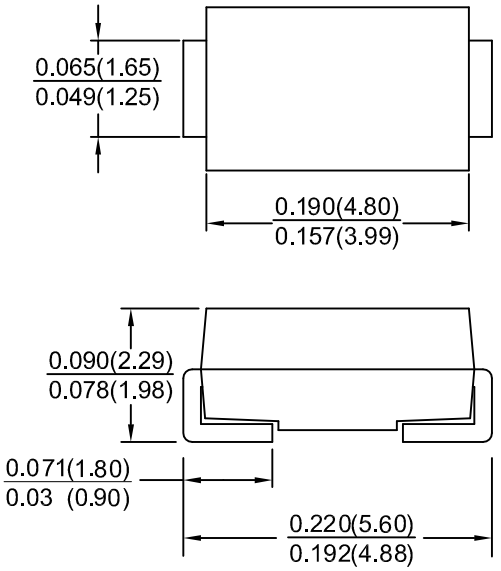
P4SMAJ5.0(A) THRU P4SMAJ170(A)
P4SMAJ5.0A(CA) THRU P4SMAJ170A(CA)

VOLTAGE - 5.0 TO 170 VOLTS 400 WATT PEAK POWER

SMA/DO-214AC

FEATURES:

- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- Optimized for lan protection application
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time : typicaly less than 1.0 ps from 0 volts to $V_{(BR)\ min}$
- Typical I_R less than 1uA above 10V
- 400W peak pulse power capability with a 10/1000us waveform , repetition rate (duty cycle) : 0.01%
- High temperature soldering guaranteed : 250℃ /10 seconds at terminal



Suffix " ","A"
UNDIRECTIONAL

Suffix "C","CA"
DIRECTIONAL

Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic
Terminals: Solder plated, Solderable per MIL-STD-705, Method 2026
Polarity: Indicated by cathode band band
Weight: 0.064 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25° C ambient temp. unless otherwise specified.
Single phase, half sine wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20 %.

Characteristic	Symbol	Value	Units
Minimum peak power dissipation on 10/1000us wavefrom (note1)	P_{PK}	400	W
Maximum peak pulse current of on 10/1000us wavefrom (note1,fig1)	I_{PPM}	SEE TABLE1～3	Amps
Stedy state power dissipation at T_L=75 ℃ (note 2)	$P_{M(AV)}$	1.0	Watts
Maximum forward Surge current, 8.3ms Single Hlaf Sine-Wave Supermposed on rated load Unidirectional only (note 3)	I_{FSM}	40	Amps
Maximum instantaneous forward voltage at 25A for unidirectional only(note 5)	V_F	3.5/5.0	Volts
Operating and storage temperature range	T_J, Tstg	-55 to+150	℃

NOTES :
1. Non-repetitive current pulse, per Fig.1 and derated above Ta=25℃ per Fig.2
2. Mounted on 5.0mmx5.0mm copper pads to each terminal
3. Measured on 8.3mS Singal half sine-wave or equivalent square wave ,duty cycle =4pulses per minute maximum for uni-directinal devices only
4. Peak pulse power wavefrom is 10/1000us
5. VF=3.5V on P4SMAJ5.0 THRU P4SMAJ90 devices and VF=5.0V on P4SMAJ100 THRU P4SMAJ170

Figure 1.-Pulse Waveform

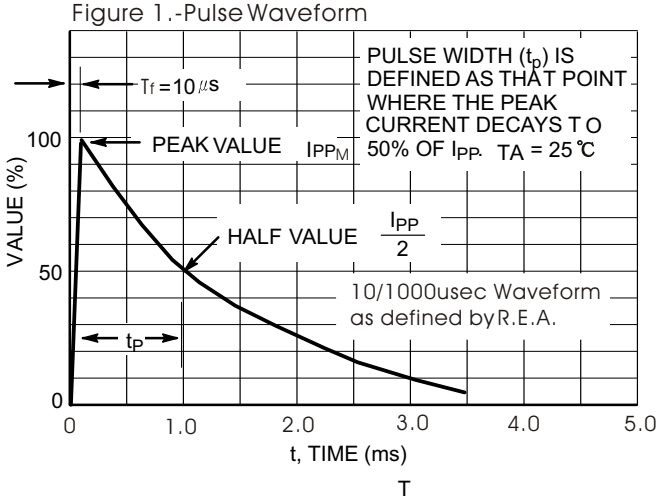


Figure 2.-Pulse Derating Cure

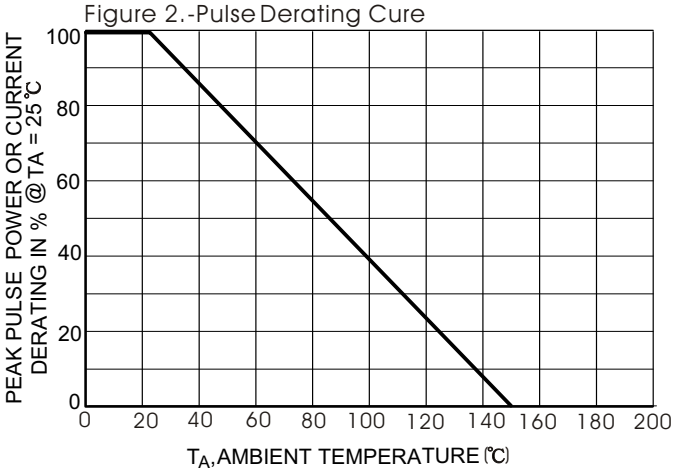
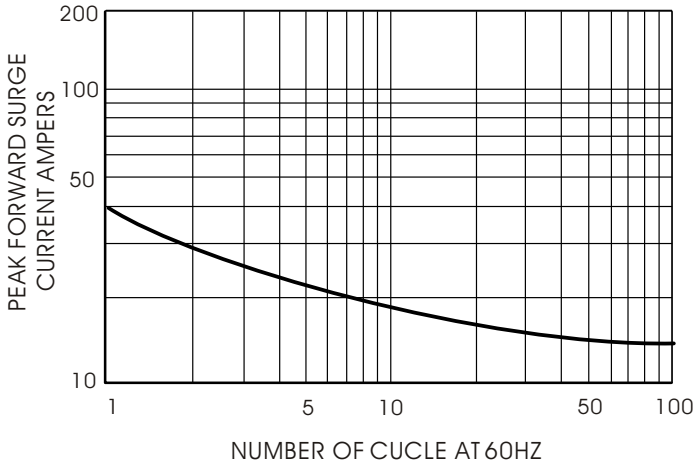


Figure 4.-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional



RATINGS AND CHARACTERISTIC CURVES P4SMAJ5.0(A)(C)(CA) THRU P4SMAJ170(A)(C)(CA)

TABLE 1

Device Type	Breakdown V_{BR} Voltage at I_T(Voltage)		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P4SMAJ5.0(C)	6.40	7.81	10	5.00	800	31.3	9.60	AD	WD
P4SMAJ5.0A(CA)	6.40	7.08	10	5.00	800	32.6	9.20	AE	WE
P4SMAJ6.0(C)	6.67	8.15	10	6.00	800	26.3	11.4	AF	WF
P4SMAJ6.0A(CA)	6.67	7.37	10	6.00	800	29.1	10.3	AG	WG
P4SMAJ6.5(C)	7.22	8.82	10	6.50	500	24.4	12.3	AH	WH
P4SMAJ6.5A(CA)	7.22	7.98	10	6.50	500	26.8	11.2	AK	WK
P4SMAJ7.0(C)	7.78	9.51	10	7.00	200	22.6	13.3	AL	WL
P4SMAJ7.0A(CA)	7.78	8.60	10	7.00	200	25.0	12.0	AM	WM
P4SMAJ7.5(C)	8.33	10.3	1.0	7.50	100	21.0	14.3	AN	WN
P4SMAJ7.5A(CA)	8.33	9.21	1.0	7.50	100	23.3	12.9	AP	WP
P4SMAJ8.0(C)	8.89	10.9	1.0	8.00	50	20.0	15.0	AQ	WQ
P4SMAJ8.0A(CA)	8.89	9.83	1.0	8.00	50	22.1	13.6	AR	WR
P4SMAJ8.5(C)	9.44	11.5	1.0	8.50	10	18.9	15.9	AS	WS
P4SMAJ8.5(CA)	9.44	10.4	1.0	8.50	10	20.8	14.4	AT	WT
P4SMAJ9.0(C)	10.0	12.2	1.0	9.00	5.0	17.8	16.9	AU	WU
P4SMAJ9.0A(CA)	10.0	11.1	1.0	9.00	5.0	19.5	15.4	AV	WV
P4SMAJ10(C)	11.1	13.6	1.0	10.0	5.0	16.0	18.8	AW	WW
P4SMAJ10A(CA)	11.1	12.3	1.0	10.0	5.0	17.6	17.0	AX	WX
P4SMAJ11(C)	12.2	14.9	1.0	11.0	5.0	14.9	20.1	AY	WY
P4SMJ11A(CA)	12.2	13.5	1.0	11.0	5.0	16.5	18.2	AZ	WZ
P4SMAJ12(C)	13.3	16.3	1.0	12.0	5.0	13.6	22.0	BD	XD
P4SMAJ12A(CA)	13.3	14.7	1.0	12.0	5.0	15.1	19.9	BE	XE
P4SMAJ13(C)	14.4	17.6	1.0	13.0	5.0	12.6	23.8	BF	XF
P4SMAJ13A(CA)	14.4	15.9	1.0	13.0	5.0	14.0	21.5	BG	XG
P4SMAJ14(C)	15.6	19.1	1.0	14.0	5.0	11.6	25.8	BH	XH
P4SMAJ14A(CA)	15.6	17.2	1.0	14.0	5.0	12.9	23.2	BK	XK
P4SMAJ15(C)	16.7	20.4	1.0	15.0	5.0	11.2	26.9	BL	XL
P4SMAJ15A(CA)	16.7	18.5	1.0	15.0	5.0	12.3	24.4	BM	XM
P4SMAJ16(C)	17.8	21.8	1.0	16.0	5.0	10.4	28.8	BN	XN
P4SMAJ16A(CA)	17.8	19.7	1.0	16.0	5.0	11.5	26.0	BP	XP
P4SMAJ17(C)	18.9	23.1	1.0	17.0	5.0	9.80	30.5	BQ	XQ
P4SMAJ17A(CA)	18.9	20.9	1.0	17.0	5.0	10.9	27.6	BR	XR
P4SMAJ18(C)	20.0	24.4	1.0	18.0	5.0	9.30	32.2	BS	XS
P4SMAJ18A(CA)	20.0	22.1	1.0	18.0	5.0	10.3	29.2	BT	XT
P4SMAJ20(C)	22.2	27.1	1.0	20.0	5.0	8.40	35.8	BU	XU
P4SMAJ20A(CA)	22.2	24.5	1.0	20.0	5.0	9.30	32.4	BV	XV
P4SMAJ22(C)	24.4	29.8	1.0	22.0	5.0	7.60	39.4	BW	XW
P4SMAJ22A(CA)	24.4	26.9	1.0	22.0	5.0	8.50	35.5	BX	XX
P4SMAJ24(C)	26.7	32.6	1.0	24.0	5.0	7.00	43.0	BY	XY
P4SMAJ24A(CA)	26.7	29.5	1.0	24.0	5.0	7.70	38.9	BZ	XZ
P4SMAJ26(C)	28.9	35.3	1.0	26.0	5.0	6.40	46.6	CD	YD
P4SMAJ26A(CA)	28.9	31.9	1.0	26.0	5.0	7.10	42.1	CE	YE

RATINGS AND CHARACTERISTIC CURVES P4SMAJ5.0(A)(C)(CA) THRU P4SMAJ170(A)(C)(CA)

TABLE 2

Device Type	Breakdown V_{BR} Voltage at I_T		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P4SMAJ28(C)	31.1	38.0	1.0	28.0	5.0	6.0	50.1	CF	YF
P4SMAJ28A(CA)	31.1	34.4	1.0	28.0	5.0	6.6	45.4	CG	YG
P4SMAJ30(C)	33.3	40.7	1.0	30.0	5.0	5.6	53.5	CH	YH
P4SMAJ30A(CA)	33.3	36.8	1.0	30.0	5.0	6.2	48.4	CK	YK
P4SMAJ33(C)	36.7	44.9	1.0	33.0	5.0	5.1	59.0	CL	YL
P4SMAJ33A(CA)	36.7	40.6	1.0	33.0	5.0	5.6	53.3	CM	YM
P4SMAJ36(C)	40.0	48.9	1.0	36.0	5.0	4.7	64.3	CN	YN
P4SMAJ36A(CA)	40.0	44.2	1.0	36.0	5.0	5.2	58.1	CP	YP
P4SMAJ40(C)	44.4	54.3	1.0	40.0	5.0	4.2	71.4	CQ	YQ
P4SMAJ40A(CA)	44.4	49.1	1.0	40.0	5.0	4.7	64.5	CR	YR
P4SMAJ43(C)	47.8	58.4	1.0	43.0	5.0	3.9	76.7	CS	YS
P4SMAJ43A(CA)	47.8	52.8	1.0	43.0	5.0	4.3	69.4	CT	YT
P4SMAJ45(C)	50.0	61.1	1.0	45.0	5.0	3.7	80.3	CU	YU
P4SMAJ45(CA)	50.0	55.3	1.0	45.0	5.0	4.1	72.7	CV	YV
P4SMAJ48(C)	53.3	65.1	1.0	48.0	5.0	3.5	85.5	CW	YW
P4SMAJ48A(CA)	53.3	58.9	1.0	48.0	5.0	3.9	77.4	CX	YX
P4SMAJ51(C)	56.7	69.3	1.0	51.0	5.0	3.3	91.1	CY	YY
P4SMAJ51A(CA)	56.7	62.7	1.0	51.0	5.0	3.6	82.4	CZ	YZ
P4SMAJ54(C)	60.0	73.3	1.0	54.0	5.0	3.1	96.3	RD	ZD
P4SMAJ54A(CA)	60.0	66.3	1.0	54.0	5.0	3.4	87.1	RE	ZE
P4SMAJ58(C)	64.4	78.7	1.0	58.0	5.0	2.9	103	RF	ZF
P4SMAJ58A(CA)	64.4	71.2	1.0	58.0	5.0	3.2	93.6	RG	ZG
P4SMAJ60(C)	66.7	81.5	1.0	60.0	5.0	2.8	107	RH	ZH
P4SMAJ60A(CA)	66.7	73.7	1.0	60.0	5.0	3.1	96.8	RK	ZK
P4SMAJ64(C)	71.1	86.9	1.0	64.0	5.0	2.6	114	RL	ZL
P4SMAJ64A(CA)	71.1	78.6	1.0	64.0	5.0	2.9	103	RM	ZM
P4SMAJ70(C)	77.8	95.1	1.0	70.0	5.0	2.4	125	RN	ZN
P4SMAJ70A(CA)	77.8	86.0	1.0	70.0	5.0	2.7	113	RP	ZP
P4SMAJ75(C)	83.3	102	1.0	75.0	5.0	2.2	134	RQ	ZQ
P4SMAJ75A(CA)	83.3	92.1	1.0	75.0	5.0	2.5	121	RR	ZR
P4SMAJ78(C)	86.7	106	1.0	78.0	5.0	2.2	139	RS	ZS
P4SMAJ78A(CA)	86.7	95.8	1.0	78.0	5.0	2.4	126	RT	ZT
P4SMAJ85(C)	94.4	115	1.0	85.0	5.0	2.0	151	RU	ZU
P4SMAJ85A(CA)	94.4	104	1.0	85.0	5.0	2.2	137	RV	ZV
P4SMAJ90(C)	100	122	1.0	90.0	5.0	1.9	160	RW	ZW
P4SMAJ90A(CA)	100	111	1.0	90.0	5.0	2.1	146	RX	ZX
PSMAJ100(C)	111	136	1.0	100	5.0	1.7	179	RY	ZY
P4SMAJ100A(CA)	111	123	1.0	100	5.0	1.9	162	RZ	ZZ
P4SMAJ110(C)	122	149	1.0	110	5.0	1.5	196	SD	VD
P4SMAJ110A(CA)	122	135	1.0	110	5.0	1.7	177	SE	VE
P4SMAJ120(C)	133	163	1.0	120	5.0	1.4	214	SF	VF
P4SMAJ120A(CA)	133	147	1.0	120	5.0	1.6	193	SG	VG

TABLE 2

Device Type	Breakdown V_{BR} Voltage at I_T(Voltage)		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P4SMAJ130(C)	144	176	1.0	130.0	5.0	1.3	231.0	SH	VH
P4SMAJ130A(CA)	144	159	1.0	130.0	5.0	1.4	209.0	SK	VK
P4SMAJ150(C)	167	204	1.0	150.0	5.0	1.1	268.0	SL	VL
P4SMAJ150A(CA)	167	185	1.0	150.0	5.0	1.2	243.0	SM	VM
P4SMAJ160(C)	178	218	1.0	160.0	5.0	1.0	287.0	SN	VN
P4SMAJ160A(CA)	178	197	1.0	160.0	5.0	1.2	259.0	SP	VP
P4SMAJ170(C)	189	231	1.0	170.0	5.0	0.99	304.0	SQ	VQ
P4SMAJ170A(CA)	189	209	1.0	170.0	5.0	1.09	275.0	SR	VR