

P4SMAJ-AU SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 400 Watt

STAND-OFF VOLTAGE

5 to 220 Volt

SMA / DO-214AC

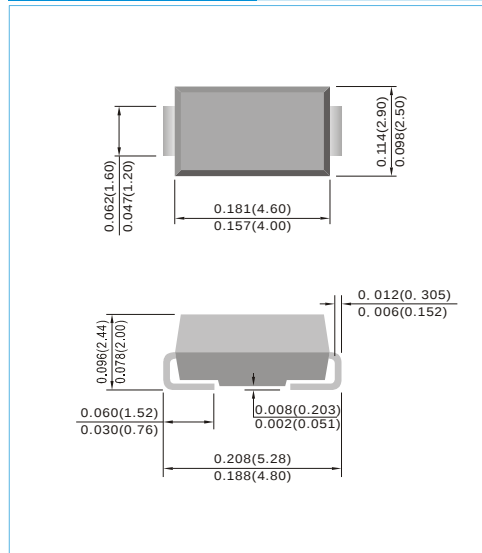
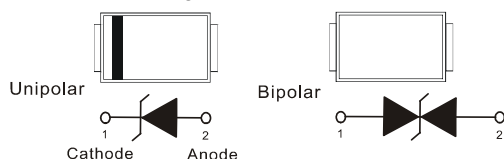
Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- ESD IEC-61000-4-2 Air $\pm$ 30kV, Contact $\pm$ 30kV
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: JEDEC DO-214AC, Molded plastic over passivated junction
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.002 ounce, 0.064 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P4SMAJ5.0 thru types P4SMAJ220.

Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on $T_A = 25^\circ\text{C}$ (Notes 1,2,5, Fig.1)	P_{PP}	400	Watts
Peak Forward Surge Current per Fig.5 (Notes 3)	I_{FSM}	40	Amps
Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform (Notes 1) Fig.2	I_{PPM}	see Table 1	Amps
Typical Thermal Resistance Junction to Air (Notes 2)	$R_{\theta JA}$	70	$^\circ\text{C} / \text{W}$
ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5mm² copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75°C = T_L .
5. Peak pulse power waveform is $t_p=10/1000\mu\text{s}$.
6. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.



P4SMAJ-AU SERIES

Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000μs	Peak Pulse Current 10/1000μs	Marking Code	
		Min.	Max.	UNI	BI						
UNI	BI	V	V	V	mA	μA	μA	V	A	UNI	BI
P4SMAJ5.0-AU	P4SMAJ5.0C-AU	5	6.4	7.55	10	800	1600	9.6	41.6	HD	TD
P4SMAJ5.0A-AU	P4SMAJ5.0CA-AU	5	6.4	7	10	800	1600	9.2	43.5	HE	TE
P4SMAJ6.0-AU	P4SMAJ6.0C-AU	6	6.67	8.45	10	800	1600	11.4	35.1	HF	TF
P4SMAJ6.0A-AU	P4SMAJ6.0CA-AU	6	6.67	7.37	10	800	1600	10.3	38.8	HG	TG
P4SMAJ6.5-AU	P4SMAJ6.5C-AU	6.5	7.22	9.14	10	500	1000	12.3	32.5	HH	TH
P4SMAJ6.5A-AU	P4SMAJ6.5CA-AU	6.5	7.22	7.98	10	500	1000	11.2	35.7	HK	TK
P4SMAJ7.0-AU	P4SMAJ7.0C-AU	7	7.78	9.86	10	200	400	13.3	30.1	HL	TL
P4SMAJ7.0A-AU	P4SMAJ7.0CA-AU	7	7.78	8.6	10	200	400	12	33.3	HM	TM
P4SMAJ7.5-AU	P4SMAJ7.5C-AU	7.5	8.33	10.67	1	100	200	14.3	28	HN	TN
P4SMAJ7.5A-AU	P4SMAJ7.5CA-AU	7.5	8.33	9.21	1	100	200	12.9	31	HP	TP
P4SMAJ8.0-AU	P4SMAJ8.0C-AU	8	8.89	11.3	1	50	100	15	26.5	HQ	TQ
P4SMAJ8.0A-AU	P4SMAJ8.0CA-AU	8	8.89	9.83	1	50	100	13.6	29.4	HR	TR
P4SMAJ8.5-AU	P4SMAJ8.5C-AU	8.50	9.44	11.92	1	10	20	15.9	25.1	HS	TS
P4SMAJ8.5A-AU	P4SMAJ8.5CA-AU	8.50	9.44	10.4	1	10	20	14.4	27.7	HT	TT
P4SMAJ9.0-AU	P4SMAJ9.0C-AU	9	10	12.6	1	5	5	16.9	23.6	HU	TU
P4SMAJ9.0A-AU	P4SMAJ9.0CA-AU	9	10	11.1	1	5	5	15.4	26	HV	TV
P4SMAJ10-AU	P4SMAJ10C-AU	10	11.1	14.1	1	5	5	18.8	21.2	HW	TW
P4SMAJ10A-AU	P4SMAJ10CA-AU	10	11.1	12.3	1	5	5	17	23.5	HX	TX
P4SMAJ11-AU	P4SMAJ11C-AU	11	12.2	15.4	1	1	1	20.1	20	HY	TY
P4SMAJ11A-AU	P4SMAJ11CA-AU	11	12.2	13.5	1	1	1	18.2	22	HZ	TZ
P4SMAJ12-AU	P4SMAJ12C-AU	12	13.3	16.9	1	1	1	22	18.1	ID	UD
P4SMAJ12A-AU	P4SMAJ12CA-AU	12	13.3	14.7	1	1	1	19.9	20.1	IE	UE
P4SMAJ13-AU	P4SMAJ13C-AU	13	14.4	18.2	1	1	1	23.8	16.8	IF	UF
P4SMAJ13A-AU	P4SMAJ13CA-AU	13	14.4	15.9	1	1	1	21.5	18.6	IG	UG
P4SMAJ14-AU	P4SMAJ14C-AU	14	15.6	19.8	1	1	1	25.8	15.5	IH	UH
P4SMAJ14A-AU	P4SMAJ14CA-AU	14	15.6	17.2	1	1	1	23.2	17.2	IK	UK
P4SMAJ15-AU	P4SMAJ15C-AU	15	16.7	21.1	1	1	1	26.9	14.8	IL	UL
P4SMAJ15A-AU	P4SMAJ15CA-AU	15	16.7	18.5	1	1	1	24.4	16.4	IM	UM
P4SMAJ16-AU	P4SMAJ16C-AU	16	17.8	22.6	1	1	1	28.8	13.8	IN	UN
P4SMAJ16A-AU	P4SMAJ16CA-AU	16	17.8	19.7	1	1	1	26	15.3	IP	UP
P4SMAJ17-AU	P4SMAJ17C-AU	17	18.9	23.9	1	1	1	30.5	13.1	IQ	UQ
P4SMAJ17A-AU	P4SMAJ17CA-AU	17	18.9	20.9	1	1	1	27.6	14.5	IR	UR
P4SMAJ18-AU	P4SMAJ18C-AU	18	20	25.3	1	1	1	32.2	12.4	IS	US
P4SMAJ18A-AU	P4SMAJ18CA-AU	18	20	22.1	1	1	1	29.2	13.7	IT	UT
P4SMAJ20-AU	P4SMAJ20C-AU	20	22.2	28.1	1	1	1	35.8	11.1	IU	UU
P4SMAJ20A-AU	P4SMAJ20CA-AU	20	22.2	24.5	1	1	1	32.4	12.3	IV	UV
P4SMAJ22-AU	P4SMAJ22C-AU	22	24.4	30.9	1	1	1	39.4	10.1	IW	UW
P4SMAJ22A-AU	P4SMAJ22CA-AU	22	24.4	26.9	1	1	1	35.5	11.2	IX	UX
P4SMAJ24-AU	P4SMAJ24C-AU	24	26.7	33.8	1	1	1	43	9.3	IY	UY
P4SMAJ24A-AU	P4SMAJ24CA-AU	24	26.7	29.5	1	1	1	38.9	10.3	IZ	UZ
P4SMAJ26-AU	P4SMAJ26C-AU	26	28.9	36.6	1	1	1	46.6	8.6	JD	VD
P4SMAJ26A-AU	P4SMAJ26CA-AU	26	28.9	31.9	1	1	1	42.1	9.5	JE	VE
P4SMAJ28-AU	P4SMAJ28C-AU	28	31.1	39.4	1	1	1	50	8	JF	VF
P4SMAJ28A-AU	P4SMAJ28CA-AU	28	31.1	34.4	1	1	1	45.4	8.8	JG	VG
P4SMAJ30-AU	P4SMAJ30C-AU	30	33.3	42.2	1	1	1	53.5	7.5	JH	VH
P4SMAJ30A-AU	P4SMAJ30CA-AU	30	33.3	36.8	1	1	1	48.4	8.3	JK	VK
P4SMAJ33-AU	P4SMAJ33C-AU	33	36.7	46.5	1	1	1	59	6.8	JL	VL
P4SMAJ33A-AU	P4SMAJ33CA-AU	33	36.7	40.6	1	1	1	53.3	7.5	JM	VM
P4SMAJ36-AU	P4SMAJ36C-AU	36	40	50.7	1	1	1	64.3	6.2	JN	VN
P4SMAJ36A-AU	P4SMAJ36CA-AU	36	40	44.2	1	1	1	58.1	6.9	JP	VP
P4SMAJ40-AU	P4SMAJ40C-AU	40	44.4	56.3	1	1	1	71.4	5.6	JQ	VQ
P4SMAJ40A-AU	P4SMAJ40CA-AU	40	44.4	49.1	1	1	1	64.5	6.2	JR	VR



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Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000μs	Peak Pulse Current 10/1000μs	Marking Code	
		V _{RWM} (Notes 6)	V _{BR} @ I _T		I _T	I _R @ V _{RWM}		V _C @ I _{PP}	I _{PP}		
			Min.	Max.		UNI	BI				
UNI	BI	V	V	V	mA	μA	μA	V	A	UNI	BI
P4SMAJ43-AU	P4SMAJ43C-AU	43	47.8	60.5	1	5	5	76.7	5.2	JS	VS
P4SMAJ43A-AU	P4SMAJ43CA-AU	43	47.8	52.8	1	5	5	69.4	5.7	JT	VT
P4SMAJ45-AU	P4SMAJ45C-AU	45	50	63.3	1	5	5	80.3	5	JU	VU
P4SMAJ45A-AU	P4SMAJ45CA-AU	45	50	55.3	1	5	5	72.7	5.5	JV	VV
P4SMAJ48-AU	P4SMAJ48C-AU	48	53.3	67.5	1	5	5	85.5	4.7	JW	VW
P4SMAJ48A-AU	P4SMAJ48CA-AU	48	53.3	58.9	1	5	5	77.4	5.2	JX	VX
P4SMAJ51-AU	P4SMAJ51C-AU	51	56.7	71.8	1	5	5	91.1	4.4	JY	VY
P4SMAJ51A-AU	P4SMAJ51CA-AU	51	56.7	62.7	1	5	5	82.4	4.9	JZ	VZ
P4SMAJ54-AU	P4SMAJ54C-AU	54	60	76	1	5	5	96.3	4.2	RD	WD
P4SMAJ54A-AU	P4SMAJ54CA-AU	54	60	66.3	1	5	5	87.1	4.6	RE	WE
P4SMAJ58-AU	P4SMAJ58C-AU	58	64.4	81.6	1	5	5	103	3.9	RF	WF
P4SMAJ58A-AU	P4SMAJ58CA-AU	58	64.4	71.2	1	5	5	93.6	4.3	RG	WG
P4SMAJ60-AU	P4SMAJ60C-AU	60	66.7	84.5	1	5	5	107	3.7	RH	WH
P4SMAJ60A-AU	P4SMAJ60CA-AU	60	66.7	73.7	1	5	5	96.8	4.1	RK	WK
P4SMAJ64-AU	P4SMAJ64C-AU	64	71.1	90.1	1	5	5	114	3.5	RL	WL
P4SMAJ64A-AU	P4SMAJ64CA-AU	64	71.1	78.6	1	5	5	103	3.9	RM	WM
P4SMAJ70-AU	P4SMAJ70C-AU	70	77.8	98.6	1	5	5	125	3.2	RN	WN
P4SMAJ70A-AU	P4SMAJ70CA-AU	70	77.8	86	1	5	5	113	3.5	RP	WP
P4SMAJ75-AU	P4SMAJ75C-AU	75	83.3	105.7	1	5	5	134	3	RQ	WQ
P4SMAJ75A-AU	P4SMAJ75CA-AU	75	83.3	92.1	1	5	5	121	3.3	RR	WR
P4SMAJ78-AU	P4SMAJ78C-AU	78	86.7	109.8	1	5	5	139	2.9	RS	WS
P4SMAJ78A-AU	P4SMAJ78CA-AU	78	86.7	95.8	1	5	5	126	3.2	RT	WT
P4SMAJ85-AU	P4SMAJ85C-AU	85	94.4	119.2	1	5	5	151	2.6	RU	WU
P4SMAJ85A-AU	P4SMAJ85CA-AU	85	94.4	104	1	5	5	137	2.9	RV	WV
P4SMAJ90-AU	P4SMAJ90C-AU	90	100	126.5	1	5	5	160	2.5	RW	WW
P4SMAJ90A-AU	P4SMAJ90CA-AU	90	100	111	1	5	5	146	2.7	RX	WX
P4SMAJ100-AU	P4SMAJ100C-AU	100	111	141	1	5	5	179	2.2	RY	WY
P4SMAJ100A-AU	P4SMAJ100CA-AU	100	111	123	1	5	5	162	2.5	RZ	WZ
P4SMAJ110-AU	P4SMAJ110C-AU	110	122	154.5	1	5	5	196	2	SD	XD
P4SMAJ110A-AU	P4SMAJ110CA-AU	110	122	135	1	5	5	177	2.3	SE	XE
P4SMAJ120-AU	P4SMAJ120C-AU	120	133	169	1	5	5	214	1.9	SF	XF
P4SMAJ120A-AU	P4SMAJ120CA-AU	120	133	147	1	5	5	193	2	SG	XG
P4SMAJ130-AU	P4SMAJ130C-AU	130	144	182.5	1	5	5	231	1.7	SH	XH
P4SMAJ130A-AU	P4SMAJ130CA-AU	130	144	159	1	5	5	209	1.9	SK	XK
P4SMAJ150-AU	P4SMAJ150C-AU	150	167	211.5	1	5	5	268	1.5	SL	XL
P4SMAJ150A-AU	P4SMAJ150CA-AU	150	167	185	1	5	5	243	1.6	SM	XM
P4SMAJ160-AU	P4SMAJ160C-AU	160	178	226	1	5	5	287	1.4	SN	XN
P4SMAJ160A-AU	P4SMAJ160CA-AU	160	178	197	1	5	5	259	1.5	SP	XP
P4SMAJ170-AU	P4SMAJ170C-AU	170	189	239.5	1	5	5	304	1.3	SQ	XQ
P4SMAJ170A-AU	P4SMAJ170CA-AU	170	189	209	1	5	5	275	1.4	SR	XR
P4SMAJ180-AU	P4SMAJ180C-AU	180	198	253.8	1	5	5	322	1.2	SS	YS
P4SMAJ180A-AU	P4SMAJ180CA-AU	180	198	222	1	5	5	292	1.3	ST	YT
P4SMAJ190-AU	P4SMAJ190C-AU	190	209	267.9	1	5	5	340	1.2	SU	YU
P4SMAJ190A-AU	P4SMAJ190CA-AU	190	209	243.2	1	5	5	308	1.3	SV	YV
P4SMAJ200-AU	P4SMAJ200C-AU	200	220	282	1	5	5	358	1.1	SW	YW
P4SMAJ200A-AU	P4SMAJ200CA-AU	200	220	247	1	5	5	324	1.2	SX	YX
P4SMAJ210-AU	P4SMAJ210C-AU	210	231	296.1	1	5	5	376	1.1	SY	YY
P4SMAJ210A-AU	P4SMAJ210CA-AU	210	231	268.8	1	5	5	340	1.2	SZ	YZ
P4SMAJ220-AU	P4SMAJ220C-AU	220	242	310.2	1	5	5	394	1	GD	ZD
P4SMAJ220A-AU	P4SMAJ220CA-AU	220	242	272	1	5	5	356	1.1	GE	ZE

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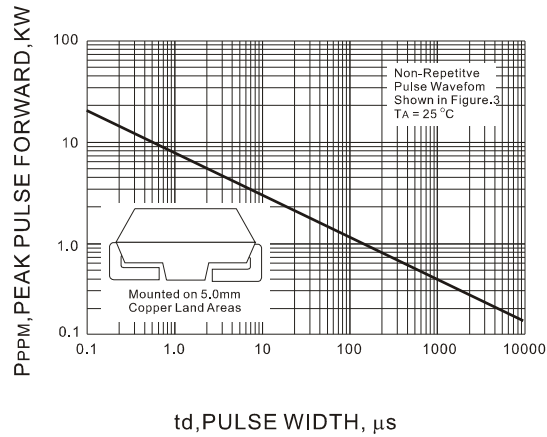


Fig.1 PEAK PULSE POWER RATING CURVE

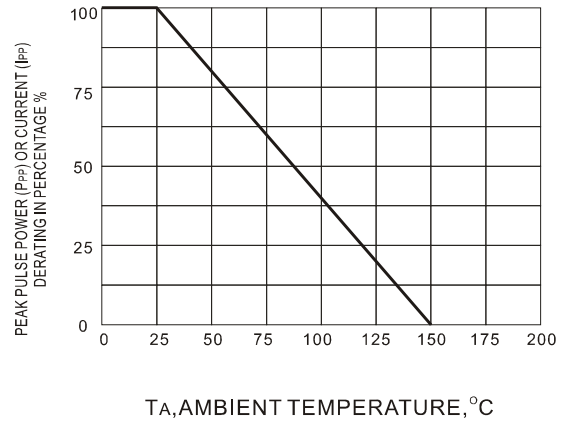


Fig.2 DERATING CURVE

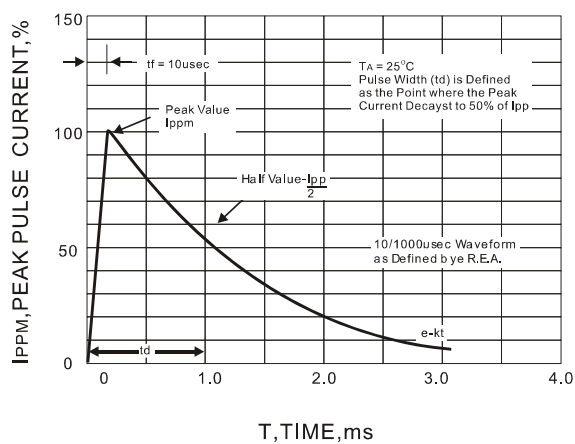


Fig.3 PULSE WAVEFORM

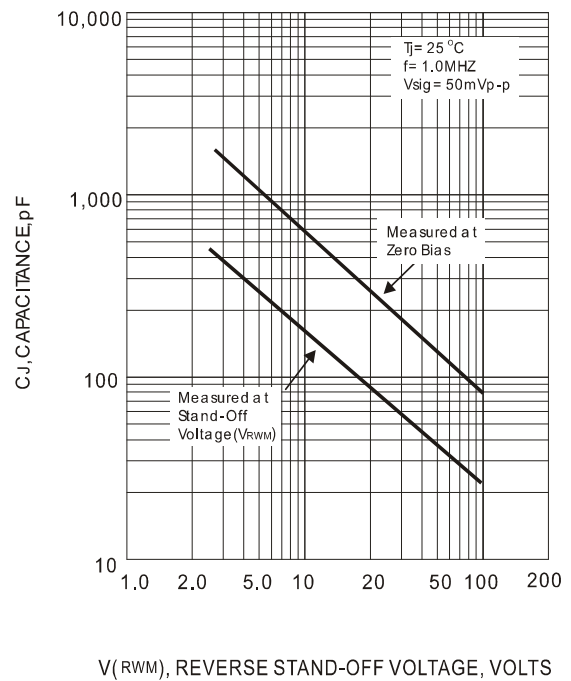


Fig.4 TYPICAL JUNCTION CAPACITANCE

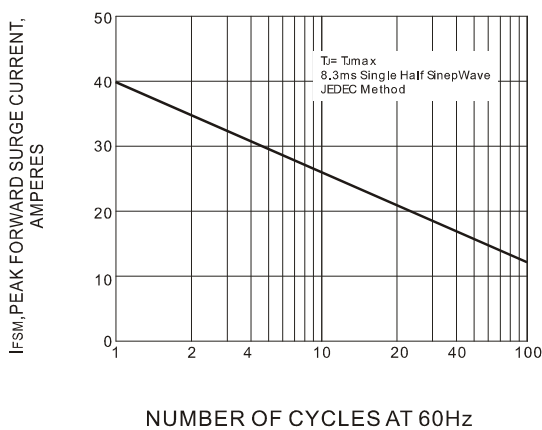
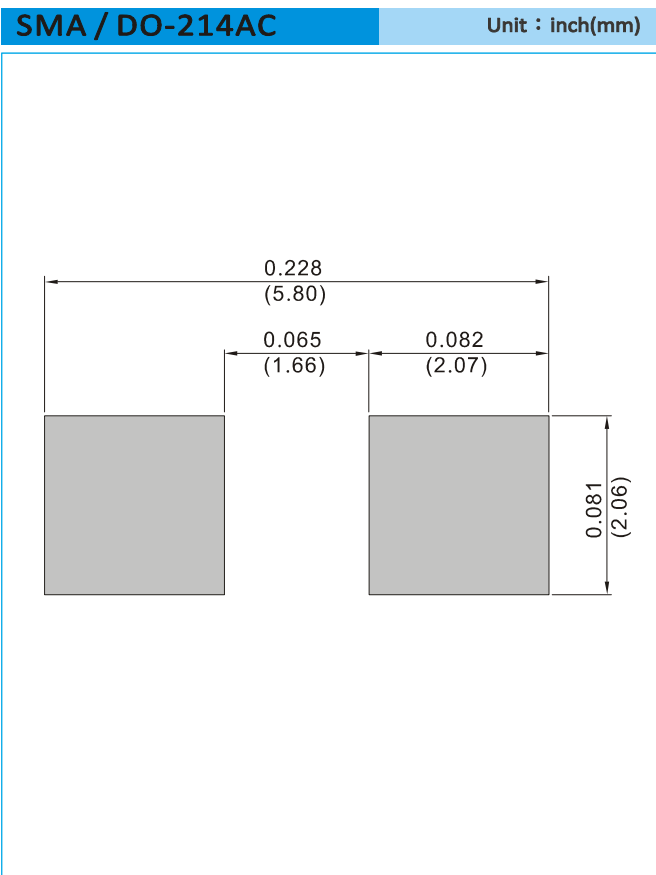


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

P4SMAJ-AU SERIES

MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 7.5K per 13" plastic Reel
 - T/R - 1.8K per 7" plastic Reel

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Part No_packing code_Version

P4SMAJ5.0-AU_R1_000A1

P4SMAJ5.0-AU_R2_000A1

For example :

RB500V-40_R2_00001

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code XX				Version Code XXXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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