75			
	FCF10A40V	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.75			
	FCU10A40	400	10.0	80	0.030	1.53	5.0	-40 to +150	3.00	32.0	1.75	A-17	E	
	FCF16A40	400	16.0	120	0.030	1.25	8.0	-40 to +150	2.00	45.0	1.75			
	FCF20AU40	400	20.0	80	0.030	1.39	10.0	-40 to +150	3.00	45.0	1.75			
	FCU20A40	400	20.0	120	0.030	1.53	10.0	-40 to +150	2.00	40.0	1.75			
	FCF06F60	600	6.0	45	0.020	1.70	3.0	-55 to +175	4.00	35.0	1.75			
	FCF10H60	600	10.0	80	0.020	1.35	5.0	-40 to +175	3.00	90.0	1.75			
	FCF10F60	600	10.0	80	0.020	1.70	5.0	-55 to +175	3.00	40.0	1.75			
	FCU10A60	600	10.0	70	0.030	2.30	5.0	-40 to +150	3.00	35.0	1.75			
	FCU10D60	600	10.0	60	0.010	2.30	5.0	-55 to +175	3.00	35.0	1.75	A-18	G	
	FCF20H60	600	20.0	120	0.030	1.35	10.0	-55 to +175	4.00	100.0	1.75			
	FCF20G60	600	20.0	120	0.030	1.50	10.0	-40 to +150	2.00	75.0	1.75			
	FCF20F60	600	20.0	120	0.030	1.80	10.0	-55 to +175	4.00	65.0	1.75			
	FCU20D60	600	20.0	100	0.030	2.30	10.0	-55 to +175	4.00	45.0	1.75	A-17	G	
	FRF10A20	200	10.0	80	0.020	0.98	5.0	-40 to +150	3.00	35.0	1.75			
	FRF10A40	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.75			
	TCF10A20-11A	200	10.0	80	0.020	0.98	5.0	-40 to +150	3.00	35.0	1.45			
TO-262	TCU10A20-11A	200	10.0	100	0.020	1.10	5.0	-40 to +150	3.00	27.0	1.45	A-20	B	
	TCF16A20-11A	200	16.0	120	0.025	0.98	8.0	-40 to +150	2.00	35.0	1.45			
	TCU20A20-11A	200	20.0	120	0.025	1.13	10.0	-40 to +150	2.00	32.0	1.45			
	TCU20A30-11A	300	20.0	120	0.025	1.40	10.0	-40 to +150	2.00	35.0	1.45			
	TCF10A40-11A	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.45			
	TCU10A40-11A	400	10.0	80	0.030	1.53	5.0	-40 to +150	3.00	32.0	1.45			
	TCU20A40-11A	400	20.0	120	0.030	1.53	10.0	-40 to +150	2.00	40.0	1.45			
	TCF10B60-11A	600	10.0	80	0.030	1.70	5.0	-40 to +150	3.00	40.0	1.45			
	TCF10F60-11A	600	10.0	80	0.020	1.70	5.0	-55 to +175	3.00	40.0	1.45			
	TCF20B60-11A	600	20.0	120	0.030	1.80	10.0	-40 to +150	2.00	50.0	1.45			

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### 3. 定格・特性表 Specifications

#### 3-1-2. ファストリカバリダイオード（複合型）(2/2) Fast Recovery Diodes (Multi chip) (2/2)

Outline	Parts No.	$V_{RRM}$ [V]	$I_o$ [A]	$I_{FSM}$ [A]	$I_R$ [mA]	$V_{FM}$ [V]	@IFM [A]	$T_{JW}, T_{stg}$ [°C]	$R_{th(j-c)}$ [°C/W]	$t_{rr}$ [ns]	Weight [g]	Outline No.	Connection type
TO-263 (D2pak)	TCF10A20	200	10.0	80	0.020	0.98	5.0	-40 to +150	3.00	35.0	1.40	A-21	B
	TCU10A20	200	10.0	100	0.020	1.10	5.0	-40 to +150	3.00	27.0	1.40		
	TCF16A20	200	16.0	120	0.025	0.98	8.0	-40 to +150	2.00	35.0	1.40		
	TCU20A20	200	20.0	120	0.025	1.13	10.0	-40 to +150	2.00	32.0	1.40		
	TCU20A30	300	20.0	120	0.025	1.40	10.0	-40 to +150	2.00	35.0	1.40		
	TCF10A40	400	10.0	80	0.030	1.25	5.0	-40 to +150	3.00	45.0	1.40		
	TCU10A40	400	10.0	80	0.030	1.53	5.0	-40 to +150	3.00	32.0	1.40		
	TCU20A40	400	20.0	120	0.030	1.53	10.0	-40 to +150	2.00	40.0	1.40		
	TCF10B60	600	10.0	80	0.030	1.70	5.0	-40 to +150	3.00	40.0	1.40		
	TCF10F60	600	10.0	80	0.020	1.70	5.0	-55 to +175	3.00	40.0	1.40		
	TCF20B60	600	20.0	120	0.030	1.80	10.0	-40 to +150	2.00	50.0	1.40		
TO-263LP	UCU20D30	300	20.0	120	0.025	1.30	10.0	-40 to +175	2.00	33.0	0.59	A-22	E
	UCF10B40	400	10.0	80	0.020	1.35	5.0	-40 to +150	3.00	45.0	0.59		
	UCF20B40	400	20.0	150	0.02	1.30	10.0	-55 to +175	2.00	45.0	0.59		
TO-247	KCF16A20	200	16.0	120	0.025	0.98	8.0	-40 to +150	2.00	35.0	5.55	A-24	B
	KCU20A20	200	20.0	120	0.025	1.13	10.0	-40 to +150	2.00	32.0	5.55		
	KCF25A20	200	25.0	150	0.025	0.98	12.5	-40 to +150	2.00	50.0	5.55		
	KCU30A20	200	30.0	150	0.025	1.13	15.0	-40 to +150	2.00	38.0	5.55		
	KCU20A30	300	20.0	120	0.025	1.40	10.0	-40 to +150	2.00	35.0	5.55		
	KCU30A30	300	30.0	150	0.025	1.30	15.0	-40 to +150	2.00	38.0	5.55		
	KCF16A40	400	16.0	120	0.030	1.25	8.0	-40 to +150	2.00	45.0	5.55		
	KCU20A40	400	20.0	120	0.030	1.53	10.0	-40 to +150	2.00	40.0	5.55		
	KCF25A40	400	25.0	200	0.050	1.25	12.5	-40 to +150	2.00	60.0	5.55		
	KCU30A40	400	30.0	150	0.030	1.57	15.0	-40 to +150	2.00	45.0	5.55		
TO-247 (long lead)	KCF20F60	600	20.0	120	0.030	1.80	10.0	-55 to +175	2.00	65.0	5.55	A-26	B
	KCF30F60N	600	30.0	140	0.030	1.57	15.0	-55 to +175	2.00	60.0	5.55		
	KCU60D60N	600	60.0	250	0.030	2.30	30.0	-55 to +175	0.75	60.0	5.55		

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#### 3-1-3. ショットキーバリアダイオード（単体）(1/2) Schottky Barrier Diodes (Single chip)

Outline	Parts No.	$V_{RRM}$ [V]	$I_o$ [A]	$I_{FSM}$ [A]	$I_R$ [mA]	$V_{FM}$ [V]	@IFM [A]	$T_{JW}, T_{stg}$ [°C]	$R_{th(j-c)}$ [°C/W]	Weight [g]	Outline No.	Connection type
3Max × φ 2.7 (DO-41S)	11EQS03L	30	1.0	40	1.00	0.45	1.0	-40 to +150	110.0 (j-a)*	0.170	A-1	A
	11EQS04	40	1.0	40	1.00	0.55	1.0	-40 to +150	110.0 (j-a)*	0.170		
	11EQS06	60	1.0	25	1.00	0.58	1.0	-40 to +150	110.0 (j-a)*	0.170		
DO-204AC (DO-15)	20CQA03L	30	2.0	50	0.50	0.46	2.0	-40 to +150	17.0 (j-l)	0.350	A-2	A
	20CQA04	40	2.0	80	0.30	0.55	2.0	-40 to +150	17.0 (j-l)	0.350		
	20CQA06	60	2.0	45	3.00	0.60	2.0	-40 to +150	17.0 (j-l)	0.350		
DO-201AD	30GQA03L	30	3.0	120	0.50	0.45	3.0	-40 to +150	13.0 (j-l)	1.050	A-3	A
	30GQA04	40	3.0	120	0.30	0.55	3.0	-40 to +150	13.0 (j-l)	1.050		
	50GQSA045	45	5.0	150	0.35	0.55	5.0	-40 to +150	13.0 (j-l)	1.050		
	30GQA06	60	3.0	75	0.30	0.58	3.0	-40 to +150	13.0 (j-l)	1.050		
	50GQSA065	65	5.0	150	0.40	0.61	5.0	-40 to +150	13.0 (j-l)	1.050		
SOD-323FL	SA10QA03	30	1.0	20	0.10	0.45	0.7	-40 to +150	30.0 (j-l)	0.004	A-4	A
	SA10QA04	40	1.0	20	0.10	0.52	0.7	-40 to +150	30.0 (j-l)	0.004		
	SA10QA06	60	1.0	20	0.10	0.58	0.7	-40 to +150	30.0 (j-l)	0.004		
SOD-123	EP05Q03L	30	0.5	8	0.20	0.45	0.5	-40 to +150	70.0 (j-l)	0.011	A-5	A
	EP10QY03	30	1.0	12	1.00	0.47	1.0	-40 to +150	70.0 (j-l)	0.011		
	EP05Q04	40	0.5	8	0.10	0.51	0.5	-40 to +150	70.0 (j-l)	0.011		
	EP10QY04	40	1.0	12	1.00	0.57	1.0	-40 to +150	70.0 (j-l)	0.011		
	EP05Q06	60	0.5	8	0.10	0.62	0.5	-40 to +150	70.0 (j-l)	0.011		

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### 3-1-3. ショットキーバリアダイオード (単体) (2/2) Schottky Barrier Diodes (Single chip) (2/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>JW</sub> , T <sub>STG</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type	
DO-214AC (SMA)	EC10QS03L	30	1.0	20	1.00	0.45	1.0	-40 to +150	108.0 (j-a)*	0.06	A-6	A	
	EC21QS03L	30	2.0	50	2.00	0.47	2.0	-40 to +150	23.0 (j-l)	0.06			
	EC31QS03L	30	3.0	60	3.00	0.45	3.0	-40 to +150	23.0 (j-l)	0.06			
	EC10QS04	40	1.0	20	1.00	0.55	1.0	-40 to +150	108.0 (j-a)*	0.06			
	EC21QS04	40	2.0	60	1.00	0.55	2.0	-40 to +150	23.0 (j-l)	0.06			
	EC31QS04	40	3.0	60	3.00	0.55	3.0	-40 to +150	23.0 (j-l)	0.06			
	EC20QSA045	45	2.0	50	0.20	0.55	2.0	-40 to +150	23.0 (j-l)	0.06			
	EC30QSA045	45	3.0	60	0.30	0.55	3.0	-40 to +150	23.0 (j-l)	0.06			
	EC10QS06	60	1.0	20	1.00	0.58	1.0	-40 to +150	108.0 (j-a)*	0.06			
	EC21QS06	60	2.0	40	2.00	0.61	2.0	-40 to +150	23.0 (j-l)	0.06			
	EC31QS06	60	3.0	50	3.00	0.61	3.0	-40 to +150	23.0 (j-l)	0.06			
	EC20QSA065	65	2.0	50	0.20	0.61	2.0	-40 to +150	23.0 (j-l)	0.06			
	EC30QSA065	65	3.0	60	0.30	0.61	3.0	-40 to +150	23.0 (j-l)	0.06			
NA (DO221BC)	NA03QSA035	35	3.0	60	2.00	0.47	3.0	-40 to +150	13.0 (j-l)	0.03	A-7		
	NA05QSA035	35	5.0	100	3.00	0.47	5.0	-40 to +150	13.0 (j-l)	0.03			
	NA03QSA045	45	3	60	0.2	0.55	3	-40 to +150	13.0 (j-l)	0.03			
	NA05QSA045	45	5	100	0.35	0.57	5	-40 to +150	13.0 (j-l)	0.03			
	NA03QSA065	65	3.0	60	0.30	0.61	3.0	-40 to +150	13.0 (j-l)	0.03			
	NA05QSA065	65	5.0	100	0.40	0.61	5.0	-40 to +150	13.0 (j-l)	0.03			
nSMC	NSQ03A03L	30	3.0	100	3.00	0.45	3.0	-40 to +150	13.0 (j-l)	0.16	A-9		
	NSQ03A04	40	3.0	80	3.00	0.55	3.0	-40 to +150	13.0 (j-l)	0.16			
	NSQ03A06	60	3.0	50	3.00	0.58	3.0	-40 to +150	13.0 (j-l)	0.16			
TO-277	VSQS10A045	45	10.0	280	0.60	0.56	10.0	-40 to +150	9.0 (j-l)	0.09	A-10	L	
	VSQS15A045	45	15.0	230	1.00	0.54	15.0	-40 to +150	6.0 (j-l)	0.09			
	VSQS10A065	65	10.0	140	0.20	0.65	10.0	-40 to +150	9.0 (j-l)	0.09			
TO-251	EA30QS04	40	3.0	45	3.00	0.55	3.0	-40 to +150	6.00	0.35	A-11	C	
TO-252 (Dpak)	EA30QS03L-F	30	3.0	45	3.00	0.45	3.0	-40 to +150	6.00	0.30	A-12		
	EA30QS04-F	40	3.0	45	3.00	0.55	3.0	-40 to +150	6.00	0.30			
	EA30QS06-F	60	3.0	45	3.00	0.58	3.0	-40 to +150	6.00	0.30			
TO-220 2pin	GSQ05A04	40	5.0	120	5.00	0.55	5.0	-40 to +150	5.00	1.85	A-13	I	
	GSQ10A04	40	10.0	180	10.00	0.59	10.0	-40 to +150	3.00	1.85			
	GSQ05A06	60	5.0	110	5.00	0.58	5.0	-40 to +150	5.00	1.85			
	GSQ10A06	60	10.0	150	10.00	0.67	10.0	-40 to +150	3.00	1.85			
TO-220 Full-Mold 2pin	FSQ05A03L	30	5.0	120	5.00	0.47	5.0	-40 to +150	5.00	1.70	A-15	J	
	FSQS05A045	45	5.0	120	0.35	0.54	5.0	-40 to +150	5.00	1.70			
	FSQS10A045	45	10.0	180	0.60	0.54	10.0	-40 to +150	3.00	1.70			
	FSQS15A045	45	15.0	200	1.00	0.54	15.0	-40 to +150	3.00	1.70			
	FSQS15A045V	45	15.0	200	1.00	0.54	15.0	-40 to +150	3.00	1.70			
	FSQS30A045	45	30.0	400	1.00	0.56	30.0	-40 to +150	1.50	1.70			
	FSQS05A065	65	5.0	120	0.40	0.58	5.0	-40 to +150	5.00	1.70			
	FSQS05AU065	65	5.0	100	0.30	0.69	5.0	-40 to +150	5.00	1.70			
TO-247 2pin	FSQS10A065	65	10.0	180	1.00	0.60	10.0	-40 to +150	3.00	1.70	A-23	I	
	KSQ15A04	40	15.0	250	15.00	0.55	15.0	-40 to +150	2.00	5.50			
	KSQ30A04	40	30.0	400	25.00	0.58	30.0	-40 to +150	1.30	5.50			
	KSQ15A06	60	15.0	200	15.00	0.65	15.0	-40 to +150	2.00	5.50			
TO-247 2pin	KSQ30A06	60	30.0	400	25.00	0.67	30.0	-40 to +150	1.30	5.50			

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### 3. 定格・特性表 Specifications

3-1-3. ショットキーバリアダイオード H シリーズ〈低リーク品〉(単体) Schottky Barrier Diodes H-Series <Low-IR type> (Single chip)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>JW</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type	
3Max × φ 2.7 (DO-41S)	11EQS10	100	1.0	40	0.50	0.85	1.0	-40 to +150	110.0 (j-a)*	0.170	A-1	A	
	10EHA20	200	1.0	20	0.20	0.90	1.0	-40 to +150	110.0 (j-a)*	0.170			
DO-204AC (DO-15)	20CHA10	100	2.0	70	0.20	0.85	2.0	-40 to +150	17.0 (j-l)	0.350	A-2		
	20CHA20	200	2.0	40	0.20	0.90	2.0	-40 to +150	17.0 (j-l)	0.350			
DO-201AD	50GHSA08	80	5.0	120	0.10	0.70	5.0	-40 to +150	13.0 (j-l)	1.050	A-3		
	30GHA10	100	3.0	100	0.20	0.85	3.0	-40 to +150	13.0 (j-l)	1.050			
	50GHS12	120	5.0	120	0.10	0.86	5.0	-40 to +150	13.0 (j-l)	1.050			
	30GHA20	200	3.0	60	0.20	0.90	3.0	-40 to +150	13.0 (j-l)	1.050			
SOD-123	EP10HY03	30	1.0	12	0.50	0.56	1.0	-40 to +150	70.0 (j-l)	0.011	A-5		
	EP05H10	100	0.5	8	0.05	0.80	0.5	-40 to +150	70.0 (j-l)	0.011			
DO-214AC (SMA)	EC30H0A03L	30	3.0	60	0.50	0.54	3.0	-40 to +150	23.0 (j-l)	0.060	A-6		
	EC30H0A04	40	3.0	60	0.50	0.59	3.0	-40 to +150	23.0 (j-l)	0.060			
	EC10QS10	100	1.0	20	0.50	0.85	1.0	-40 to +150	108.0 (j-a)*	0.060			
	EC21QS10	100	2.0	50	1.00	0.85	2.0	-40 to +150	23.0 (j-l)	0.060			
	EC31QS10	100	3.0	60	2.00	0.85	3.0	-40 to +150	23.0 (j-l)	0.060			
	EC30HB15	150	3.0	60	0.10	0.85	3.0	-40 to +150	23.0 (j-l)	0.060			
	NA03HSA065	65	3.0	80	0.07	0.66	3.0	-40 to +150	13.0 (j-l)	0.030			
NA (DO221BC)	NA05HSA065	65	5.0	120	0.10	0.66	5.0	-40 to +150	13.0 (j-l)	0.030	A-7		
	NA03HSA08	80	3.0	80	0.10	0.70	3.0	-40 to +150	13.0 (j-l)	0.030			
	NA05HSA08	80	5.0	120	0.10	0.70	5.0	-40 to +150	13.0 (j-l)	0.030			
	NA03HSA12	120	3.0	60	0.07	0.86	3.0	-40 to +150	13.0 (j-l)	0.030			
	NA05HSA12	120	5.0	100	0.10	0.86	5.0	-40 to +150	13.0 (j-l)	0.030			
	NA03HA15	150	3.0	60	1.00	0.90	3.0	-40 to +150	13.0 (j-l)	0.030			
	NA03HA20	200	3.0	110	1.00	0.90	3.0	-40 to +150	13.0 (j-l)	0.030			
	NSH03A03L	30	3.0	80	0.50	0.53	3.0	-40 to +150	13.0 (j-l)	0.160			
nSMC	NSH05A03	30	5.0	100	1.00	0.57	5.0	-40 to +150	13.0 (j-l)	0.160	A-9	L	
	NSHS05A065	65	5.0	130	0.10	0.64	5.0	-40 to +150	13.0 (j-l)	0.160			
	NSH03A10	100	3.0	60	1.00	0.85	3.0	-40 to +150	13.0 (j-l)	0.160			
	NSH03A15	150	3.0	60	1.00	0.90	3.0	-40 to +150	13.0 (j-l)	0.160			
	VSHS15A08	80	15.0	150	0.10	0.76	15.0	-40 to +150	6.0 (j-l)	0.086	A-10		
TO-277	VSHS03A12	120	3.0	70	0.07	0.86	3.0	-40 to +150	9.0 (j-l)	0.086			
	VSHS10A12	120	10.0	190	0.10	0.89	10.0	-40 to +150	9.0 (j-l)	0.086			
	VSHS15A12	120	15.0	150	0.10	0.92	15.0	-40 to +150	6.0 (j-l)	0.086			
	EA30QS10-F	100	3.0	45	1.00	0.85	3.0	-40 to +150	6.00	0.300	A-12	C	
TO-252 (Dpak)	ESH05A15-F	150	5.0	130	1.00	0.88	5.0	-40 to +150	5.00	0.300		H	
	GSH05A10	100	5.0	120	1.00	0.85	5.0	-40 to +150	5.00	1.850	A-13	I	
TO-220 2pin	GSH10A10	100	10.0	180	1.00	0.88	10.0	-40 to +150	3.00	1.850			
	FSH05A03L	30	5.0	120	1.00	0.57	5.0	-40 to +150	5.00	1.700	A-15	J	
TO-220 Full-Mold 2pin	FSH10A03L	30	10.0	180	1.00	0.54	10.0	-40 to +150	3.00	1.700			
	FSHS05A065	65	5.0	120	0.10	0.63	5.0	-40 to +150	5.00	1.700			
	FSHS05A08	80	5.0	120	0.10	0.72	5.0	-40 to +150	5.00	1.700			
	FSH05A10	100	5.0	120	1.00	0.85	5.0	-40 to +150	5.00	1.700			
	FSH10A10	100	10.0	180	1.00	0.88	10.0	-40 to +150	3.00	1.700			
	FSH05A15	150	5.0	130	1.00	0.88	5.0	-40 to +150	5.00	1.700			
	FSH10A15	150	10.0	180	1.00	0.90	10.0	-40 to +150	3.00	1.700			
	FSH05A20	200	5.0	100	0.20	0.90	5.0	-40 to +150	5.00	1.700			
TO-247 2pin	KSH15A10	100	15.0	250	2.00	0.88	15.0	-40 to +150	2.00	5.500	A-23	I	
	KSH30A20	200	30.0	300	0.50	0.95	30.0	-40 to +150	1.30	5.500			

☑ : AEC-Q101準拠 AEC-Q101 qualified

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

### 3-1-3. ショットキーバリアダイオード（複合）(1/2) Schottky Barrier Diodes (Multi chip) (1/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type	
NB	NB06QSA035	35	6.0	60	2.00	0.47	3.0	-40 to +150	7.0 (j-l)	0.06	A-8	K	
	NB10QSA035	35	10.0	100	3.00	0.47	5.0	-40 to +150	7.0 (j-l)	0.06			
	NB06QSA045	45	6.0	60	0.20	0.55	3.0	-40 to +150	7.0 (j-l)	0.06			
	NB10QSA045	45	10.0	100	0.35	0.57	5.0	-40 to +150	7.0 (j-l)	0.06			
	NB06QSA065	65	6.0	60	0.30	0.61	3.0	-40 to +150	7.0 (j-l)	0.06			
	NB10QSA065	65	10.0	100	0.40	0.61	5.0	-40 to +150	7.0 (j-l)	0.06			
TO-251	EA60QC04	40	6.0	45	3.00	0.55	3.0	-40 to +150	5.00	0.35	A-11	B	
	EA60QC06	60	6.0	45	3.00	0.58	3.0	-40 to +150	5.00	0.35			
TO-252 (Dpak)	EA60QC03L-F	30	6.0	45	3.00	0.45	3.0	-40 to +150	5.00	0.30	A-12		
	ECQS10A035-F	35	10.0	100	3.00	0.47	5.0	-40 to +150	4.00	0.30			
	EA60QC04-F	40	6.0	45	3.00	0.55	3.0	-40 to +150	5.00	0.30			
	ECQS10A045-F	45	10.0	120	0.35	0.57	5.0	-40 to +150	4.00	0.30			
	EA60QC06-F	60	6.0	45	3.00	0.58	3.0	-40 to +150	5.00	0.30			
TO-220	GCQ30A03L	30	30.0	250	15.00	0.49	15.0	-40 to +150	1.50	1.90	A-14	B	
	GCQ10A04	40	10.0	120	5.00	0.55	5.0	-40 to +150	3.00	1.90			
	GCQ20A04	40	20.0	180	10.00	0.55	10.0	-40 to +150	1.50	1.90			
	GCQ30A04	40	30.0	250	15.00	0.55	15.0	-40 to +150	1.50	1.90			
	GCQ10A06	60	10.0	110	5.00	0.58	5.0	-40 to +150	3.00	1.90			
	GCQ20A06	60	20.0	150	10.00	0.65	10.0	-40 to +150	1.50	1.90			
	GCQ30A06	60	30.0	200	15.00	0.65	15.0	-40 to +150	1.50	1.90			
TO-220 Full-Mold	FCQ10A03L	30	10.0	120	5.00	0.47	5.0	-40 to +150	3.00	1.75	A-17	E	
	FCQ20A03L	30	20.0	180	10.00	0.49	10.0	-40 to +150	1.50	1.75			
	FCQ30A03L	30	30.0	250	15.00	0.49	15.0	-40 to +150	1.50	1.75			
	FCQS10A035	35	10.0	120	3.00	0.46	5.0	-40 to +150	3.00	1.75			
	FCQS10A045	45	10.0	120	0.35	0.57	5.0	-40 to +150	3.00	1.75			
	FCQS10AU045	45	10.0	120	0.20	0.59	5.0	-40 to +150	3.00	1.75			
	FCQS10AU045V	45	10.0	120	0.20	0.59	5.0	-40 to +150	3.00	1.75	A-18		
	FCQS20A045	45	20.0	180	0.60	0.57	10.0	-40 to +150	2.00	1.75			
	FCQS30A045	45	30.0	200	1.00	0.55	15.0	-40 to +150	1.50	1.75	A-17		
	FCQS30AU045	45	30.0	180	0.60	0.60	15.0	-40 to +150	2.00	1.75			
	FCQS10A065	65	10.0	120	0.40	0.61	5.0	-40 to +150	3.00	1.75			
	FCQS20A065	65	20.0	180	1.00	0.63	10.0	-40 to +150	2.00	1.75	A-18		
	FCQS20BU065	65	20.0	120	0.40	0.74	10.0	-40 to +150	3.00	1.75			
	FCQS20BU065V	65	20.0	120	0.40	0.74	10.0	-40 to +150	3.00	1.75			
	FCQS30A065	65	30.0	200	1.50	0.64	15.0	-40 to +150	1.50	1.75	A-17		
	FCQS30AU065	65	30.0	180	1.00	0.69	15.0	-40 to +150	2.00	1.75			
	FRQS20A045	45	20.0	180	0.60	0.57	10.0	-40 to +150	2.00	1.75			
	FRQS20A065	65	20.0	180	1.00	0.63	10.0	-40 to +150	2.00	1.75	G		
TO-262	TCQ20A03L-11A	30	20.0	180	10.00	0.45	10.0	-40 to +150	1.50	1.45			
	TCQ10A04-11A	40	10.0	120	5.00	0.55	5.0	-40 to +150	3.00	1.45			
	TCQ20A04-11A	40	20.0	180	10.00	0.55	10.0	-40 to +150	1.50	1.45			
	TCQ30A04-11A	40	30.0	250	15.00	0.55	10.0	-40 to +150	1.50	1.45			
	TCQ30A06-11A	60	30.0	200	15.00	0.65	10.0	-40 to +150	1.50	1.45			
TO-263 (D2pak)	TCQ20A03L	30	20.0	180	10.00	0.45	10.0	-40 to +150	1.50	1.40	A-21	B	
	TCQ10A04	40	10.0	120	5.00	0.55	5.0	-40 to +150	3.00	1.40			
	TCQ20A04	40	20.0	180	10.00	0.55	10.0	-40 to +150	1.50	1.40			
	TCQ30A04	40	30.0	250	15.00	0.55	10.0	-40 to +150	1.50	1.40			
	TCQ30A06	60	30.0	200	15.00	0.65	10.0	-40 to +150	1.50	1.40			
TO-263LP	UCQ30A03	30	30.0	230	1.50	0.50	15.0	-40 to +150	1.50	0.59	A-22	E	
	UCQS20A045	45	20.0	220	0.60	0.54	10.0	-40 to +150	2.00	0.59			
	UCQS30A045	45	30.0	250	1.00	0.55	15.0	-40 to +150	1.50	0.59			
	UCQS10A065	65	10.0	120	0.40	0.61	5.0	-40 to +150	2.00	0.59			

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### 3. 定格・特性表 Specifications

#### 3-1-3. ショットキーバリアダイオード（複合）(2/2) Schottky Barrier Diodes (Multi chip) (2/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-e)</sub> [°C/W]	Weight [g]	Outline No.	Connection type
TO-247	KCQ30A03L	30	30.0	250	15.00	0.49	15.0	-40 to +125	1.30	5.55	A-24	B
	KCQ60A03L	30	60.0	400	25.00	0.50	30.0	-40 to +150	1.00	5.55		
	KCQ20A04	40	20.0	180	10.00	0.55	10.0	-40 to +150	1.50	5.55		
	KCQ30A04	40	30.0	300	15.00	0.55	15.0	-40 to +150	1.30	5.55		
	KCQ60A04	40	60.0	400	25.00	0.58	30.0	-40 to +150	1.00	5.55		
	KCQ20A06	60	20.0	150	10.00	0.65	10.0	-40 to +150	1.50	5.55		
	KCQ30A06	60	30	200	15	0.65	15.0	-40 to +150	1.30	5.55		
	KCQ60A06	60	60	400	25	0.67	30.0	-40 to +150	1.00	5.55		

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

#### 3-1-3. ショットキーバリアダイオード H シリーズ〈低リーク〉(複合)(1/2) Schottky Barrier Diodes H-Series <Low-IR type> (Multi chip) (1/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-e)</sub> [°C/W]	Weight [g]	Outline No.	Connection type	
NB	NB06HSA065	65	6.0	80	0.07	0.66	3.0	-40 to +150	7.0 (j-l)	0.06	A-8	K	
	NB10HSA065	65	10.0	120	0.10	0.66	5.0	-40 to +150	7.0 (j-l)	0.06			
	NB06HSA08	80	6.0	80	0.10	0.70	3.0	-40 to +150	7.0 (j-l)	0.06			
	NB10HSA08	80	10.0	120	0.10	0.70	5.0	-40 to +150	7.0 (j-l)	0.06			
	NB06HSA12	120	6.0	60	0.07	0.86	3.0	-40 to +150	7.0 (j-l)	0.06			
	NB10HSA12	120	10.0	100	0.10	0.86	5.0	-40 to +150	7.0 (j-l)	0.06			
TO-251	EA60QC10	100	6.0	45	1.00	0.85	3.0	-40 to +150	5.00	0.35	A-11	B	
TO-252 (Dpak)	ECHS10A08-F	80	10.0	100	0.10	0.70	5.0	-40 to +150	4.00	0.30	A-12		
	EA60QC10-F	100	6.0	45	1.00	0.85	3.0	-40 to +150	5.00	0.30			
	ECH06A20-F	200	6.0	60	0.20	0.90	3.0	-40 to +150	5.00	0.30			
TO-220	GCHS30A08	80	30.0	200	0.20	0.75	15.0	-40 to +150	1.50	1.90	A-14		
	GCH10A10	100	10.0	120	1.00	0.85	5.0	-40 to +150	3.00	1.90			
	GCH20A10	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	1.90			
	GCH30A10	100	30.0	250	2.00	0.88	15.0	-40 to +150	1.50	1.90			
TO-220 Full-Mold	FCH10A03L	30	10.0	120	1.00	0.57	5.0	-40 to +150	3.00	1.75	A-17	E	
	FCH20A03L	30	20.0	180	1.00	0.54	10.0	-40 to +150	1.50	1.75			
	FCH30A03L	30	30.0	250	1.00	0.56	15.0	-40 to +150	1.50	1.75			
	FCHS10A045	45	10.0	120	0.10	0.59	5.0	-40 to +150	3.00	1.75			
	FCHS20A045	45	20.0	180	0.10	0.58	10.0	-40 to +150	2.00	1.75			
	FCHS30A045	45	30.0	250	0.20	0.60	15.0	-40 to +150	1.50	1.75			
	FCHS10A065	65	10.0	120	0.10	0.66	5.0	-40 to +150	3.00	1.75			
	FCHS20A065	65	20.0	180	0.15	0.68	10.0	-40 to +150	2.00	1.75			
	FCHS30A065	65	30.0	200	0.20	0.64	15.0	-40 to +150	1.50	1.75			
	FCHS10A08	80	10.0	120	0.10	0.72	5.0	-40 to +150	3.00	1.75			
	FCHS20A08	80	20.0	180	0.15	0.75	10.0	-40 to +150	2.00	1.75			
	FCHS30A08	80	30.0	200	0.20	0.75	15.0	-40 to +150	1.50	1.75			
	FCHS30AU08	80	30.0	180	0.15	0.81	15.0	-40 to +150	2.00	1.75			
	FCH08A10	100	8.0	100	1.00	0.88	4.0	-40 to +150	3.00	1.75			
	FCH10E10	100	10.0	120	0.10	0.77	5.0	-40 to +150	3.00	1.75			
	FCH10A10	100	10.0	120	1.00	0.86	5.0	-40 to +150	3.00	1.75			
	FCH10AU10V	100	10.0	120	0.10	0.91	5.0	-40 to +150	3.00	1.75	A-18		
	FCH20E10	100	20.0	180	0.10	0.80	10.0	-40 to +150	1.50	1.75	A-17		
	FCH20E10V	100	20.0	180	0.10	0.80	10.0	-40 to +150	1.50	1.75	A-18		
	FCH20A10	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	1.75	A-17		
	FCH20AU10V	100	20.0	180	1.00	0.90	10.0	-40 to +150	2.30	1.75	A-17		
	FCH20BU10	100	20.0	120	0.10	1.00	10.0	-40 to +150	3.00	1.75	A-17		
	FCH30E10	100	30.0	250	0.10	0.80	15.0	-40 to +150	1.50	1.75	A-18		
	FCH30E10V	100	30.0	250	2.00	0.88	15.0	-40 to +150	1.50	1.75	A-18		
	FCH30A10	100	30.0	250	2.00	0.88	15.0	-40 to +150	1.50	1.75	A-17		
	FCH30AU10	100	30.0	200	0.20	0.94	15.0	-40 to +150	1.50	1.75	A-17		

3-1-3. ショットキーバリアダイオード H シリーズ（低リーク）(複合) (2/2) Schottky Barrier Diodes H-Series <Low-IR type> (Multi chip) (2/2)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>JW</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type	
TO-220 Full-Mold	FCHS08A12	120	8.0	100	0.10	0.89	4.0	-40 to +150	3.00	1.75	A-17	E	
	FCHS10A12	120	10.0	120	0.10	0.86	5.0	-40 to +150	3.00	1.75			
	FCHS20A12	120	20.0	180	0.10	0.89	10.0	-40 to +150	2.00	1.75			
	FCHS30A12	120	30.0	200	0.10	0.90	15.0	-40 to +150	1.50	1.75			
	FCH08A15	150	8.0	125	1.00	0.90	4.0	-40 to +150	3.00	1.75			
	FCH10A15	150	10.0	130	1.00	0.88	5.0	-40 to +150	3.00	1.75			
	FCH10A15V	150	10.0	130	1.00	0.88	5.0	-40 to +150	3.00	1.75	A-18		
	FCH20A15	150	20.0	180	1.00	0.90	10.0	-40 to +150	1.50	1.75	A-17		
	FCH20BU15	150	20.0	130	0.10	1.00	10.0	-40 to +150	3.00	1.75			
	FCH20BU15V	150	20.0	130	0.10	1.00	10.0	-40 to +150	3.00	1.75			
	FCH30A15	150	30.0	250	2.00	0.91	15.0	-40 to +150	1.50	1.75	A-17		
	FCH10A20	200	10.0	100	0.20	0.90	5.0	-40 to +150	3.00	1.75	A-17		
	FCH10A20V	200	10.0	100	0.20	0.90	5.0	-40 to +150	3.00	1.75			
	FCH20A20	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	1.75			
	FCH20A20V	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	1.75			
	FCH20AU20	200	20.0	100	0.20	1.05	10.0	-40 to +150	3.00	1.75			
	FCH20AU20V	200	20.0	100	0.20	1.05	10.0	-40 to +150	3.00	1.75	A-18		
	FRH20A10	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	1.75	A-17	G	
	FRH08A15	150	8.0	125	1.00	0.90	4.0	-40 to +150	3.00	1.75			
	FRH10A15	150	10.0	130	1.00	0.88	5.0	-40 to +150	3.00	1.75			
	FRH20A15	150	20.0	180	1.00	0.90	10.0	-40 to +150	1.50	1.75			
	FRH10A20	200	10.0	100	0.20	0.90	5.0	-40 to +150	3.00	1.75			
	FRH20A20	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	1.75			
TO-262	TCH30A06-11A	60	30.0	200	1.00	0.69	15.0	-40 to +150	1.50	1.45	A-20	B	
	TCH10A10-11A	100	10.0	120	1.00	0.85	5.0	-40 to +150	3.00	1.45			
	TCH20A10-11A	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	1.45			
	TCH10A15-11A	150	10.0	130	1.00	0.88	5.0	-40 to +150	3.00	1.45			
	TCH20A15-11A	150	20.0	180	1.00	0.90	10.0	-40 to +150	1.50	1.45			
	TCH30A15-11A	150	30.0	250	2.00	0.91	15.0	-40 to +150	1.50	1.45			
	TCH20A20-11A	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	1.45			
TO-263 (D2pak)	TCH30A06	60	30.0	200	1.00	0.69	15.0	-40 to +150	1.50	1.40	A-21	B	
	TCH10A10	100	10.0	120	1.00	0.85	5.0	-40 to +150	3.00	1.40			
	TCH20A10	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	1.40			
	TCH10A15	150	10.0	130	1.00	0.88	5.0	-40 to +150	3.00	1.40			
	TCH20A15	150	20.0	180	1.00	0.90	10.0	-40 to +150	1.50	1.40			
	TCH30A15	150	30.0	250	2.00	0.91	15.0	-40 to +150	1.50	1.40			
	TCH20A20	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	1.40			
TO-263LP	UCHS10A065	65	10.0	120	0.10	0.63	5.0	-40 to +150	2.00	0.59	A-22	E	
	UCHS10A08	80	10.0	120	0.10	0.69	5.0	-40 to +150	2.00	0.59			
	UCHS20A08	80	20.0	220	0.15	0.71	10.0	-40 to +150	2.00	0.59			
	UCHS30A08	80	30.0	250	0.10	0.79	15.0	-40 to +150	1.50	0.59			
	UCHS10A12	120	10.0	120	0.10	0.84	5.0	-40 to +150	2.00	0.59			
	UCHS20A12	120	20.0	220	0.10	0.87	10.0	-40 to +150	2.00	0.59			
	UCHS30A12	120	30.0	250	0.10	0.90	15.0	-40 to +150	1.50	0.59			
TO-247	KCH60A03L	30	60.0	400	2.00	0.59	30.0	-40 to +150	1.00	5.55	A-24	B	
	KCH60A04	40	60.0	400	2.00	0.63	30.0	-40 to +150	1.00	5.55			
	KCH30A06	60	30.0	200	1.00	0.69	15.0	-40 to +150	1.50	5.55			
	KCH20A10	100	20.0	180	1.00	0.88	10.0	-40 to +150	1.50	5.55			
	KCH30A10	100	30.0	250	2.00	0.88	15.0	-40 to +150	1.30	5.55			
	KCH30A15	150	30.0	250	2.00	0.91	15.0	-40 to +150	1.30	5.55			
	KCH20A20	200	20.0	120	0.20	0.90	10.0	-40 to +150	1.50	5.55			
	KCH30A20	200	30.0	150	0.30	0.92	15.0	-40 to +150	1.30	5.55			

☑ : AEC-Q101準拠 AEC-Q101 qualified

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

### 3. 定格・特性表 Specifications

3-1-3. ショットキーバリアダイオードGシリーズ（超低リーク品）（複合）Schottky Barrier Diodes G-Series <Ultra-Low-IR type> (Multi chip)

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connection type
TO-220 Full-Mold	FCG10AU15	150	10.0	120	0.01	0.86	5.0	-55 to +175	3.00	1.75	A-17	E
	FCG20BU15	150	20.0	130	0.01	0.88	10.0	-55 to +175	3.00	1.75		
	FCG30AU15	150	30.0	210	0.01	0.87	15.0	-55 to +175	2.00	1.75		
	FCG30AU15V	150	30.0	210	0.01	0.87	15.0	-55 to +175	2.00	1.75	A-18	

\* : 詳細な測定条件は、別途仕様書のご確認をお願い致します。 \*: For more specific condition of measurement, please check data sheet.

3-1-4. アバランシェ保証型ショットキーバリアダイオード Avalanche Guaranteed Schottky Barrier Diode

Outline	Parts No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	PRRSM [W]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connec- tion type	
TO-263LP	UCHD30A09	✓	90	30.0	250	0.10	0.79	15.0	195	-40 to +150	1.50	0.59	A-22	E

✓ : AEC-Q101準拠 AEC-Q101 qualified

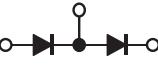
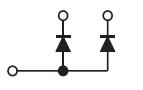
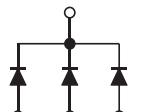
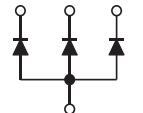
3-1-5. ツェナーダイオード Zener Diode

Outline	Parts No.	V <sub>Z</sub>			I <sub>Z</sub> [mA]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sub>R</sub> [mA]	V <sub>FM</sub> [V]	@IFM [A]	PRRSM [W]	T <sub>jw</sub> , T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Outline No.	Connec- tion type	
		min. [V]	typ. [V]	max. [V]													
TO-263LP	USDZ20A085	✓	77	85	93	10	20.0	210	0.03	0.95	10.0	2,500	-55 to +175	2.00	0.59	A-22	F
	USDZ20A12	✓	106	117	128	10	20.0	210	0.03	0.95	10.0	2,500	-55 to +175	2.00	0.59	A-22	F

✓ : AEC-Q101準拠 AEC-Q101 qualified

### 3-2. モジュール製品 Module Products

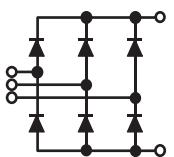
#### 3-2-1. 一般整流ダイオードモジュール (1/2) Rectifier Diode Modules (1/2)

Series	Circuit	Type No.	V <sub>RRM</sub> [V]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	T <sub>jw</sub> [°C]	Weight [g]	Outline No.	UL
PD		PD30KN8	800	30	600	-40 to +150	100	E-60	○
		PD60KN8	800	60	1200	-40 to +150	100	E-60	○
		PD100N8C	800	100	2000	-40 to +150	125	E-65	○
		PD100KN8	800	100	2000	-40 to +150	100	E-60	○
		PD150S8	800	150	3200	-40 to +150	200	E-58	○
		PD150KN8	800	150	3200	-40 to +150	150	E-61	○
		PD200S8	800	200	4000	-40 to +150	200	E-58	○
		PD200KN8	800	200	4000	-40 to +150	150	E-61	○
		PD230S8	800	230	4500	-40 to +150	200	E-58	○
		PD250KN8A	800	250	4000	-40 to +150	150	E-61	○
		PD30KN16	1600	30	600	-40 to +150	100	E-60	○
		PD60KN16	1600	60	1200	-40 to +150	100	E-60	○
		PD100N16	1600	100	2000	-40 to +150	125	E-65	○
		PD100KN16	1600	100	2000	-40 to +150	100	E-60	○
		PD100MYN16	1600	100	2000	-40 to +150	80	E-79	○
		PD150S16	1600	150	3200	-40 to +150	200	E-58	○
		PD150KN16	1600	150	3200	-40 to +150	150	E-61	○
		PD200S16	1600	200	4500	-40 to +150	200	E-58	○
		PD200KN16	1600	200	4500	-40 to +150	150	E-61	○
		PD200MYN16	1600	200	5000	-40 to +150	150	E-80	○
		PD230S16	1600	230	4500	-40 to +150	200	E-58	○
		PD250KN16A	1600	250	4000	-40 to +150	150	E-61	○
		PD260MYN16	1600	260	7600	-40 to +150	400	E-81	○
		PD380MYN16	1600	380	7600	-40 to +150	400	E-81	○
		PD700MYN16	1600	700	13000	-40 to +150	640	E-82	○
		PD100MYN18	1800	100	2000	-40 to +150	80	E-79	○
		PD200MYN18	1800	200	5000	-40 to +150	150	E-80	○
		PD260MYN18	1800	260	7600	-40 to +150	400	E-81	○
		PD380MYN18	1800	380	7600	-40 to +150	400	E-81	○
		PD700MYN18	1800	700	13000	-40 to +150	640	E-82	○
PR		PR250KN8N	800	250	4500	-40 to +150	150	E-73	
PE		PE30SN8	800	30	600	-40 to +150	180	E-64	
		PE100SN8	800	100	2000	-40 to +150	180	E-64	○
		PE30SN16	1600	30	600	-40 to +150	180	E-64	
PF		PF30SN8	800	30	600	-40 to +150	180	E-64	
		PF100SN8	800	100	2000	-40 to +150	180	E-64	○
		PF30SN16	1600	30	600	-40 to +150	180	E-64	

PD250KN8Nは非絶縁型です。PD250KN8N is non-isolated type.

### 3. 定格・特性表 Specifications

3-2-1. 一般整流ダイオードモジュール (2/2) Rectifier Diode Modules (2/2)

Series	Circuit	Type No.	$V_{RRM}$ [V]	$I_o$ [A]	$I_{FSM}$ [A]	$T_{jw}$ [°C]	Weight [g]	Outline No.	UL
PT		PT50SN8	800	50	450	-40 to +150	180	E-64	○
		PT50KN8	800	50	400	-40 to +150	140	E-62	○
		PT76SN8	800	75	600	-40 to +150	180	E-64	○
		PT75KN8	800	75	600	-40 to +150	140	E-62	○
		PT100SN8	800	100	1000	-40 to +150	180	E-64	○
		PT100KN8	800	100	1000	-40 to +150	140	E-62	○
		PT150N8	800	150	1200	-40 to +150	280	E-18	○
		PT150KN8	800	150	1200	-40 to +150	210	E-63	○
		PT200N8	800	200	2000	-40 to +150	280	E-18	○
		PT200KN8	800	200	2000	-40 to +150	210	E-63	○
		PT300S8	800	300	1800	-40 to +150	370	E-51	○
		PT50SN16	1600	50	450	-40 to +150	180	E-64	○
		PT50KN16	1600	50	400	-40 to +150	140	E-62	○
		PT76SN16	1600	75	600	-40 to +150	180	E-64	○
		PT75KN16	1600	75	600	-40 to +150	140	E-62	○
		PT80MYN16	1600	80	800	-40 to +150	130	E-77	○
		PT100SN16	1600	100	800	-40 to +150	180	E-64	○
		PT100KN16	1600	100	1200	-40 to +150	210	E-63	○
		PT150N16	1600	150	1200	-40 to +150	280	E-18	○
		PT150KN16	1600	150	1200	-40 to +150	210	E-63	○
		PT150MYN16	1600	150	1500	-40 to +150	250	E-78	○
		PT200N16	1600	200	2000	-40 to +150	280	E-18	○
		PT200KN16	1600	200	2000	-40 to +150	210	E-63	○
		PT200MYN16	1600	200	2000	-40 to +150	250	E-78	○
		PT300S16	1600	300	1850	-40 to +150	370	E-51	○
		PT80MYN18	1800	80	800	-40 to +150	130	E-77	○
		PT150MYN18	1800	150	1500	-40 to +150	250	E-78	○
		PT200MYN18	1800	200	2000	-40 to +150	250	E-78	○

### 3-2-2. ファストリカバリダイオードモジュール Fast Recovery Diode Modules

Series	Circuit	Type No.	$V_{RRM}$ [V]	$I_o$ [A]	$I_{FSM}$ [A]	$V_{FM}$ (max.) [V]	$t_{rr}$ (max.) [ns]	$T_{jw}$ [°C]	Weight [g]	Outline	UL
PC-F		PC100FYN6	600	100	2000	1.5	110	-40 to +150	80	E-79	○
		PC100FYN6C	600	100	2000	1.5	110	-40 to +150	80	E-79	○
		PC150FYN6	600	150	3000	1.5	140	-40 to +150	150	E-80	○
		PC150FYN6C	600	150	3000	1.5	140	-40 to +150	150	E-80	○
		PC151FYN6	600	150	3000	1.5	140	-40 to +150	80	E-79	○
		PC151FYN6C	600	150	3000	1.5	140	-40 to +150	80	E-79	○
		PC201FKN6	600	200	2000	1.4	110	-40 to +150	150	E-61	
		PC200FYN6	600	200	3400	1.5	150	-40 to +150	150	E-80	○
		PC200FYN6C	600	200	3400	1.5	150	-40 to +150	150	E-80	○
		PC300FN6	600	300	3000	1.5	170	-40 to +150	225	E-75	○
PD-F		PD100FYN6	600	100	2000	1.5	110	-40 to +150	80	E-79	○
		PD150FYN6	600	150	3000	1.5	140	-40 to +150	150	E-80	○
		PD151FYN6	600	150	3000	1.5	140	-40 to +150	80	E-79	○
		PD201FKN6	600	200	2000	1.4	110	-40 to +150	150	E-61	
		PD200FYN6	600	150	3400	1.5	150	-40 to +150	80	E-80	○
P2H-F		P2H30F2	200	30	300	1.08	50	-40 to +150	35	E-38	
		P2H60F2	200	60	600	1.08	50	-40 to +150	35	E-38	
		P2H80F2	200	80	800	1.05	50	-40 to +150	35	E-38	
		P2H30F4	400	30	300	1.33	60	-40 to +150	35	E-38	
		P2H60F4	400	60	600	1.33	60	-40 to +150	35	E-38	
		P2H80F4	400	80	800	1.31	60	-40 to +150	35	E-38	
		P2H50F12	1200	50	450	2.2	300	-40 to +150	35	E-38	○

### 3-2-3. ショットキーバリアダイオードモジュール Schottky Barrier Diode Modules

Series	Circuit	Type No.	$V_{RRM}$ [V]	$I_o$ [A]	$I_{FSM}$ [A]	$V_{FM}$	$T_{jw}$ [°C]	Weight [g]	Outline	UL
P2H-Q		P2H30QH10	100	30	150	1	-40 to +150	35	E-38	
		P2H60QH10	100	60	300	1	-40 to +150	35	E-38	
		P2H80QH10	100	80	400	0.97	-40 to +150	35	E-38	
		P2H30QH15	150	30	150	1.05	-40 to +150	35	E-38	
		P2H60QH15	150	60	300	1.05	-40 to +150	35	E-38	
		P2H80QH15	150	80	400	1.02	-40 to +150	35	E-38	
		P2H30QH20	200	30	300	1.09	-40 to +150	35	E-38	
		P2H60QH20	200	60	600	1.09	-40 to +150	35	E-38	
		P2H80QH20	200	80	800	1.05	-40 to +150	35	E-38	

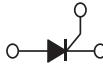
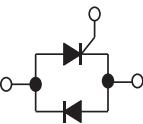
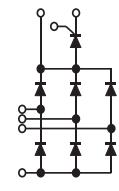
### 3-2-4. アバランシェ保証型ショットキーバリアダイオードモジュール Avalanche Guaranteed Schottky Barrier Diode Modules

Series	Circuit	Type No.	$V_{RRM}$ [V]	$I_o$ [A]	$P_{RRSM}$ [W]	$V_{FM}$ [V]	$T_{jw}$ [°C]	Weight [g]	Outline	UL
MR		MR80QZ09N	90	80	1054	0.98	-40 to +150	25	E-70	-
		MR80QZ12N	120	80	1054	0.98	-40 to +150	25	E-70	-

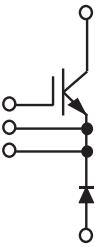
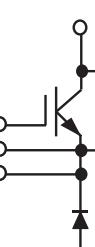
MR型は非絶縁型です。MR is non-isolated type.

### 3. 定格・特性表 Specifications

#### 3-2-5. サイリスタモジュール Thyristor Modules

Series	Circuit	Type No.	$V_{DRM}$ $V_{RRM}$ [V]	$I_o$ [A]	$I_{TSM}$ [A]	$I_{GT}$ [mA]	$V_{GT}$ [V]	$T_{JW}$ [°C]	Weight [g]	Outline	UL
PHT		PHT308C	800	30	500	100	2.5	-40 to +125	35	E-38	
		PHT608C	800	60	1000	100	2.5	-40 to +125	35	E-38	
		PHT608AC	800	60	1000	100	2.5	-40 to +125	35	E-38	○
		PHT6016AC	1600	60	1000	100	2.5	-40 to +125	35	E-38	○
		PHT250N8	800	250	4000	150	3	-40 to +125	250	E-42	○
		PHT250N16	1600	250	4000	150	3	-40 to +125	250	E-42	○
PAH		PAH30N8CM	800	30	600	100	2.5	-40 to +125	150	E-66	○
		PAH60N8CM	800	60	1200	100	2.5	-40 to +125	150	E-66	○
		PAH60LN8	800	60	1200	100	2.5	-40 to +150	70	E-71	○
		PAH100N8CM	800	100	2000	100	2.5	-40 to +125	150	E-66	○
		PAH100LN8	800	100	2000	100	2.5	-40 to +150	70	E-71	○
		PAH200N8	800	200	4000	150	3	-40 to +150	200	E-72	○
		PAH250N8	800	250	5000	150	3	-40 to +150	200	E-72	○
		PAH300N8	800	300	5000	150	3	-40 to +150	200	E-72	○
		PAH30N16CM	1600	30	600	100	2.5	-40 to +125	150	E-66	○
		PAH60N16CM	1600	60	1200	100	2.5	-40 to +125	150	E-66	○
		PAH60LN16	1600	60	1200	100	2.5	-40 to +150	70	E-71	○
		PAH100N16	1600	100	2000	100	2.5	-40 to +150	200	E-72	○
PGH		PGH50N8	800	50	1200	100	2.5	-40 to +150	225	E-68	○
		PGH75N8	800	75	1200	100	2.5	-40 to +150	225	E-68	○
		PGH100N8	800	100	2000	100	2.5	-40 to +150	225	E-68	○
		PGH101N8	800	100	2000	100	2.5	-40 to +150	225	E-68	○
		PGH150N8	800	150	3200	150	3	-40 to +150	450	E-69	○
		PGH200N8	800	200	4000	150	3	-40 to +150	450	E-69	○
		PGH50N16	1600	50	1200	100	2.5	-40 to +150	225	E-68	○
		PGH75N16	1600	75	1200	100	2.5	-40 to +150	225	E-68	○
		PGH100N16	1600	100	2000	100	2.5	-40 to +150	225	E-68	○
		PGH150N16	1600	150	3200	150	3	-40 to +150	450	E-69	○
		PGH200N16	1600	200	4000	150	3	-40 to +150	450	E-69	○

3-2-6. IGBT モジュール (1/2) IGBT Modules (1/2) ※Not Recommended for New Design

Series	Circuit	Type No.	$V_{CES}$ [V]	$I_C$ [A]	$V_{CE}$ (sat)(typ) [V]	$t_{on(typ)}$ [μs]	$t_{off(typ)}$ [μs]	Diode			IGBT $R_{thj-c(Max.)}$ [°C/W]	FRD $R_{thj-c(Max.)}$ [°C/W]	Weight [g]	Outline	UL
								$I_F$ [A]	$V_F(typ)$ [V]	$t_{rr(typ)}$ [μs]					
PHMB		PHMB50W12CL	1200	50	1.50	0.170	0.680	-	-	-	0.540	-	35	E-38	O
PDMB		PDMB50W6	650	50	1.45	0.212	0.419	50	1.70	0.140	0.690	1.660	150	E-74	O
		PDMB75W6	650	75	1.45	0.201	0.399	75	1.70	0.140	0.490	1.300	150	E-74	O
		PDMB100W6	650	100	1.45	0.189	0.380	100	1.70	0.140	0.390	0.960	150	E-74	O
		PDMB150W6	650	150	1.45	0.190	0.370	150	1.70	0.140	0.280	0.670	150	E-74	O
		PDMB200W6	650	200	1.45	0.176	0.358	200	1.70	0.145	0.210	0.480	150	E-74	O
		PDMB300W6	650	300	1.45	0.310	0.495	300	1.70	0.175	0.130	0.330	225	E-75	O
		PDMB400W6	650	400	1.45	0.315	0.580	400	1.70	0.185	0.110	0.240	225	E-75	O
		PDMB50W12	1200	50	1.50	0.170	0.680	50	2.00	0.130	0.540	0.970	150	E-74	O
		PDMB75W12	1200	75	1.50	0.170	0.680	75	2.00	0.150	0.430	0.800	150	E-74	O
		PDMB100W12	1200	100	1.50	0.170	0.690	100	2.00	0.170	0.310	0.720	150	E-74	O
		PDMB150W12	1200	150	1.50	0.170	0.700	150	2.00	0.190	0.190	0.300	225	E-75	O
		PDMB200W12	1200	200	1.50	0.170	0.700	200	2.00	0.200	0.130	0.210	225	E-75	O
		PDMB300W12	1200	300	1.50	0.310	1.090	300	2.00	0.250	0.095	0.150	450	E-56	O
		PDMB400W12	1200	400	1.50	0.310	1.090	400	2.00	0.250	0.065	0.105	450	E-56	O
		PDMB600W12	1200	600	1.50	0.310	1.100	600	2.00	0.320	0.048	0.075	1100	E-50	O
PCHMB		PCHMB50W6	650	50	1.45	0.212	0.419	50	1.70	0.140	0.690	1.660	150	E-74	O
		PCHMB75W6	650	75	1.45	0.201	0.399	75	1.70	0.140	0.490	1.300	150	E-74	O
		PCHMB100W6	650	100	1.45	0.189	0.380	100	1.70	0.140	0.390	0.960	150	E-74	O
		PCHMB150W6	650	150	1.45	0.190	0.370	150	1.70	0.140	0.280	0.670	150	E-74	O
		PCHMB200W6	650	200	1.45	0.176	0.358	200	1.70	0.145	0.210	0.480	150	E-74	O
		PCHMB300W6	650	300	1.45	0.310	0.495	300	1.70	0.175	0.130	0.330	225	E-75	O
		PCHMB400W6	650	400	1.45	0.315	0.580	400	1.70	0.185	0.110	0.240	225	E-75	O
		PCHMB50W12	1200	50	1.50	0.170	0.680	50	2.00	0.130	0.540	0.970	150	E-74	O
		PCHMB75W12	1200	75	1.50	0.170	0.680	75	2.00	0.150	0.430	0.800	150	E-74	O
		PCHMB100W12	1200	100	1.50	0.170	0.690	100	2.00	0.170	0.310	0.720	150	E-74	O
		PCHMB150W12	1200	150	1.50	0.170	0.700	150	2.00	0.190	0.190	0.300	225	E-75	O
		PCHMB200W12	1200	200	1.50	0.170	0.700	200	2.00	0.200	0.130	0.210	225	E-75	O
		PCHMB300W12	1200	300	1.50	0.310	1.090	300	2.00	0.250	0.095	0.150	450	E-56	O
		PCHMB400W12	1200	400	1.50	0.310	1.090	400	2.00	0.250	0.065	0.105	450	E-56	O
PCFMB		PCFMB50W6	650	50	1.45	0.212	0.419	50	1.70	0.140	0.690	1.660	150	E-74	O
		PCFMB75W6	650	75	1.45	0.201	0.399	75	1.70	0.140	0.490	1.300	150	E-74	O
		PCFMB100W6	650	100	1.45	0.189	0.380	100	1.70	0.140	0.390	0.960	150	E-74	O
		PCFMB150W6	650	150	1.45	0.190	0.370	150	1.70	0.140	0.280	0.670	150	E-74	O
		PCFMB200W6	650	200	1.45	0.176	0.358	200	1.70	0.145	0.210	0.480	150	E-74	O
		PCFMB300W6	650	300	1.45	0.310	0.495	300	1.70	0.175	0.130	0.330	225	E-75	O
		PCFMB400W6	650	400	1.45	0.315	0.580	400	1.70	0.185	0.110	0.240	225	E-75	O
		PCFMB50W12	1200	50	1.50	0.170	0.680	50	2.00	0.130	0.540	0.970	150	E-74	O
		PCFMB75W12	1200	75	1.50	0.170	0.680	75	2.00	0.150	0.430	0.800	150	E-74	O
		PCFMB100W12	1200	100	1.50	0.170	0.690	100	2.00	0.170	0.310	0.720	150	E-74	O
		PCFMB150W12	1200	150	1.50	0.170	0.700	150	2.00	0.190	0.190	0.300	225	E-75	O
		PCFMB200W12	1200	200	1.50	0.170	0.700	200	2.00	0.200	0.130	0.210	225	E-75	O
		PCFMB300W12	1200	300	1.50	0.310	1.090	300	2.00	0.250	0.095	0.150	450	E-56	O
		PCFMB400W12	1200	400	1.50	0.310	1.090	400	2.00	0.250	0.065	0.105	450	E-56	O

### 3. 定格・特性表 Specifications

3-2-6. IGBT モジュール (2/2) IGBT Modules (2/2) ※Not Recommended for New Design

Series	Circuit	Type No.	$V_{CES}$ [V]	$I_C$ [A]	$V_{CE}$ (sat)(typ) [V]	$t_{on(typ)}$ [us]	$t_{off(typ)}$ [us]	Diode			IGBT $R_{thj-c}(\text{Max.})$ [°C/W]	FRD $R_{thj-c}(\text{Max.})$ [°C/W]	Weight [g]	Outline	UL
								$I_F$ [A]	$V_F(\text{typ})$ [V]	$t_{rr(\text{typ})}$ [us]					
PRHMB		PRHMB50W6	650	50	1.45	0.212	0.419	50	1.70	0.140	0.690	1.660	150	E-74	O
		PRHMB75W6	650	75	1.45	0.201	0.399	75	1.70	0.140	0.490	1.300	150	E-74	O
		PRHMB100W6	650	100	1.45	0.189	0.380	100	1.70	0.140	0.390	0.960	150	E-74	O
		PRHMB150W6	650	150	1.45	0.190	0.370	150	1.70	0.140	0.280	0.670	150	E-74	O
		PRHMB200W6	650	200	1.45	0.176	0.358	200	1.70	0.145	0.210	0.480	150	E-74	O
		PRHMB300W6	650	300	1.45	0.310	0.495	300	1.70	0.175	0.130	0.330	225	E-75	O
		PRHMB400W6	650	400	1.45	0.315	0.580	400	1.70	0.185	0.110	0.240	225	E-75	O
		PRHMB50W12	1200	50	1.50	0.170	0.680	50	2.00	0.130	0.540	0.970	150	E-74	O
		PRHMB75W12	1200	75	1.50	0.170	0.680	75	2.00	0.150	0.430	0.800	150	E-74	O
		PRHMB100W12	1200	100	1.50	0.170	0.690	100	2.00	0.170	0.310	0.720	150	E-74	O
		PRHMB150W12	1200	150	1.50	0.170	0.700	150	2.00	0.190	0.190	0.300	225	E-75	O
		PRHMB200W12	1200	200	1.50	0.170	0.700	200	2.00	0.200	0.130	0.210	225	E-75	O
		PRHMB300W12	1200	300	1.50	0.310	1.090	300	2.00	0.250	0.095	0.150	450	E-56	O
		PRHMB400W12	1200	400	1.50	0.310	1.090	400	2.00	0.250	0.065	0.105	450	E-56	O
PRFMB		PRFMB50W6	650	50	1.45	0.212	0.419	50	1.70	0.140	0.690	1.660	150	E-74	O
		PRFMB75W6	650	75	1.45	0.201	0.399	75	1.70	0.140	0.490	1.300	150	E-74	O
		PRFMB100W6	650	100	1.45	0.189	0.380	100	1.70	0.140	0.390	0.960	150	E-74	O
		PRFMB150W6	650	150	1.45	0.190	0.370	150	1.70	0.140	0.280	0.670	150	E-74	O
		PRFMB200W6	650	200	1.45	0.176	0.358	200	1.70	0.145	0.210	0.480	150	E-74	O
		PRFMB300W6	650	300	1.45	0.310	0.495	300	1.70	0.175	0.130	0.330	225	E-75	O
		PRFMB400W6	650	400	1.45	0.315	0.580	400	1.70	0.185	0.110	0.240	225	E-75	O
		PRFMB50W12	1200	50	1.50	0.170	0.680	50	2.00	0.130	0.540	0.970	150	E-74	O
		PRFMB75W12	1200	75	1.50	0.170	0.680	75	2.00	0.150	0.430	0.800	150	E-74	O
		PRFMB100W12	1200	100	1.50	0.170	0.690	100	2.00	0.170	0.310	0.720	150	E-74	O
		PRFMB150W12	1200	150	1.50	0.170	0.700	150	2.00	0.190	0.190	0.300	225	E-75	O
		PRFMB200W12	1200	200	1.50	0.170	0.700	200	2.00	0.200	0.130	0.210	225	E-75	O
		PRFMB300W12	1200	300	1.50	0.310	1.090	300	2.00	0.250	0.095	0.150	450	E-56	O
		PRFMB400W12	1200	400	1.50	0.310	1.090	400	2.00	0.250	0.065	0.105	450	E-56	O

3-2-7. ソリッドステートリレー Solid State Relays (SSR)  
 AC リレー / 非ゼロ電圧スイッチング AC Relays/Non Zero-Cross Switching Type  
 シングルライン型・L シリーズ SIP Type • L-Series

Type No.	V <sub>AC</sub> V <sub>RMS</sub>	V <sub>DRM</sub> V <sub>PEAK</sub>	V <sub>opr</sub> V <sub>RMS</sub>	I <sub>L</sub> A <sub>RMS</sub>	I <sub>SM</sub> A <sub>PEAK</sub>	I <sub>OM</sub> mA <sub>RMS</sub>	V <sub>ISO</sub> V <sub>RMS</sub>	V <sub>IN2</sub> V <sub>DC</sub>	R <sub>IN</sub> [Ω]	Topr [°C]	Tstg [°C]	Weight [g]	Outline No.	Safety Standard		
														UL	CSA	TÜV
D2N201LD	240	600	60 to 280	1	10	20	1500 ※1	3 to 6	180	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N201LE	240	600	60 to 280	1	10	20	1500 ※1	7 to 14	750	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N201LF	240	600	60 to 280	1	10	20	1500 ※1	10 to 18	1,200	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N201LG	240	600	60 to 280	1	10	20	1500 ※1	18 to 30	2,150	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N202LD	240	600	60 to 280	2	20	20	1500 ※1	3 to 6	180	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N202LE	240	600	60 to 280	2	20	20	1500 ※1	7 to 14	750	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N202LF	240	600	60 to 280	2	20	20	1500 ※1	10 to 18	1,200	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N202LG	240	600	60 to 280	2	20	20	1500 ※1	18 to 30	2,150	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N203LD	240	600	60 to 280	3	30	20	1500 ※1	3 to 6	180	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N203LE	240	600	60 to 280	3	30	20	1500 ※1	7 to 14	750	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N203LF	240	600	60 to 280	3	30	20	1500 ※1	10 to 18	1,200	-20 to +80	-25 to +85	10	C-2	○	○	○
D2N203LG	240	600	60 to 280	3	30	20	1500 ※1	18 to 30	2,150	-20 to +80	-25 to +85	10	C-2	○	○	○

注 1. ※ 1 : 定格基準電圧 240V の製品には絶縁耐圧 4,000V の強化絶縁型があります。その場合には型名末尾に数字 18 が付記されます。

例 : D2N201LD 型の強化絶縁型型名→ D2N201LD18

4,000 volts reinforced insulation types are available for all 240 volts series, add suffix code "18" to each standard type number.  
 (example "D2N201LD18")

DIN レール型・P シリーズ DIN Rail Mounting Type • P-Series

Type No.	V <sub>AC</sub> V <sub>RMS</sub>	V <sub>DRM</sub> V <sub>PEAK</sub>	V <sub>opr</sub> V <sub>RMS</sub>	I <sub>L</sub> A <sub>RMS</sub>	I <sub>SM</sub> A <sub>PEAK</sub>	I <sub>OM</sub> mA <sub>RMS</sub>	V <sub>ISO</sub> V <sub>RMS</sub>	V <sub>IN2</sub> V <sub>DC</sub>	Topr [°C]	Tstg [°C]	Weight [g]	Outline No.	Safety Standard		
													UL	CSA	TÜV
PHA15DW2RP	240	600	60 to 240	15	150	100	2,500	4.5 to 30	-30 to +80	-35 to +100	220	C-5	○	○	○
PHA25DW2RP	240	600	60 to 240	25	250	100	2,500	4.5 to 30	-30 to +80	-35 to +100	220	C-5	○	○	○
PHA35DW2RP	240	600	60 to 240	35	350	500	2,500	4.5 to 30	-30 to +80	-35 to +100	220	C-6	○	○	○
PHA45DW2RP	240	600	60 to 240	45	450	500	2,500	4.5 to 30	-30 to +80	-35 to +100	220	C-6	○	○	○

### 3. 定格・特性表 Specifications

#### 3-3. ハイパワー製品 Hi Power Products

##### 3-3-1. 一般整流ダイオード Rectifier Diodes

###### 中・大電力用（スタッド型・MA シリーズ） Power Rectifier Diodes (Stud Type · MA-Series)

Type No.	V <sub>RRM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>F(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>RM</sub> [mA]	V <sub>FM</sub> [V]	T <sub>JW</sub> [°C]	T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Torque [N · m]	Outline No.
15MA300	3000	3300	39	25	450	1000	10	1.85 (I <sub>FM</sub> =80A)	-40 to +150	-40 to +175	0.6	19	2.9 2.4	B-1
15MA400	4000	4400	39	25	450	1000	10		-40 to +150	-40 to +175	0.6	19		

□ : 推奨値 Recommended value

###### 大電力用（平型・PJA シリーズ） Power Rectifier Diodes (Flat Package Type · PJA-Series)

Type No.	V <sub>RRM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>F(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>RM</sub> [mA]	V <sub>FM</sub> [V]	T <sub>JW</sub> [°C]	T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Mounting Force [kN]	Outline No.
253PJA60	600	800	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
253PJA80	800	1,000	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
253PJA100	1,000	1,200	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
253PJA120	1,200	1,400	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
253PJA140	1,400	1,600	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
253PJA160	1,600	1,800	390	250	2,700	36,400	20		-60 to +150	-60 to +175	0.18	45		
303PJA180	1,800	2,000	470	300	5,000	125,000	30	1.93 (I <sub>FM</sub> =800A)	-40 to +150	-40 to +150	0.1	70		
303PJA200	2,000	2,200	470	300	5,000	125,000	30		-40 to +150	-40 to +150	0.1	70		
303PJA250	2,500	2,750	470	300	5,000	125,000	30		-40 to +150	-40 to +150	0.1	70		B-14
403PJA60	600	800	630	400	4,000	80,000	20		-60 to +150	-60 to +175	0.1	70		
403PJA80	800	1,000	630	400	4,000	80,000	20	1.87 (I <sub>FM</sub> =1,260A)	-60 to +150	-60 to +175	0.1	70		
403PJA120	1,200	1,400	630	400	4,000	80,000	20		-60 to +150	-60 to +175	0.1	70		
403PJA140	1,400	1,600	630	400	4,000	80,000	20		-60 to +150	-60 to +175	0.1	70		
403PJA160	1,600	1,800	630	400	4,000	80,000	20		-60 to +150	-60 to +175	0.1	70		
503PJA180	1,800	2,000	785	500	7,500	281,000	40	1.84 (I <sub>FM</sub> =940A)	-40 to +150	-40 to +150	0.06	120		
503PJA200	2,000	2,200	785	500	7,500	281,000	40		-40 to +150	-40 to +150	0.06	120		
503PJA250	2,500	2,750	785	500	7,500	281,000	40		-40 to +150	-40 to +150	0.06	120		
603PJA250	2,500	2,750	940	600	10,000	500,000	30	1.85 (I <sub>FM</sub> =1,900A)	-40 to +150	-40 to +150	0.05	240		
603PJA400	4,000	4,400	940	600	10,000	500,000	30		-40 to +150	-40 to +150	0.05	240		
703PJA60	600	800	1,100	700	9,000	405,000	50		-60 to +150	-60 to +175	0.06	120		
703PJA80	800	1,000	1,100	700	9,000	405,000	50	1.67 (I <sub>FM</sub> =2,200A)	-60 to +150	-60 to +175	0.06	120		
703PJA100	1,000	1,200	1,100	700	9,000	405,000	50		-60 to +150	-60 to +175	0.06	120		
703PJA120	1,200	1,400	1,100	700	9,000	405,000	50		-60 to +150	-60 to +175	0.06	120		
703PJA140	1,400	1,600	1,100	700	9,000	405,000	50		-60 to +150	-60 to +175	0.06	120		
703PJA160	1,600	1,800	1,100	700	9,000	405,000	50		-60 to +150	-60 to +175	0.06	120		
801PJA250	2,500	2,750	1,250	800	16,000	1.28 × 10 <sup>6</sup>	60	1.56 (I <sub>FM</sub> =2,500A)	-40 to +150	-40 to +150	0.03	400		
801PJA400	4,000	4,400	1,250	800	16,000	1.28 × 10 <sup>6</sup>	60		-40 to +150	-40 to +150	0.03	400		
1003PJA250	2,500	2,750	1,570	1,000	20,000	2 × 10 <sup>6</sup>	50	1.43 (I <sub>FM</sub> =3,140A)	-40 to +150	-40 to +150	0.03	430		
1003PJA300	3,000	3,300	1,570	1,000	20,000	2 × 10 <sup>6</sup>	50		-40 to +150	-40 to +150	0.03	430		
1500PJA10	100	120	2,350	1,500	18,000	1.62 × 10 <sup>6</sup>	50	1.37 (I <sub>FM</sub> =4,700A)	-40 to +150	-40 to +150	0.03	85		
1500PJA20	200	240	2,350	1,500	18,000	1.62 × 10 <sup>6</sup>	50		-40 to +150	-40 to +150	0.03	85		
1500PJA40	400	480	2,350	1,500	18,000	1.62 × 10 <sup>6</sup>	50		-40 to +150	-40 to +150	0.03	85		
1603PJA250	2,500	2,750	2,500	1,600	32,000	5.1 × 10 <sup>6</sup>	50	1.60 (I <sub>FM</sub> =5,000A)	-40 to +150	-40 to +150	0.025	430		
1603PJA300	3,000	3,300	2,500	1,600	32,000	5.1 × 10 <sup>6</sup>	50		-40 to +150	-40 to +150	0.025	430		
3500PJA10	100	120	5,500	3,500	35,000	6.12 × 10 <sup>6</sup>	50	1.35 (I <sub>FM</sub> =11,000A)	-40 to +175	-40 to +175	0.025	180		
3500PJA20	200	240	5,500	3,500	35,000	6.12 × 10 <sup>6</sup>	50		-40 to +175	-40 to +175	0.025	180		
3500PJA40	400	480	5,500	3,500	35,000	6.12 × 10 <sup>6</sup>	50		-40 to +175	-40 to +175	0.025	180		

□ : 推奨値 Recommended value

### 3-3-2. ファストリカバリーダイオード スタッド型 Fast Recovery Diodes Stud Type

Type No.	V <sub>RRM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>F(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>FSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>RM</sub> [mA]	V <sub>FM</sub> [V]	T <sub>jw</sub> [°C]	T <sub>stg</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Q <sub>r</sub> [μC]	t <sub>rr</sub> [μs]	Weight [g]	Torque [N · m]	Outline No.
15MLA160	1600	1800	39	25	600	1800	10	1.85 (I <sub>FM</sub> =80A)	-40 to +125	-40 to +125	0.6	105	3.5	19	2.9 2.4	B-1
15MLA180	1800	2000	39	25	600	1800	10		-40 to +125	-40 to +125	0.6	105	3.5	19		
15MLA200	2000	2200	39	25	600	1800	10		-40 to +125	-40 to +125	0.6	105	3.5	19		
15MLS160	1600	1600	39	25	600	1800	10		-40 to +125	-40 to +125	0.6	105	3.5	19		
15MLS200	2000	2000	39	25	600	1800	10		-40 to +125	-40 to +125	0.6	105	3.5	19		
15MLS250	2500	2500	39	25	600	1800	10		-40 to +125	-40 to +125	0.6	105	3.5	19		

□ : 推奨値 Recommended value

### 3. 定格・特性表 Specifications

#### 3-3-3. サイリスタ Thyristors

平型・PA, PAB シリーズ Flat Package Type・PA, PAB-Series

Type No.	V <sub>RRM</sub> V <sub>DRM</sub> [V]	V <sub>DSM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>T(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>TSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>DM</sub> I <sub>RM</sub> [mA]	V <sub>TM</sub> [V]	dv/dt [V/μs]	di/dt [A/μs]	I <sub>GT</sub> [mA]	V <sub>GT</sub> [V]	T <sub>JW</sub> T <sub>STG</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Torque [N · m]	Outline No.
253PA100	1,000	1,150	1,150	390	250	4,000	80,000	45	2.25 (I <sub>TM</sub> =780A)	500	150	150	3	-40 to +125	0.1	80	12 6	B-28
253PA120	1,200	1,350	1,350	390	250	4,000	80,000	45		500	150	150	3	-40 to +125	0.1	80		
253PA140	1,400	1,550	1,550	390	250	4,000	80,000	45		500	150	150	3	-40 to +125	0.1	80		
253PA160	1,600	1,750	1,750	390	250	4,000	80,000	45		500	150	150	3	-40 to +125	0.1	80		
403PAB180	1,800	2,000	2,000	630	400	7,000	245,000	60	2.12 (I <sub>TM</sub> =1,260A)	200	200	200	3	-40 to +125	0.05	250	15 12	B-30
403PAB200	2,000	2,200	2,200	630	400	7,000	245,000	60		200	200	200	3	-40 to +125	0.05	250		
403PAB250	2,500	2,500	2,750	630	400	7,000	245,000	60		200	200	200	3	-40 to +125	0.05	250		
503PA60	600	800	800	785	500	10,000	500,000	60		500	150	150	3	-40 to +125	0.06	135	15 10	B-28
503PA80	800	1,000	1,000	785	500	10,000	500,000	60	1.96 (I <sub>TM</sub> =1,500A)	500	150	150	3	-40 to +125	0.06	135		
503PA100	1,000	1,200	1,200	785	500	10,000	500,000	60		500	150	150	3	-40 to +125	0.06	135		
503PA120	1,200	1,400	1,400	785	500	10,000	500,000	60		500	150	150	3	-40 to +125	0.06	135		
503PA140	1,400	1,600	1,600	785	500	10,000	500,000	60		500	150	150	3	-40 to +125	0.06	135		
503PA160	1,600	1,800	1,800	785	500	10,000	500,000	60	2.10 (I <sub>TM</sub> =1,500A)	500	150	150	3	-40 to +125	0.06	135	15 12	B-30
503PAB180	1,800	2,000	2,000	785	500	7,000	245,000	60		200	200	200	3	-40 to +125	0.05	250		
503PAB200	2,000	2,200	2,200	785	500	7,000	245,000	60		200	200	200	3	-40 to +125	0.05	250		
503PAB250	2,500	2,500	2,750	785	500	7,000	245,000	60		200	200	200	3	-40 to +125	0.05	250		
553PA60	600	800	800	860	550	10,000	500,000	60	1.88 (I <sub>TM</sub> =1,700A)	200	150	200	3	-40 to +125	0.06	135	15 12	B-28
553PA80	800	1,000	1,000	860	550	10,000	500,000	60		200	150	200	3	-40 to +125	0.06	135		
553PA100	1,000	1,200	1,200	860	550	10,000	500,000	60		200	150	200	3	-40 to +125	0.06	135		
553PA120	1,200	1,400	1,400	860	550	10,000	500,000	60		200	150	200	3	-40 to +125	0.06	135		
553PA140	1,400	1,600	1,600	860	550	10,000	500,000	60		200	150	200	3	-40 to +125	0.06	135		
553PA160	1,600	1,800	1,800	860	550	10,000	500,000	60	1.65 (I <sub>TM</sub> =2,500A)	200	150	200	3	-40 to +125	0.06	135	15 12	B-28
803PA20	200	300	300	1,250	800	12,000	720,000	60		200	200	200	3	-40 to +125	0.045	135		
803PA40	400	500	500	1,250	800	12,000	720,000	60		200	200	200	3	-40 to +125	0.045	135		
803PA60	600	700	700	1,250	800	12,000	720,000	60		200	200	200	3	-40 to +125	0.045	135		
803PA80	800	900	900	1,250	800	12,000	720,000	60	1.65 (I <sub>TM</sub> =2,500A)	200	200	200	3	-40 to +125	0.045	135	35 30	B-31
803PA100	1,000	1,200	1,200	1,250	800	12,000	720,000	60		200	200	200	3	-40 to +125	0.045	135		
803PA120	1,200	1,300	1,400	1,250	800	12,000	720,000	60		200	200	200	3	-40 to +125	0.045	135		
853PA160	1,600	1,800	1,800	1,330	850	15,000	$1,125 \times 10^6$	80	1.85 (I <sub>TM</sub> =2,700A)	200	200	200	3	-40 to +125	0.025	360	55 50	B-33
853PAB180	1,800	2,000	2,000	1,330	850	14,000	$9.8 \times 10^5$	120		200	200	200	3	-40 to +125	0.025	360		
853PAB250	2,500	2,500	2,750	1,330	850	14,000	$9.8 \times 10^5$	120		200	200	200	3	-40 to +125	0.025	360		
1003PA100	1,000	1,200	1,200	1,570	1,000	17,000	$1.44 \times 10^6$	80	1.7 (I <sub>TM</sub> =3,200A)	200	200	200	3	-40 to +125	0.025	360		
1003PA120	1,200	1,400	1,400	1,570	1,000	17,000	$1.44 \times 10^6$	80		200	200	200	3	-40 to +125	0.025	360		
1003PA140	1,400	1,600	1,600	1,570	1,000	17,000	$1.44 \times 10^6$	80		200	200	200	3	-40 to +125	0.025	360		
1003PA160	1,600	1,750	1,800	1,570	1,000	17,000	$1.44 \times 10^6$	80		200	200	200	3	-40 to +125	0.025	360		
1003PAB180	1,800	2,000	2,000	1,570	1,000	16,000	$1.28 \times 10^6$	120	1.7 (I <sub>TM</sub> =3,200A)	200	200	200	3	-40 to +125	0.025	460	55 50	B-33
1003PAB200	2,000	2,200	2,200	1,570	1,000	16,000	$1.28 \times 10^6$	120		200	200	200	3	-40 to +125	0.025	460		
1003PAB250	2,500	2,500	2,750	1,570	1,000	16,000	$1.28 \times 10^6$	120		200	200	200	3	-40 to +125	0.025	460		
1503PA40	400	500	500	2,350	1,500	25,000	$3.125 \times 10^6$	100	1.7 (I <sub>TM</sub> =4,700A)	200	200	200	3	-40 to +125	0.025	460		
1503PA60	600	700	700	2,350	1,500	25,000	$3.125 \times 10^6$	100		200	200	200	3	-40 to +125	0.025	460		
1503PA80	800	900	900	2,350	1,500	25,000	$3.125 \times 10^6$	100		200	200	200	3	-40 to +125	0.025	460		
1503PA100	1,000	1,200	1,200	2,350	1,500	25,000	$3.125 \times 10^6$	100		200	200	200	3	-40 to +125	0.025	460		
1503PA120	1,200	1,300	1,400	2,350	1,500	25,000	$3.125 \times 10^6$	100	1.7 (I <sub>TM</sub> =4,700A)	200	200	200	3	-40 to +125	0.025	460	55 50	B-33
1503PA160	1,600	1,750	1,800	2,350	1,500	25,000	$3.125 \times 10^6$	100		200	200	200	3	-40 to +125	0.025	460		
3003PA40	400	500	500	4,700	3,000	50,000	$1.25 \times 10^7$	150	1.45 (I <sub>TM</sub> =9,500A)	200	200	200	3	-40 to +125	0.01	740	55 50	B-33
3003PA80	800	900	900	4,700	3,000	50,000	$1.25 \times 10^7$	150		200	200	200	3	-40 to +125	0.01	740		
3003PA100	1,000	1,200	1,200	4,700	3,000	45,000	$1.01 \times 10^7$	150	1.75 (I <sub>TM</sub> =9,500A)	200	200	200	3	-40 to +125	0.01	740		
3003PA120	1,200	1,400	1,400	4,700	3,000	45,000	$1.01 \times 10^7$	150		200	200	200	3	-40 to +125	0.01	740		
3003PA160	1,600	1,750	1,800	4,700	3,000	45,000	$1.01 \times 10^7$	150	1.6 (I <sub>TM</sub> =13,000A)	200	200	200	3	-40 to +125	0.01	740	55 50	B-33
4003PA40	400	500	500	6,300	4,000	60,000	$1.8 \times 10^7$	150		200	200	200	3	-40 to +125	0.01	740		
4003PA60	600	700	700	6,300	4,000	60,000	$1.8 \times 10^7$	150		200	200	200	3	-40 to +125	0.01	740		
4003PA80	800	900	900	6,300	4,000	60,000	$1.8 \times 10^7$	150		200	200	200	3	-40 to +125	0.01	740		

: 推奨値 Recommended Value

### 3-3-4. 高速スイッチングサイリスタ Fast Turn-Off Thyristors

平型・PLF シリーズ Flat Package Type・PLF-Series [tq = 20μs]

Type No.	V <sub>RRM</sub> V <sub>DRM</sub> [V]	V <sub>DSM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>T(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>TSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>DM</sub> I <sub>RM</sub> [mA]	V <sub>TM</sub> [V]	dv/dt [V/μs]	di/dt [A/μs]	I <sub>GT</sub> [mA]	V <sub>GT</sub> [V]	t <sub>q</sub> [μs]	T <sub>JW</sub> T <sub>sig</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Mounting Force [kN]	Outline No.
1003PLF100	1,000	1,200	1,200	1,570	1,000	18,000	1.62 × 10 <sup>6</sup>	150	2.25 (I <sub>TM</sub> =3,200A)	500	200	200	3	20	-40 to +125	0.025	460	35 30	B-31
1003PLF120	1,200	1,300	1,400	1,570	1,000	18,000	1.62 × 10 <sup>6</sup>	150	500	200	200	3	20	-40 to +125	0.025	460			
2503PLF100	1,000	1,200	1,200	3,900	2,500	40,000	8 × 10 <sup>6</sup>	150	2.03 (I <sub>TM</sub> =8,000A)	200	200	200	3	20	-40 to +125	0.012	740	55 50	B-33

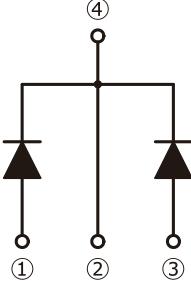
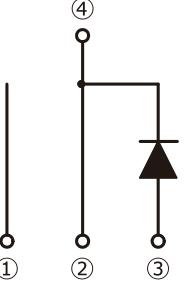
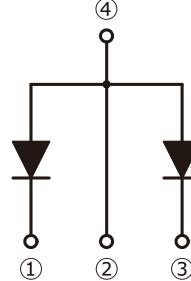
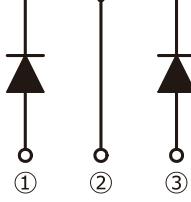
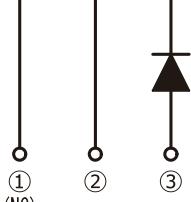
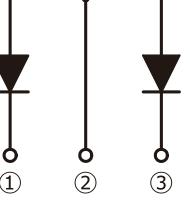
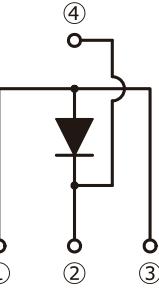
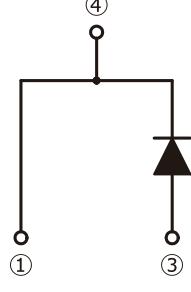
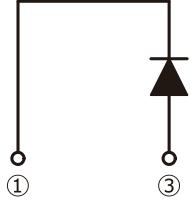
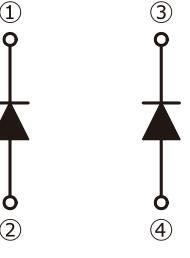
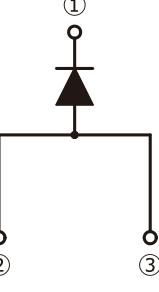
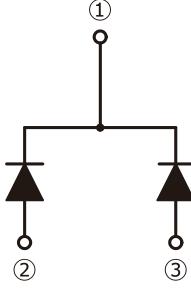
□ : 推奨値 Recommended value

平型・PLH シリーズ Flat Package Type・PLH-Series [tq = 30μs]

Type No.	V <sub>RRM</sub> V <sub>DRM</sub> [V]	V <sub>DSM</sub> [V]	V <sub>RSM</sub> [V]	I <sub>T(RMS)</sub> [A]	I <sub>o</sub> [A]	I <sub>TSM</sub> [A]	I <sup>2</sup> t [A <sup>2</sup> s]	I <sub>DM</sub> I <sub>RM</sub> [mA]	V <sub>TM</sub> [V]	dv/dt [V/μs]	di/dt [A/μs]	I <sub>GT</sub> [mA]	V <sub>GT</sub> [V]	t <sub>q</sub> [μs]	T <sub>JW</sub> T <sub>sig</sub> [°C]	R <sub>th(j-c)</sub> [°C/W]	Weight [g]	Mounting Force [kN]	Outline No.
1003PLH120	1,200	1,300	1,400	1,570	1,000	16,000	1.28 × 10 <sup>6</sup>	120	2.3 (I <sub>TM</sub> =3,200A)	200	200	400	3	30	-40 to +125	0.03	460	35 30	B-31
2503PLH100	1,000	1,200	1,200	3,900	2,500	40,000	8 × 10 <sup>6</sup>	150	2.07 (I <sub>TM</sub> =8,000A)	200	200	200	3	30	-40 to +125	0.012	740	55 50	B-33
2503PLH120	1,200	1,300	1,400	3,900	2,500	40,000	8 × 10 <sup>6</sup>	150	200	200	200	3	30	-40 to +125	0.012	740			

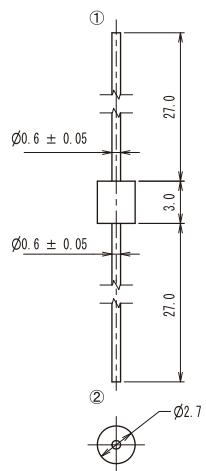
□ : 推奨値 Recommended value

## 4. 結線図 (ディスクリート製品) Connection Type of Discrete Products

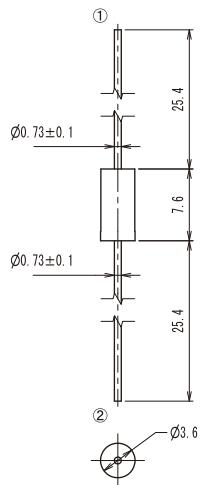
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Type-E	Type-F	Type-G	Type-H
			
Type-I	Type-J	Type-K	Type-L
			
Type-M			
			

## 5. 外形寸法図 Outline

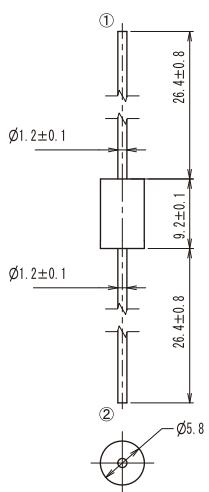
<A-1> 3Max × Ø2.7 (DO-41S)



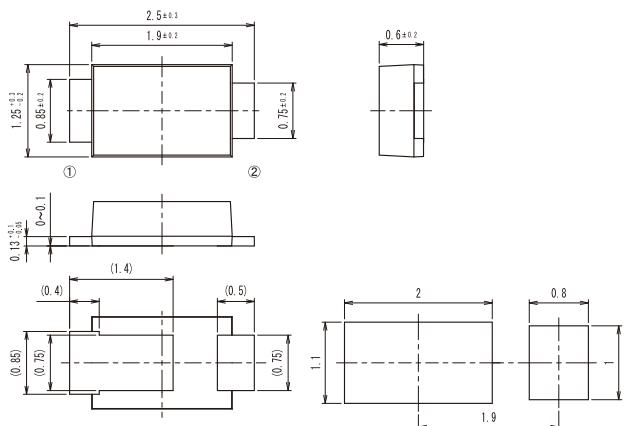
<A-2> DO-204AC (DO-15)



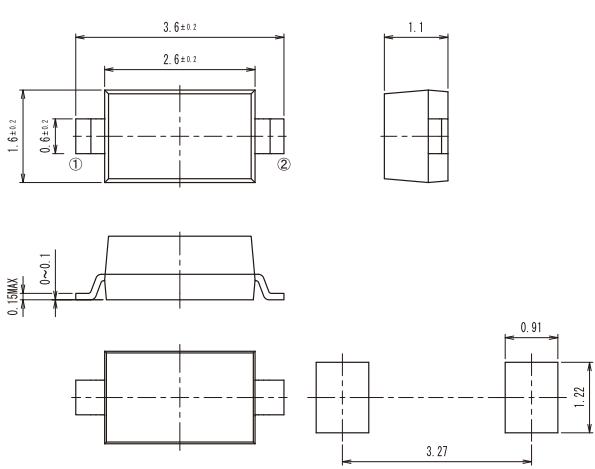
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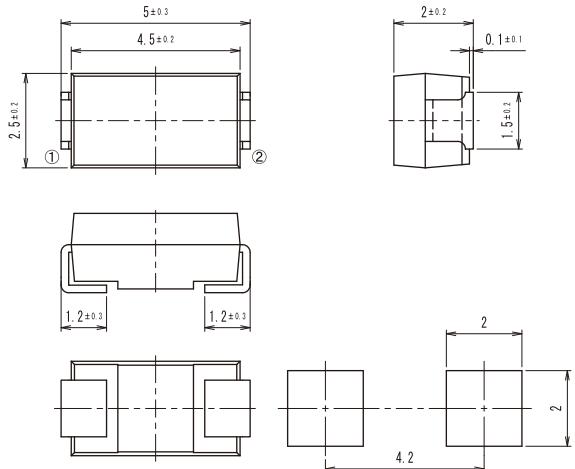
<A-4> SOD-323FL



<A-5> SOD-123

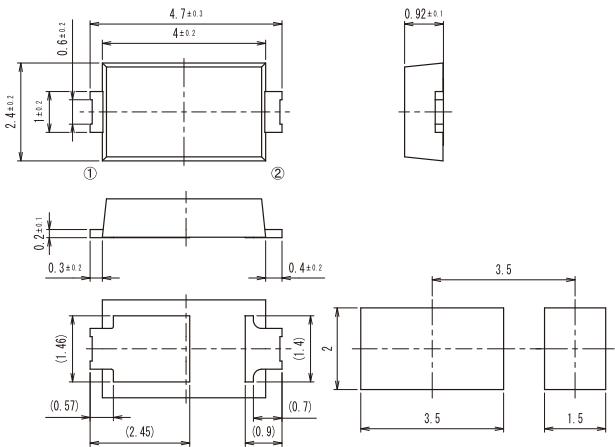


<A-6> DO-214AC (SMA)

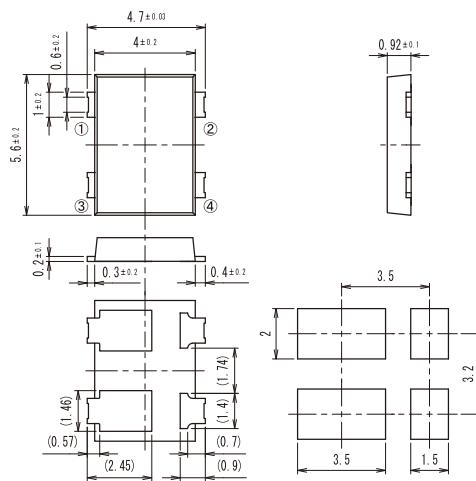


## 5. 外形寸法図 Outline

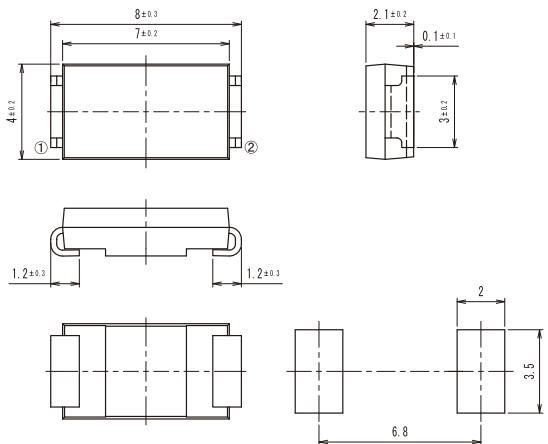
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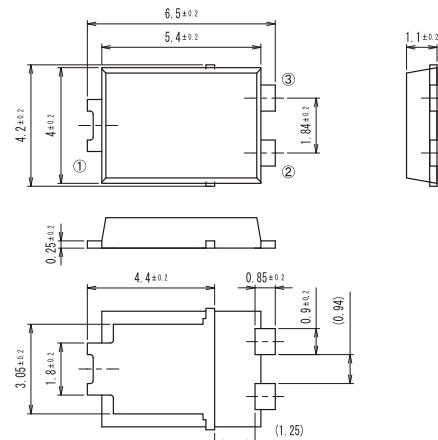
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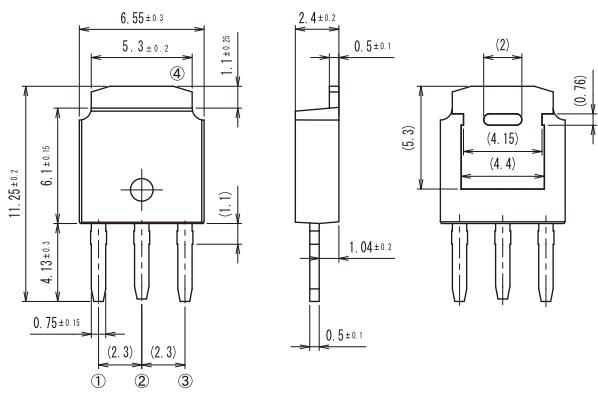
<A-9> nSMC



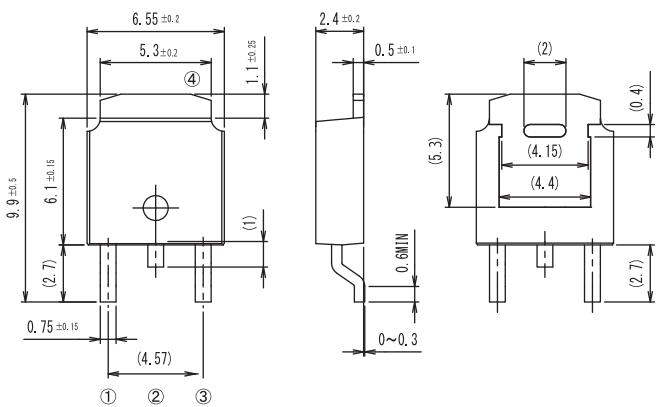
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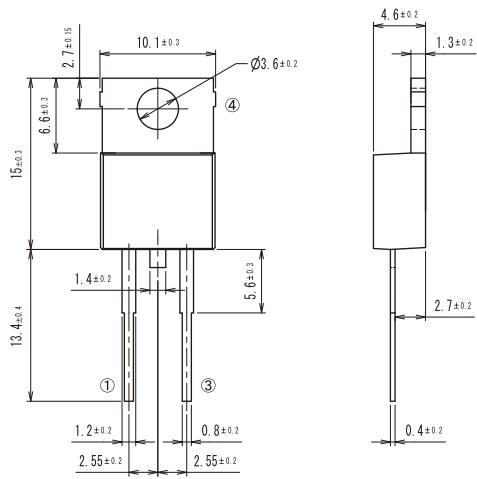
<A-11> TO-251



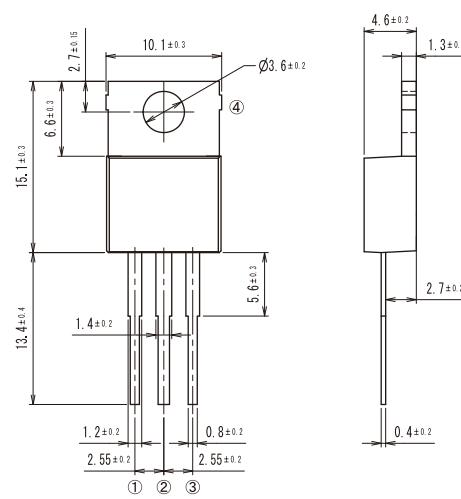
<A-12> TO-252 (Dpak)



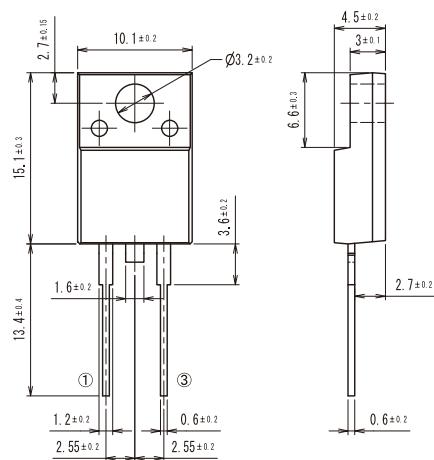
<A-13> TO-220 2pin



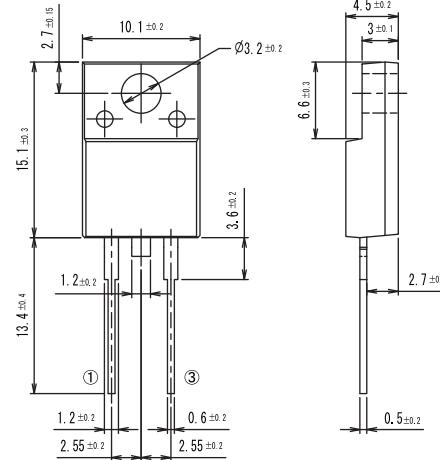
<A-14> TO-220



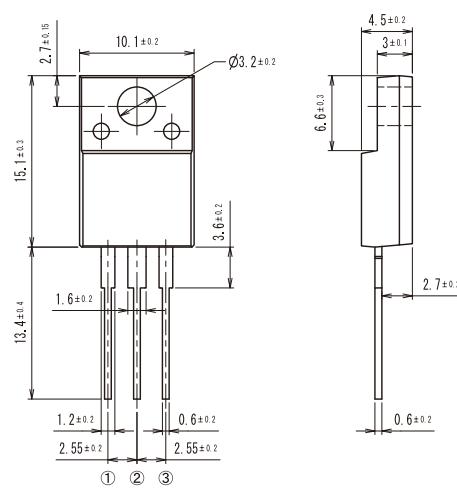
<A-15> TO-220 Full-Mold 2pin



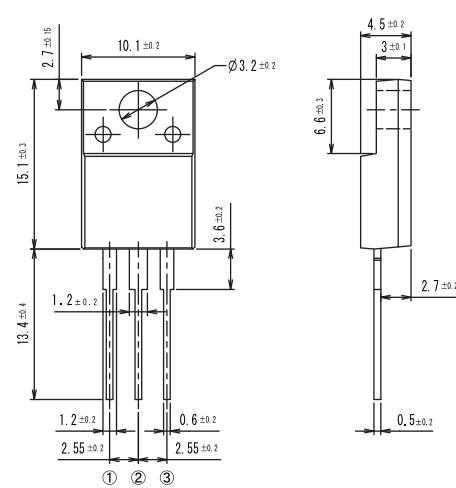
<A-16> TO-220 Full-Mold 2pin



<A-17> TO-220 Full-Mold

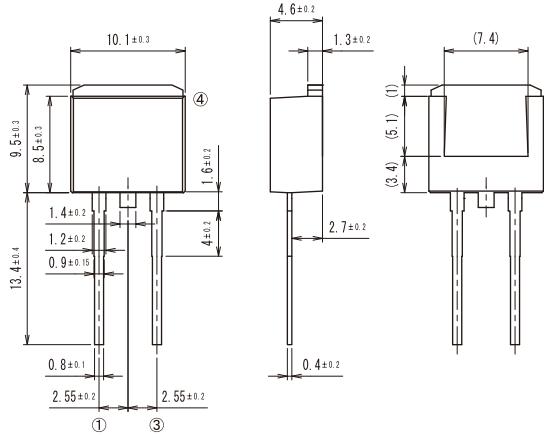


<A-18> TO-220 Full-Mold

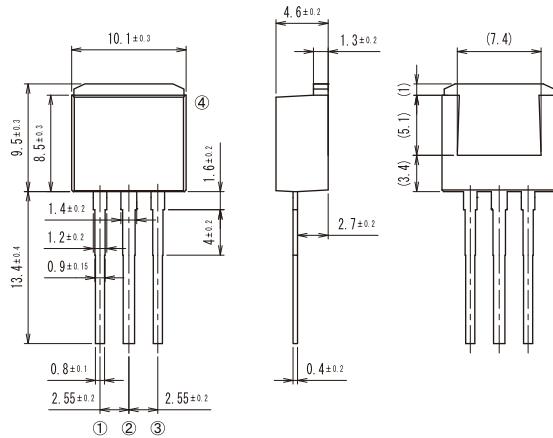


## 5. 外形寸法図 Outline

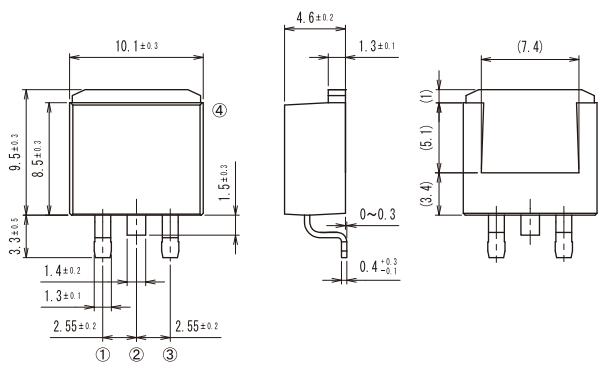
<A-19> TO-262 2pin



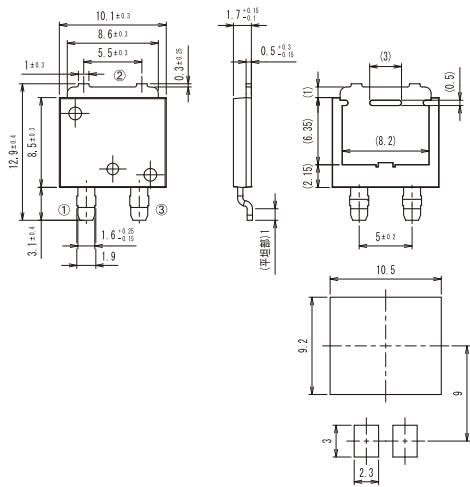
<A-20> TO-262



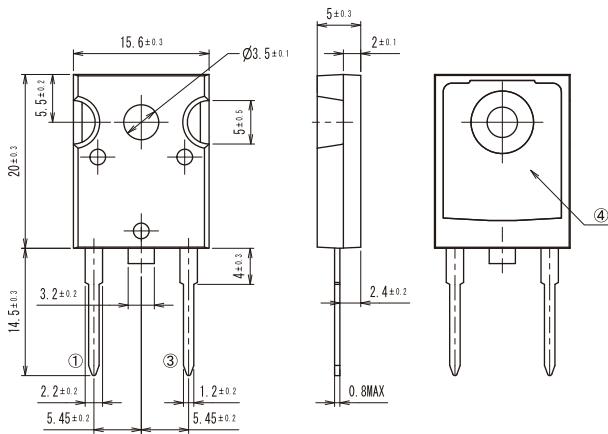
<A-21> TO-263 (D2pak)



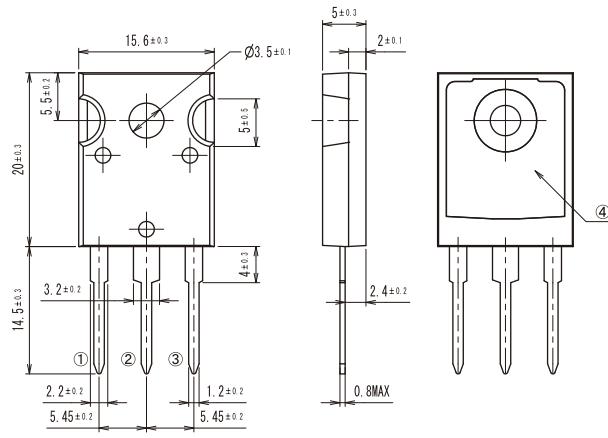
<A-22> TO-263LP



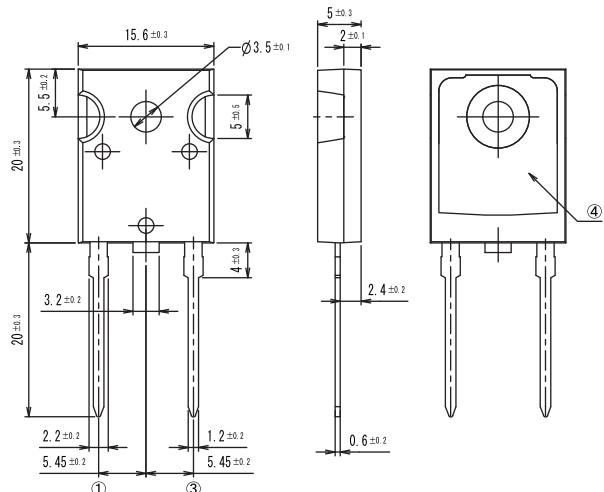
<A-23> TO-247 2pin



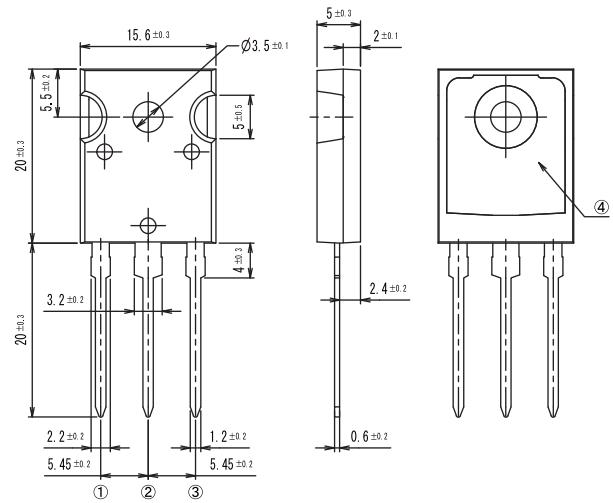
<A-24> TO-247



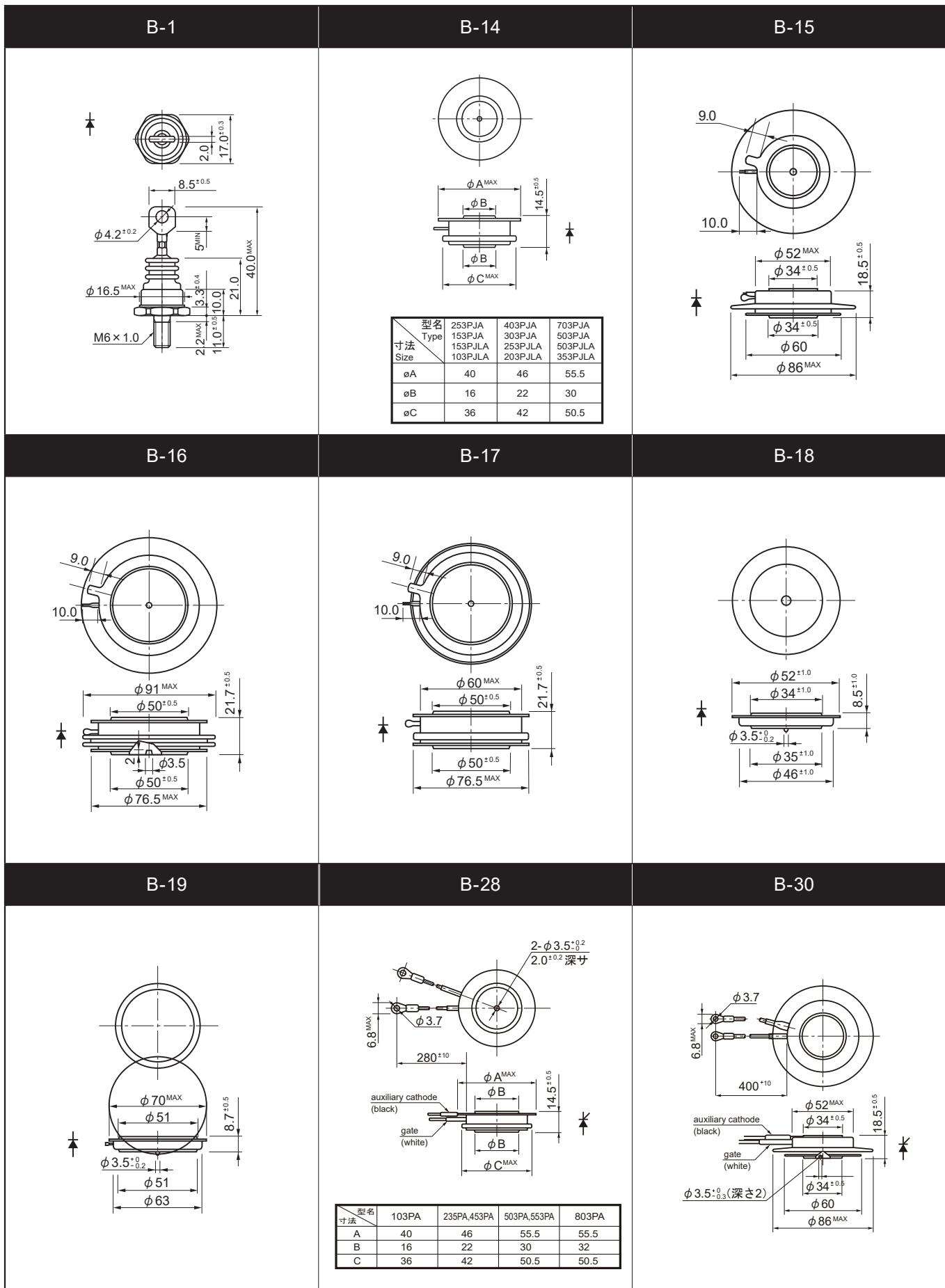
<A-25> TO-247 2pin (long lead)



<A-26> TO-247 (long lead)

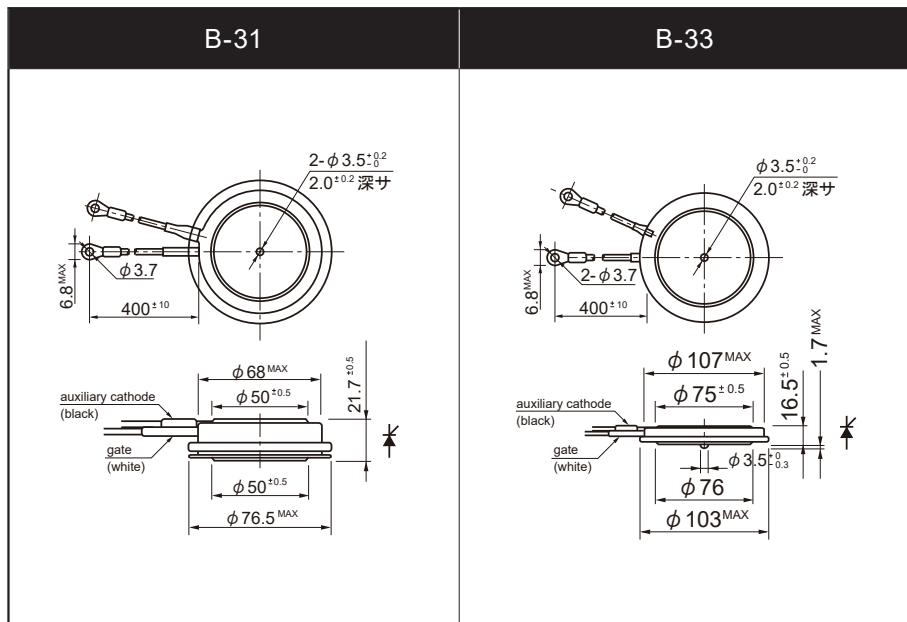


## 5. 外形寸法図 Outline



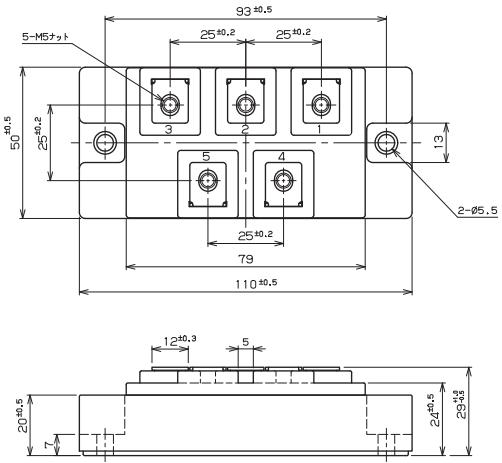
B-31

B-33

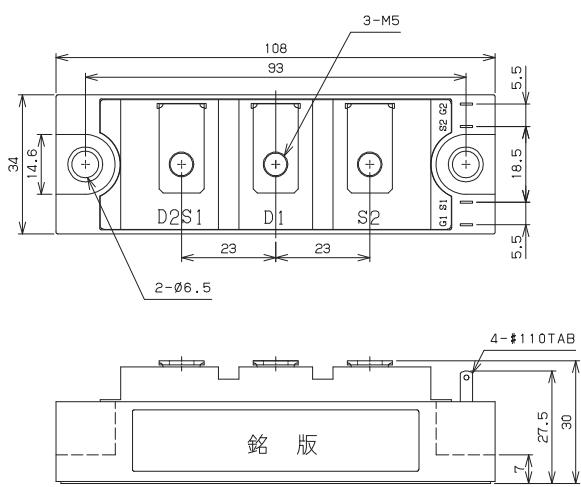


## 5. 外形寸法図 Outline

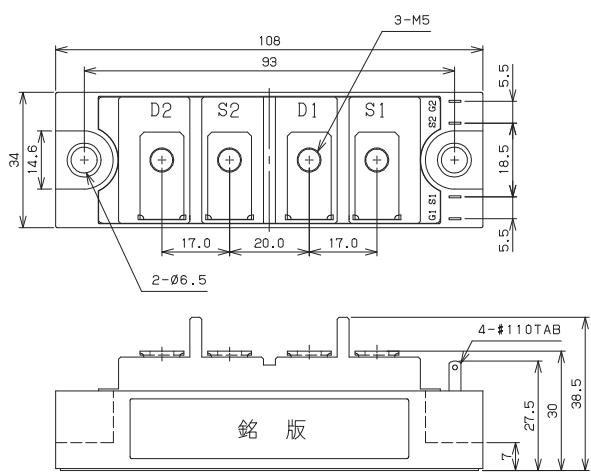
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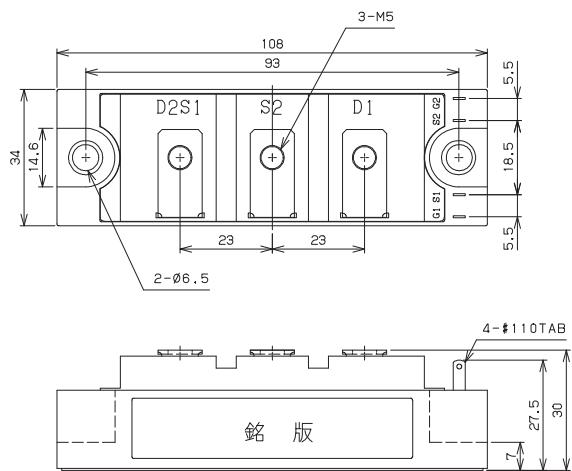
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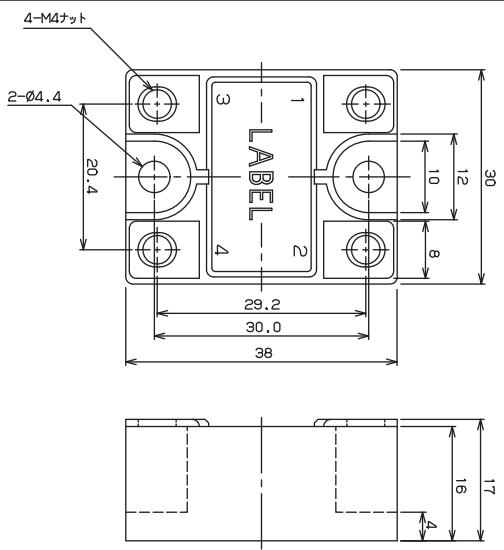
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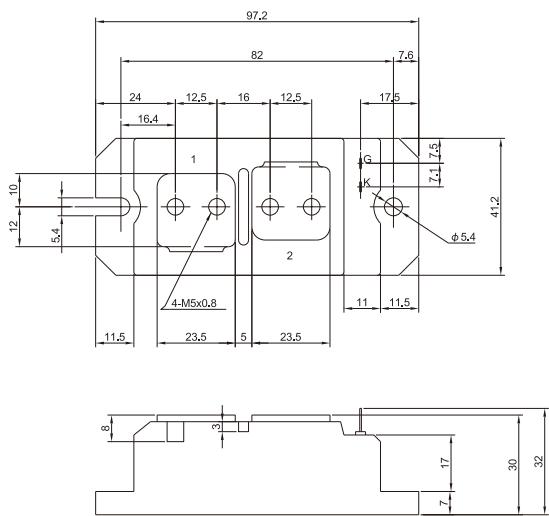
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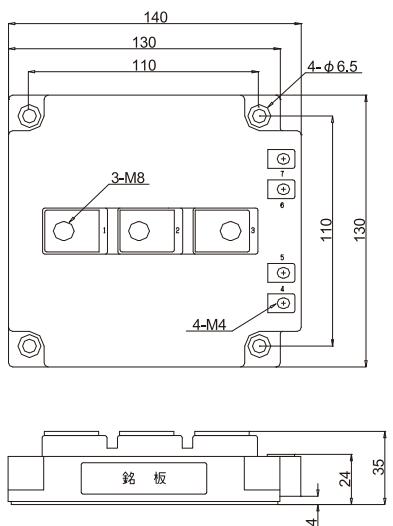
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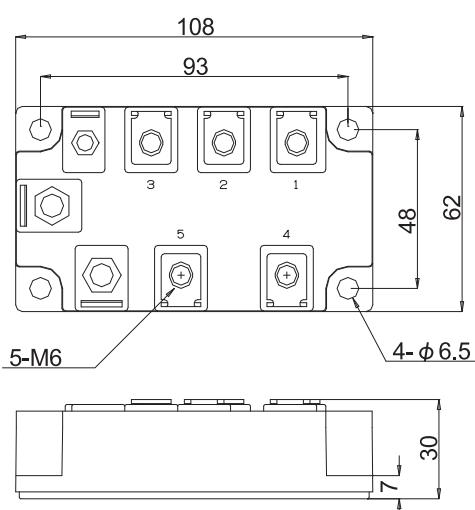
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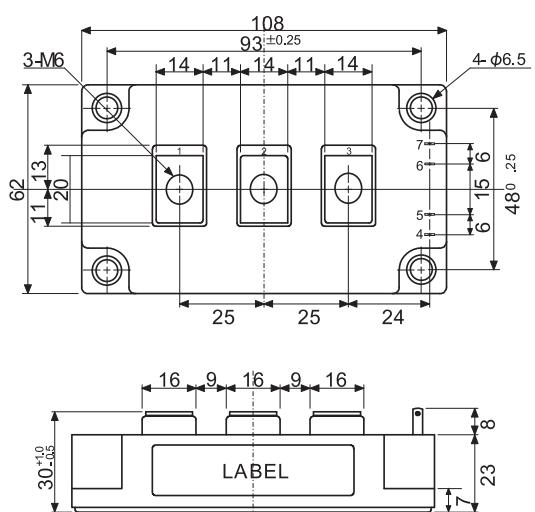
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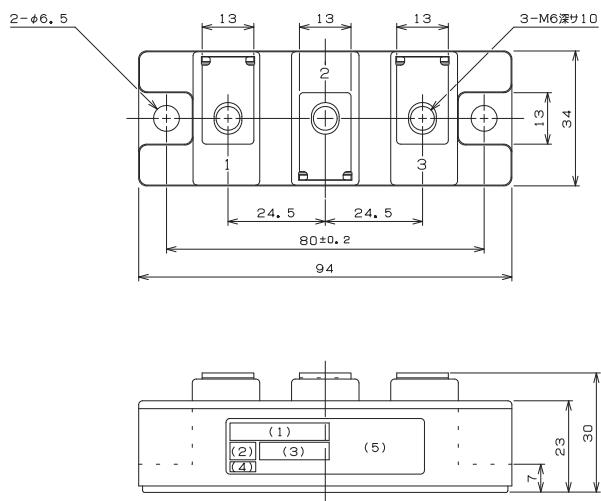
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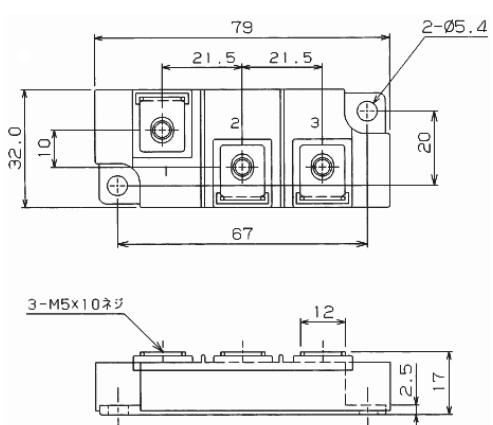
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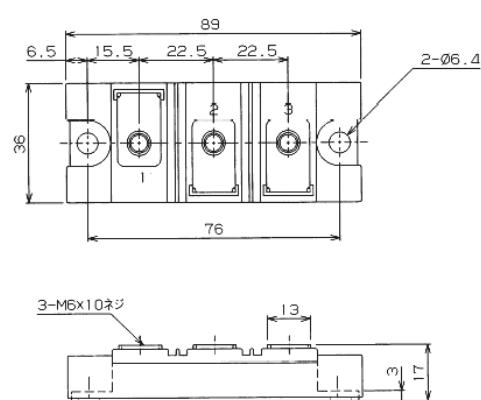
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E-60

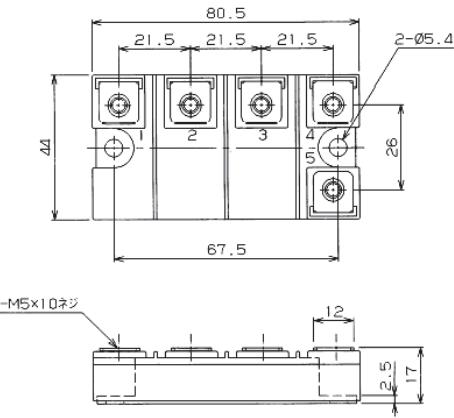


E-61

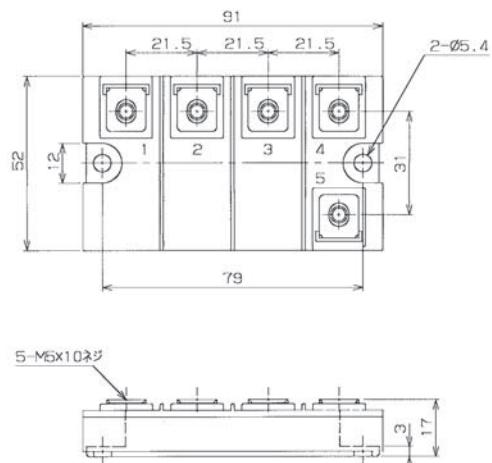


## 5. 外形寸法図 Outline

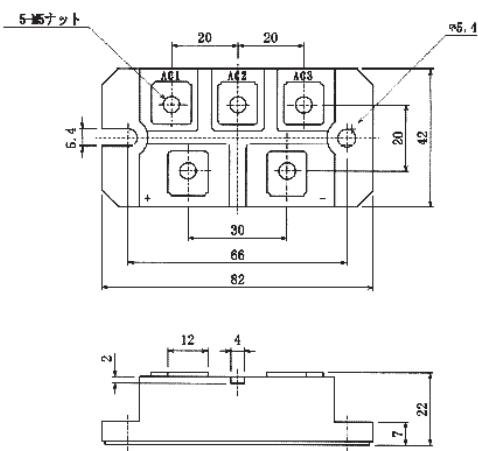
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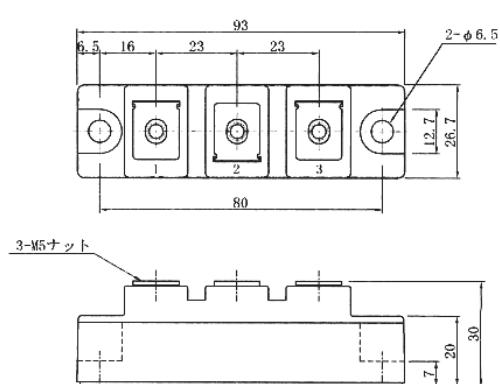
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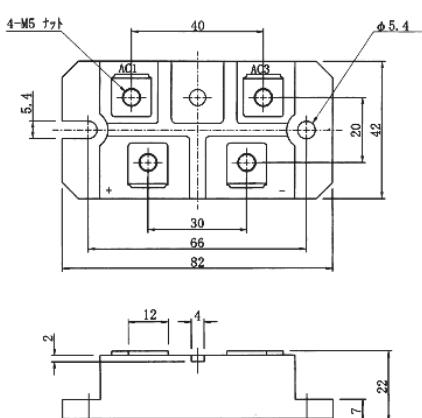
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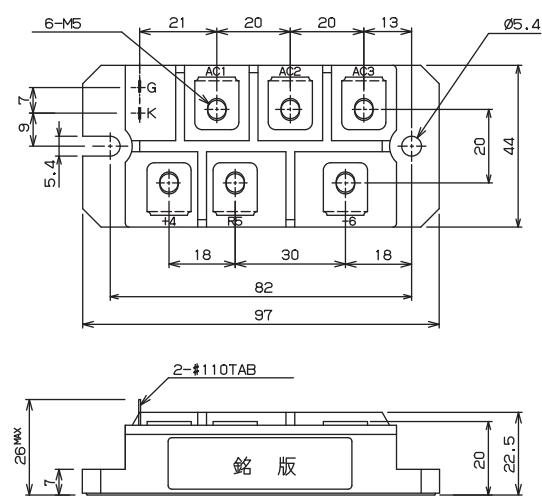
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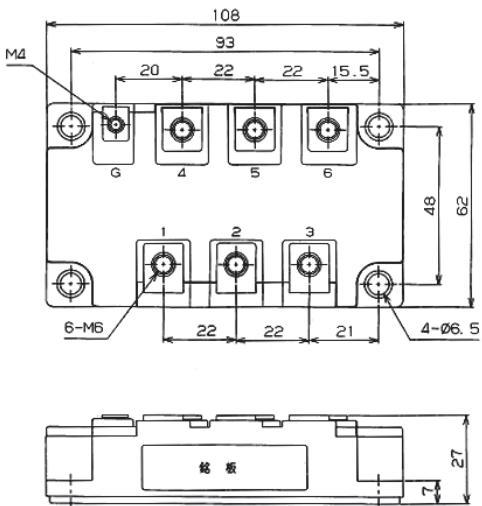
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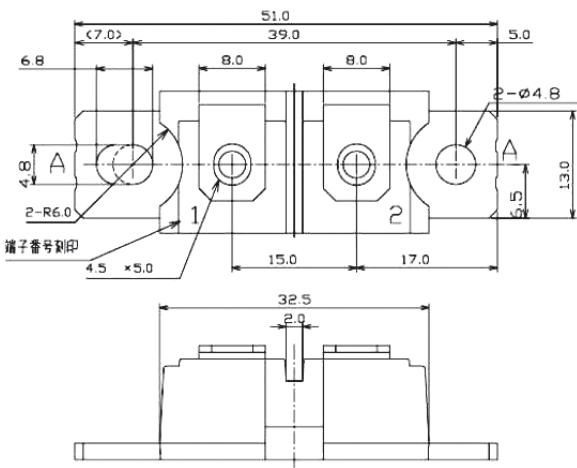
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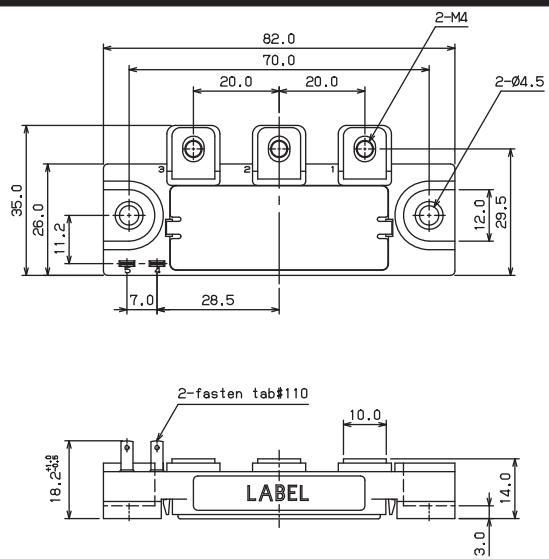
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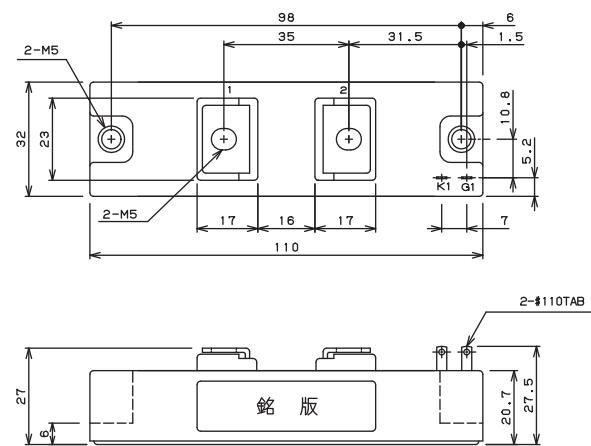
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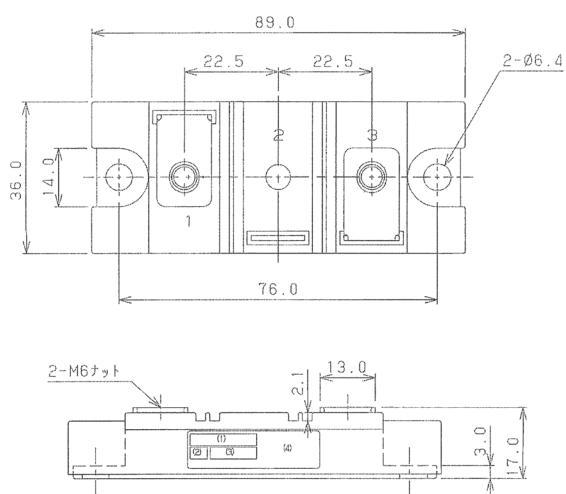
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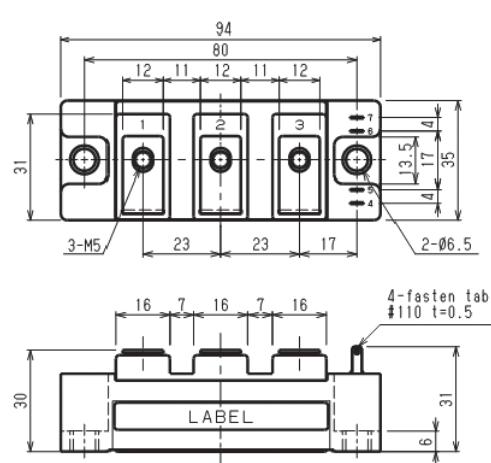
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E-73

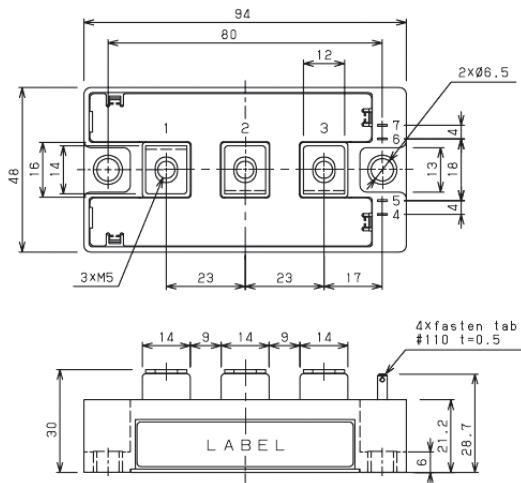


E-74

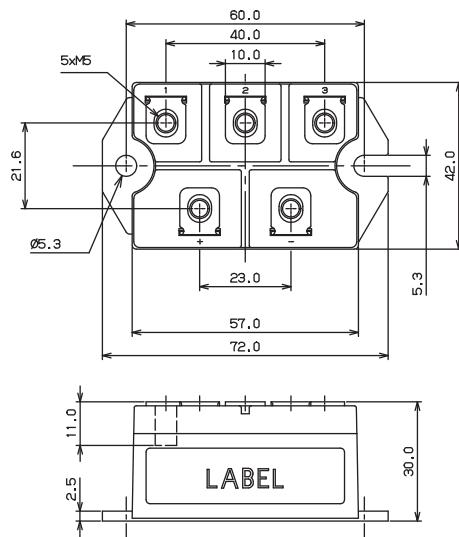


## 5. 外形寸法図 Outline

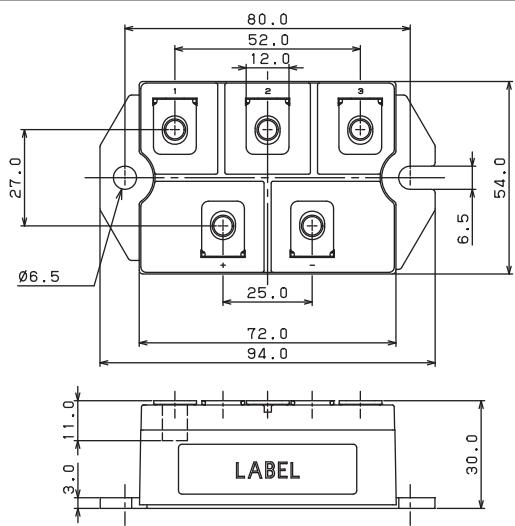
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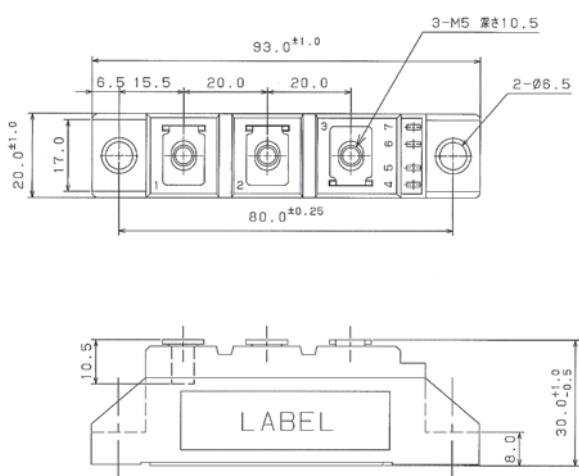
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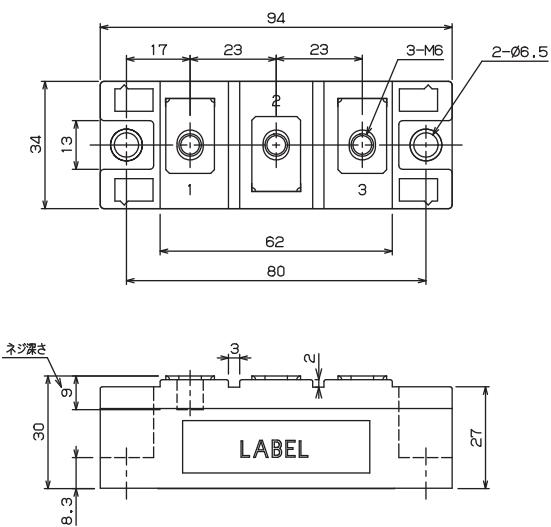
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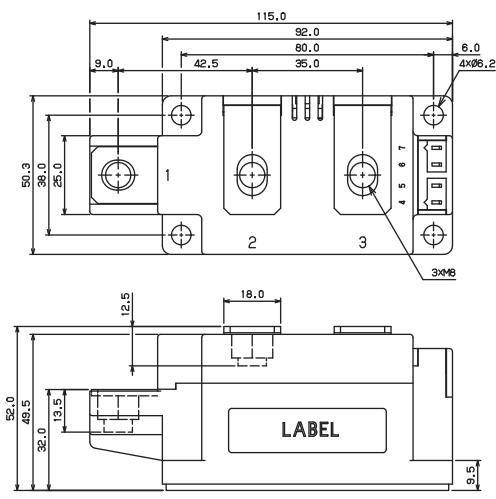
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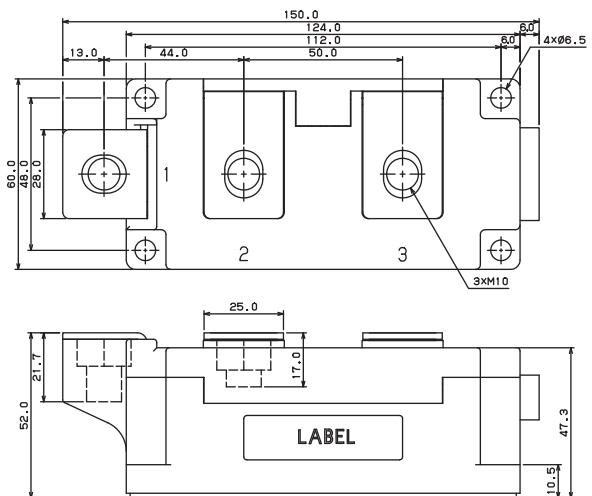
E-80



E-81



E-82



# 6. 梱包仕様 Packing Specifications

6-1. 最小発注単位 / 最小発注数量 Standard Packing Quantity / Minimum Order Quantity

Outline		Packaging Style 梱包形態	Taping Code テーピング型名	Standard Packing Quantity [pcs.] 最小発注単位[個]	Minimum Order Quantity [pcs.] 最小発注数量[個]
Axial Lead Device	A-1 3Max× Ø2.7 (DO-41S)	バルク Bulk in Plastic Bag	-	2,000	2,000
		つづら折りテーピング Tape & Ammunition Box	TA1B2	2,000	2,000
			TA2B5	5,000	5,000
	A-2 DO-204AC (DO-15)	バルク Bulk in Plastic Bag	-	2,000	2,000
		つづら折りテーピング Tape & Ammunition Box	TA1B2	1,800	1,800
			TA2B5	2,000	2,000
Surface Mounting Device	A-3 DO-201AD	バルク Bulk in Plastic Bag	-	2,000	2,000
		つづら折りテーピング Tape & Ammunition Box	TA2B5	800	800
	A-4 SOD-323FL	リールテーピング Tape & Reel	TE8L3	3,000	3,000
	A-5 SOD-123	リールテーピング Tape & Reel	TE8L3	3,000	3,000
	A-6 DO-214AC (SMA)	リールテーピング Tape & Reel	TE12L	1,500	1,500
	A-7 NA (DO-221BC)	リールテーピング Tape & Reel	TE12L	3,000	3,000
Through hole Device	A-8 NB	リールテーピング Tape & Reel	TE12L	1,500	1,500
	A-9 nSMC	リールテーピング Tape & Reel	TE16L	3,000	3,000
	A-10 TO-277	リールテーピング Tape & Reel	TE16L3	3,000	3,000
	A-12 TO-252 (Dpak)	リールテーピング Tape & Reel	TE16L3	3,000	3,000
	A-21 TO-263 (D2pak)	スティック Plastic Tube	-	2,500 (50 pcs. × 50 tubes)	2,500
		リールテーピング Tape & Reel	TE24L1	1,000	1,000
	A-22 TO-263LP	リールテーピング Tape & Reel	TE24L2	2,000	2,000
Through hole Device	A-11 TO-251	スティック Plastic Tube	-	6,750 (75 pcs. × 90 tubes)	6,750
	A-19 A-20 TO-262	スティック Plastic Tube	-	2,500 (50 pcs. × 50 tubes)	2,500
	A-14 A-15 A-16 A-17 A-18 TO-220 TO-220 Full-Mold	スティック Plastic Tube	-	2,500 (50 pcs. × 50 tubes)	2,500
	A-23 A-24 TO-247	スティック Plastic Tube	-	1,000 (25 pcs. × 40 tubes)	1,000
	A-25 A-26 TO-247 (long lead)	スティック Plastic Tube	-	750 (25 pcs. × 30 tubes)	750

## 6-2. つづら折りテーピング仕様 Tape & Ammunition Box

テーピング型名 Taping Code	Outline	テーピング形状および寸法 Tape Demensions (mm)	包装形態および寸法 Box Dimensions (mm)	梱包単位 (個) Quantity per ents Package (pcs.) cs)
TA1B2	A-1 3Max × ø2.7 (DO-41S)			2,000
	A-2 DO-204AC (DO-15)			1,800
TA2B5	A-1 3Max × ø2.7 (DO-41S)			5,000
	A-2 DO-204AC (DO-15)			2,000
	A-3 DO-201AD			800

## 6. 梱包仕様 Packing Specifications

### 6-3. リールテーピング仕様 (1/2) Embossed Carrier Tape & Reel (1/2)

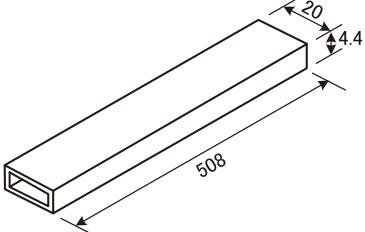
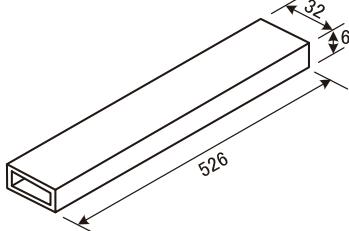
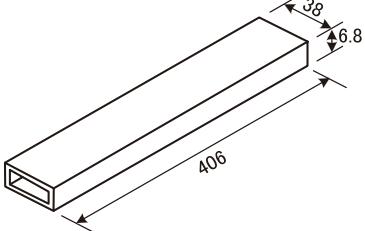
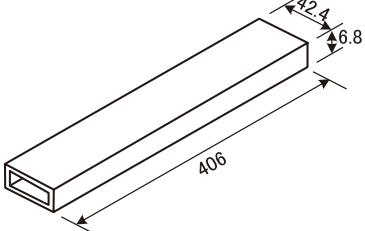
テーピング型名 Taping Code	Outline		テーピング形状および寸法 Tape Demensions (mm)	包装形態および寸法 Box Dimensions (mm)	梱包単位 (個) Quantity per Package (pcs.)
TE8L3	A-4	SOD-323FL	<p>Index hole <math>\phi 1.5^{+0.1}_{-0}</math>  <math>2.0 \pm 0.05</math> <math>4.0 \pm 0.1</math> <math>0.2 \pm 0.05</math>  <math>2.8 \pm 0.1</math> <math>3.0 \pm 0.1</math> <math>3.5 \pm 0.1</math> <math>8.0 \pm 0.2</math>  <math>1.55 \pm 0.1</math> <math>4.0 \pm 0.1</math> <math>0.8 \pm 0.1</math>  Direction of Feed →</p>	<p><math>11.4 \pm 1.5</math>  <math>180.0 \pm 6</math>  <math>55.0 \pm 2</math>  <math>13.0 \pm 0.5</math>  <math>9.0 \pm 0.5</math></p>	3,000
TE8L3	A-5	SOD-123	<p>Index hole <math>\phi 1.5^{+0.1}_{-0}</math>  <math>2.0 \pm 0.05</math> <math>4.0 \pm 0.1</math> <math>0.2 \pm 0.05</math>  <math>3.9 \pm 0.1</math> <math>3.0 \pm 0.1</math> <math>3.5 \pm 0.1</math> <math>8.0 \pm 0.2</math>  <math>1.9 \pm 0.1</math> <math>4.0 \pm 0.1</math> <math>1.3 \pm 0.1</math>  Direction of Feed →</p>	<p><math>13.0 \pm 1.5</math>  <math>180.0 \pm 6</math>  <math>60.0 \pm 2</math>  <math>13.0 \pm 0.5</math></p>	3,000
TE12L	A-6	DO-214AC (SMA)	<p>Index hole <math>\phi 1.5^{+0.1}_{-0}</math>  <math>2.0 \pm 0.05</math> <math>4.0 \pm 0.1</math> <math>0.3 \pm 0.05</math>  <math>5.4 \pm 0.1</math> <math>5.0 \pm 0.1</math> <math>5.5 \pm 0.05</math> <math>12.0 \pm 0.2</math>  <math>2.9 \pm 0.1</math> <math>4.0 \pm 0.1</math> <math>2.4 \pm 0.1</math>  Direction of Feed →</p>	<p><math>17.0 \pm 1.4</math>  <math>180.0 \pm 6</math>  <math>60.0 \pm 2</math>  <math>13.0 \pm 0.5</math></p>	1,500
TE12L	A-7	NA (DO-221BC)	<p>Index hole <math>\phi 1.5^{+0.1}_{-0}</math>  <math>2.0 \pm 0.05</math> <math>4.0 \pm 0.1</math> <math>0.25 \pm 0.03</math>  <math>5.2 \pm 0.1</math> <math>5.0 \pm 0.1</math> <math>5.5 \pm 0.05</math> <math>12.0 \pm 0.2</math>  <math>2.8 \pm 0.1</math> <math>4.0 \pm 0.1</math> <math>1.35 \pm 0.1</math>  Direction of Feed →</p>	<p><math>17.0 \pm 1.4</math>  <math>180.0 \pm 6</math>  <math>60.0 \pm 2</math>  <math>13.0 \pm 0.5</math></p>	3,000
TE12L	A-8	NB	<p>Index hole <math>\phi 1.5^{+0.1}_{-0}</math>  <math>2.0 \pm 0.05</math> <math>4.0 \pm 0.1</math> <math>0.25 \pm 0.03</math>  <math>5.2 \pm 0.1</math> <math>6.0 \pm 0.1</math> <math>8.0 \pm 0.1</math> <math>12.0 \pm 0.2</math>  <math>5.5 \pm 0.06</math> <math>1.35 \pm 0.1</math>  Direction of Feed →</p>	<p><math>17.0 \pm 1.4</math>  <math>180.0 \pm 6</math>  <math>60.0 \pm 2</math>  <math>13.0 \pm 0.5</math></p>	1,500

6-3. リールテーピング仕様 (2/2) Embossed Carrier Tape & Reel (2/2)

テーピング型名 Taping Code	Outline		テーピング形状および寸法 Tape Demensions (mm)	包装形態および寸法 Box Dimensions (mm)	梱包単位 (個) Quantity per Package (pcs.)
TE16L	A-9	nSMC	<p>L type Index hole <math>\phi 1.5^{+0.2}_{-0.1}</math> <math>2.0^{+0.1}_{-0.1}</math> <math>4.0^{+0.1}_{-0.1}</math> <math>0.4^{+0.05}_{-0.1}</math> <math>11.5^{+0.1}_{-0.1}</math> <math>13.5^{+0.1}_{-0.1}</math> <math>14.0^{+0.1}_{-0.1}</math> <math>10.6^{+0.1}_{-0.1}</math> <math>12.0^{+0.1}_{-0.1}</math> <math>5.1^{+0.1}_{-0.1}</math> Direction of Feed →</p>	<p>21.5 ±1.5 13.0 ±0.5 330.0 ±2 17.5 ±1.5</p>	3,000
TE16L3	A-12	TO-252 (Dpak)	<p>Index hole <math>\phi 1.5^{+0.2}_{-0.1}</math> 1.5 ±0.1 2.0 ±0.1 4.0 ±0.1 8.0 ±0.1 11.5 ±0.1 13.5 ±0.1 14.0 ±0.1 17.5 ±0.1 21.5 ±0.1 330.0 ±2 332.0 ±2</p>	<p>17.5 ±0.1 13.0 ±0.1 330.0 ±2 332.0 ±2</p>	3,000
TE16L3	A-10	TO-277	<p>Index hole <math>\phi 1.5^{+0.2}_{-0.1}</math> 1.5 ±0.1 2.0 ±0.1 4.0 ±0.1 8.0 ±0.1 11.5 ±0.1 13.5 ±0.1 14.0 ±0.1 17.5 ±0.1 21.5 ±0.1 330.0 ±2 332.0 ±2</p>	<p>17.5 ±0.1 13.0 ±0.1 330.0 ±2 332.0 ±2</p>	3,000
TE24L1	A-21	TO-263 (D2pak)	<p>L type Index hole <math>\phi 1.5^{+0.1}_{-0.1}</math> <math>2.0^{+0.1}_{-0.1}</math> <math>4.0^{+0.1}_{-0.1}</math> <math>0.4^{+0.05}_{-0.1}</math> <math>11.5^{+0.1}_{-0.1}</math> <math>13.5^{+0.1}_{-0.1}</math> <math>14.0^{+0.1}_{-0.1}</math> <math>10.6^{+0.1}_{-0.1}</math> <math>12.0^{+0.1}_{-0.1}</math> <math>5.1^{+0.1}_{-0.1}</math> Direction of Feed →</p>	<p>29.5 ±1.5 13.0 ±0.5 330.0 ±2 332.0 ±2 25.5 ±1.5</p>	1,000
TE24L2	A-22	TO-263LP	<p>Index hole <math>\phi 1.5^{+0.1}_{-0.1}</math> <math>\phi 2.0^{+0.1}_{-0.1}</math> <math>2.0^{+0.1}_{-0.1}</math> <math>4.0^{+0.1}_{-0.1}</math> <math>0.3^{+0.05}_{-0.1}</math> <math>11.5^{+0.1}_{-0.1}</math> <math>14.0^{+0.1}_{-0.1}</math> <math>10.6^{+0.1}_{-0.1}</math> <math>12.0^{+0.1}_{-0.1}</math> <math>2.0^{+0.1}_{-0.1}</math> Direction of Feed →</p>	<p>29.5 ±1.5 13.0 ±0.5 330.0 ±2 332.0 ±2 25.5 ±1.5</p>	2,000

## 6. 梱包仕様 Packing Specifications

### 6-4. スティック仕様 Plastic Tube

	Outline	スティック形状および寸法 Tube Demensions (mm)	梱包単位 (個) Quantity per Package (pcs.)
A-11 A-12	TO-251 TO-251(Dpak)		75
A-13 A-14 A-15 A-17 A-19 A-20	TO-220 TO-220 Full-Mold TO-262		50
A-23 A-24	TO-247		25
A-25 A-26	TO-247 (long lead)		25

## 7. スタック・ユニット製品 Stacks and Units

京セラでは、産業のあらゆる分野で活躍するパワースタック・ユニット製品を提供しています。単相、三相用各種制御整流器回路、自冷型、風冷型、ヒューズ、アブソーバー付など様々なご要望にお応えいたします。

Kyocera provides power stack unit products that are actively used in all fields of industry. Various product types such as various control and rectifier circuits for single-phase or three-phase, self-cooling or forced air cooling type, and with fuse or absorber are provided to meet your requirements.

長年の実績により、高圧・大電流の扱いに必要となる回路設計、放熱設計、機構設計技術を有していますので、お客様のご要望に合わせたカスタム製品の設計製作も可能です。ご要望の際は弊社営業担当までお問い合わせ下さい。

As we have technologies to design circuits, heat radiations, and mechanisms required for handling high voltage and high current, based on achievements in our long experience, we can design and manufacture custom products to meet your needs. If you have requests or any questions, please feel free to contact our sales representative.

事例  
Examples

### カスタム開発 Customized model

#### 生産ライン用 高圧大電流インバータユニットの開発 Development of High voltage/ large current inverter unit for production line

お客様のニーズ  
Customer needs

生産ラインに用いるため堅牢かつ充実した保護回路を備えたインバータを設計・製造してほしい

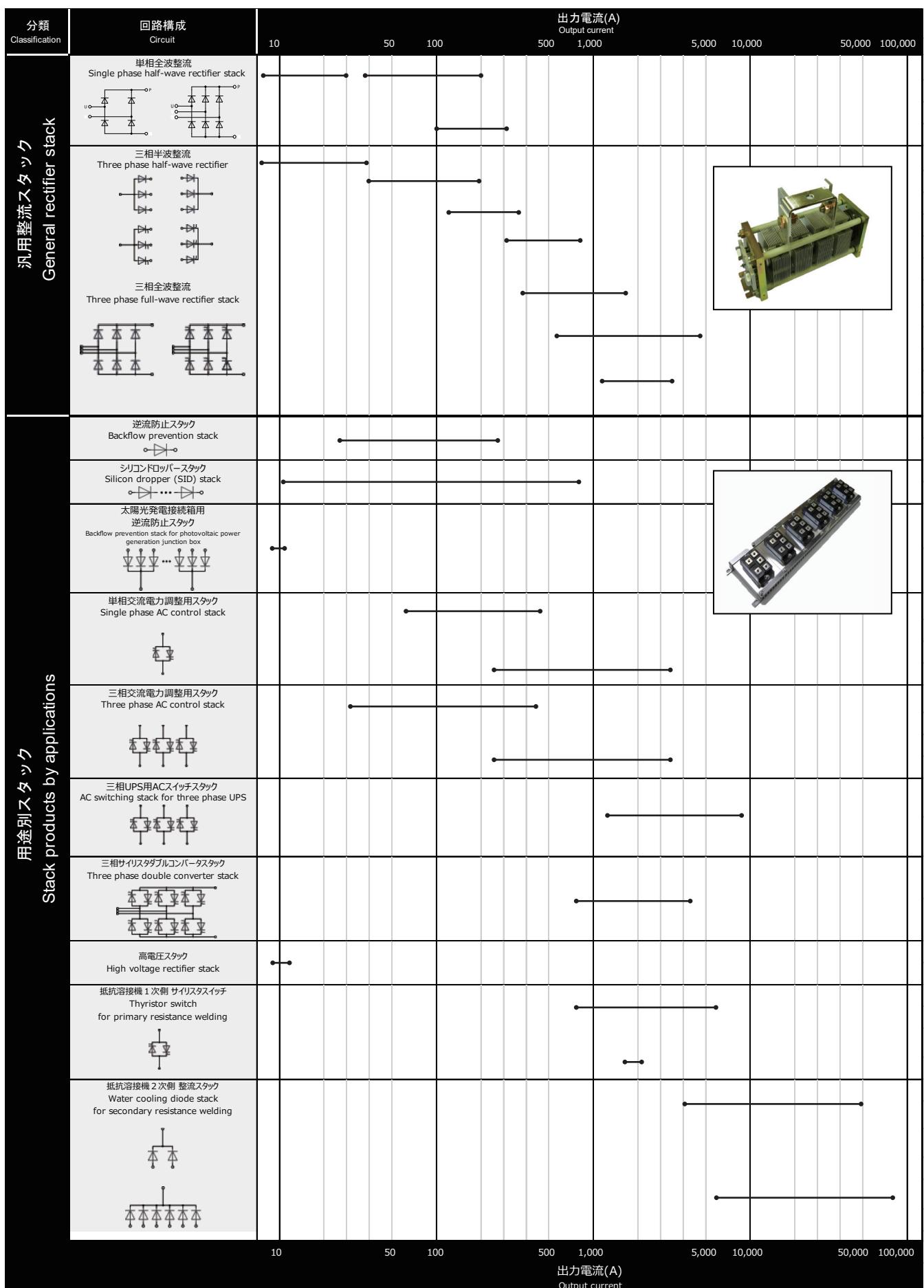
Example of request: want to design and manufacture inverter which carries great protection circuits and also very tough inverter for production line.

高圧・大電流実装技術を活かして堅牢な  
インバータユニットを実現  
Enable to manufacture tough inverter unit by using  
high voltage/ large current mounting technology.

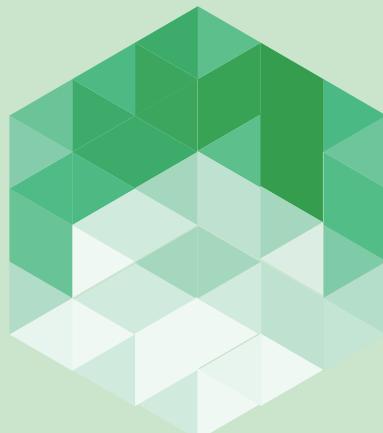


アプリケーション Application	生産ライン用途モータ駆動 Motor drive for production line
特徴 Features	充実した保護回路を備えたIGBTインバータ、大容量IGBTモジュール搭載 Example of request: want to design and manufacture inverter which carries great protection circuits and also very tough inverter for production line.
仕様 Specifications	入力電圧:~DC650V 出力電圧:440V、出力電流:AC200Arms 過電圧/過電流/短絡保護/過熱保護回路搭載、光絶縁インターフェース Input voltage: ~DC 650V Output voltage: 440V, Output current: AC200Arms Overvoltage/ Overcurrent/ Short-circuit protection/ Built-in overheat protection circuit, light insulation interface

## 7. スタック・ユニット製品 Stacks and Units



当社では、お客様のご要望に応じたカスタム製品を設計製作、納入しております。ご要望の際は、弊社営業担当までお問合せ下さい。  
We provides Power stack/unit products that matches customers request. Please feel free to contact us.



当カタログに記載の情報は 2020 年 8 月時点のものです。  
The information contained in this catalog is current as of August 2020.

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