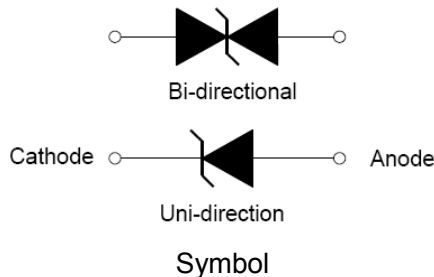


Features

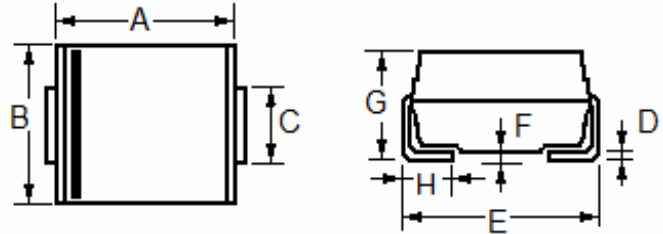
- ◆ Working peak reverse voltage range – 5.0V to 440V.
- ◆ Peak power dissipation 1500W @10 x 1000 us Pulse
- ◆ Low profile package.
- ◆ Excellent clamping capability.
- ◆ Glass passivated junction.
- ◆ Fast response time: typically less than 1 ns for Uni-direction. Less than 5 ns for Bi-direction, from 0 Volts to BV min
- ◆ Typical IR less than 1uA above 10V.
- ◆ Plastic material has UL flammability classification 94V-O
- ◆ RoHS compliant in lead-free versions
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

Mechanical Characteristics

- ◆ CASE: Void-free, JEDEC DO-214AB Molded Plastic over glass passivated junction.
- ◆ Mounting Position: Any
- ◆ Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.
- ◆ Terminal: Solder plated, solderable per MIL-STD-750, Method 2026



DO-214AB(SMC)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	6.60	7.11	0.260	0.280
B	5.59	6.22	0.220	0.245
C	2.90	3.20	0.114	0.126
D	0.125	0.305	0.006	0.012
E	7.75	8.13	0.305	0.320
F	----	0.203	----	0.008
G	2.06	2.62	0.079	0.103
H	0.76	1.52	0.030	0.060

Maximum Ratings And Characteristics@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P _{PPM}	Min 1500	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I _{PPM}	See Table 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method) (Note 2, 3)	I _{FSM}	200	Amps
Operating Junction Temperature Range	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 5.0mm² (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pluses per minute maximum.

Electrical Characteristics@ Tamb 25°C

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V _{RWM} (V)	V _{BR} MIN(V)	V _{BR} MAX(V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMCJ5.0X	SMCJ5.0CX	GDD	BDD	5.0	6.40	7.55	10.0	9.6	156.3	800.0
SMCJ5.0AX	SMCJ5.0CAX	GDE	BDE	5.0	6.40	7.25	10.0	9.2	163.0	800.0
SMCJ6.0X	SMCJ6.0CX	GDF	BDF	6.0	6.67	8.45	10.0	11.4	131.6	800.0
SMCJ6.0AX	SMCJ6.0CAX	GDG	BDG	6.0	6.67	7.67	10.0	10.3	145.6	800.0
SMCJ6.5X	SMCJ6.5CX	GDH	BDH	6.5	7.22	9.14	10.0	12.3	122.0	500.0
SMCJ6.5AX	SMCJ6.5CAX	GDK	BDK	6.5	7.22	8.30	10.0	11.2	133.9	500.0
SMCJ7.0X	SMCJ7.0CX	GDL	BDL	7.0	7.78	9.86	10.0	13.3	112.8	200.0
SMCJ7.0AX	SMCJ7.0CAX	GDM	BDM	7.0	7.78	8.95	10.0	12.0	125.0	200.0
SMCJ7.5X	SMCJ7.5CX	GDN	BDN	7.5	8.33	10.67	1.0	14.3	104.9	100.0
SMCJ7.5AX	SMCJ7.5CAX	GDP	BDP	7.5	8.33	9.58	1.0	12.9	116.3	100.0
SMCJ8.0X	SMCJ8.0CX	GDQ	BDQ	8.0	8.89	11.3	1.0	15.0	100.0	50.0
SMCJ8.0AX	SMCJ8.0CAX	GDR	BDR	8.0	8.89	10.23	1.0	13.6	110.3	50.0
SMCJ8.5X	SMCJ8.5CX	GDS	BDS	8.5	9.44	11.92	1.0	15.9	94.3	20.0
SMCJ8.5AX	SMCJ8.5CAX	GDT	BDT	8.5	9.44	10.82	1.0	14.4	104.2	20.0
SMCJ9.0X	SMCJ9.0CX	GDU	BDU	9.0	10.0	12.6	1.0	16.9	88.8	10.0
SMCJ9.0AX	SMCJ9.0CAX	GDV	BDV	9.0	10.0	11.5	1.0	15.4	97.4	10.0
SMCJ10X	SMCJ10CX	GDW	BDW	10	11.1	14.1	1.0	18.8	79.8	5.0
SMCJ10AX	SMCJ10CAX	GDX	BDX	10	11.1	12.8	1.0	17.0	88.2	5.0
SMCJ11X	SMCJ11CX	GDY	BDY	11	12.2	15.4	1.0	20.1	74.6	5.0
SMCJ11AX	SMCJ11CAX	GDZ	BDZ	11	12.2	14.0	1.0	18.2	82.4	5.0
SMCJ12X	SMCJ12CX	GED	BED	12	13.3	16.9	1.0	22.0	68.2	5.0
SMCJ12AX	SMCJ12CAX	GEE	BEE	12	13.3	15.3	1.0	19.9	75.4	5.0
SMCJ13X	SMCJ13CX	GEF	BEF	13	14.4	18.2	1.0	23.8	63.0	5.0
SMCJ13AX	SMCJ13CAX	GEG	BEG	13	14.4	16.5	1.0	21.5	69.8	5.0
SMCJ14X	SMCJ14CX	GEH	BEH	14	15.6	19.8	1.0	25.8	58.1	5.0
SMCJ14AX	SMCJ14CAX	GEK	BEK	14	15.6	17.9	1.0	23.2	64.7	5.0
SMCJ15X	SMCJ15CX	GEL	BEL	15	16.7	21.1	1.0	26.9	55.8	5.0
SMCJ15AX	SMCJ15CAX	GEM	BEM	15	16.7	19.2	1.0	24.4	61.5	5.0
SMCJ16X	SMCJ16CX	GEN	BEN	16	17.8	22.6	1.0	28.8	52.1	5.0
SMCJ16AX	SMCJ16CAX	GEP	BEP	16	17.8	20.5	1.0	26.0	57.7	5.0
SMCJ17X	SMCJ17CX	GEQ	BEQ	17	18.9	23.9	1.0	30.5	49.2	5.0
SMCJ17AX	SMCJ17CAX	GER	BER	17	18.9	21.7	1.0	27.6	54.3	5.0
SMCJ18X	SMCJ18CX	GES	BES	18	20.0	25.3	1.0	32.2	46.6	5.0
SMCJ18AX	SMCJ18CAX	GET	BET	18	20.0	23.3	1.0	29.2	51.4	5.0
SMCJ20X	SMCJ20CX	GEU	BEU	20	22.2	28.1	1.0	35.8	41.9	5.0
SMCJ20AX	SMCJ20CAX	GEV	BEV	20	22.2	25.5	1.0	32.4	46.3	5.0

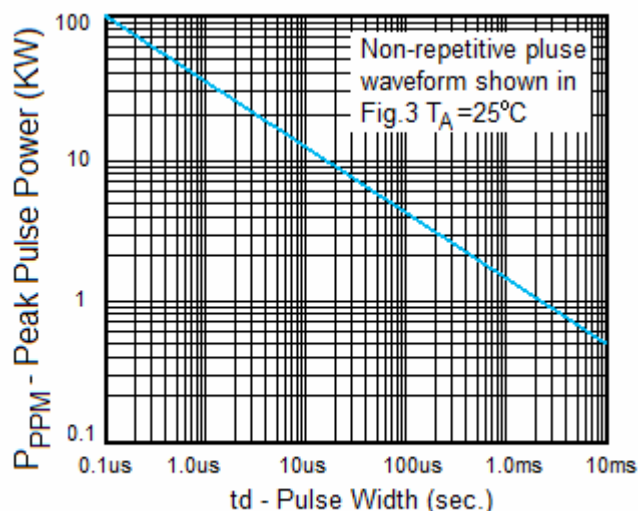
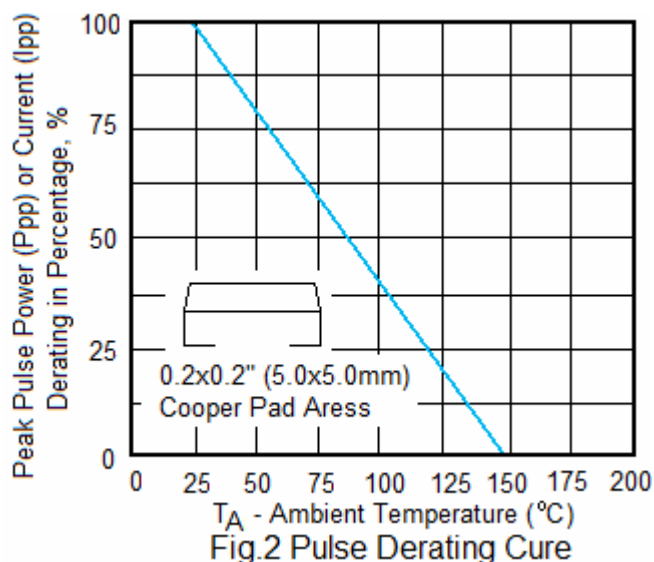
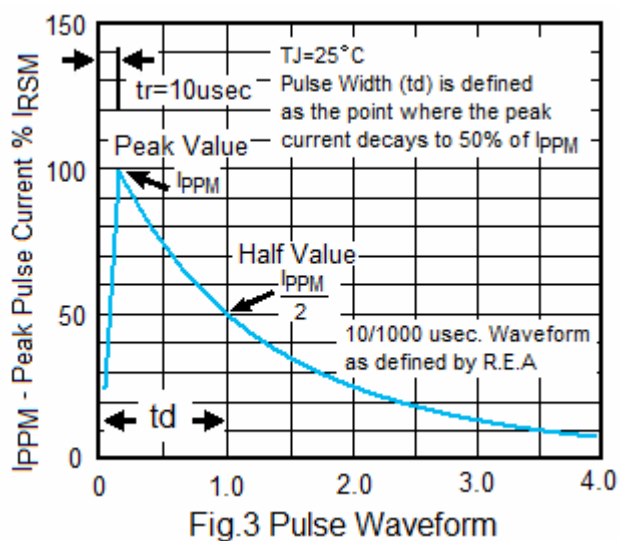
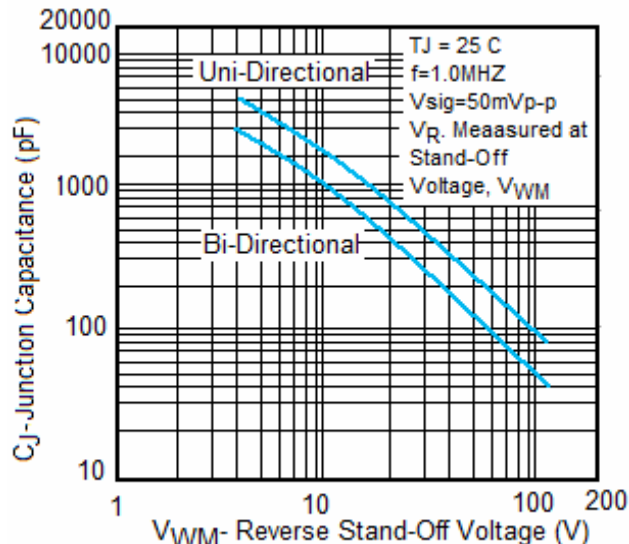
※ For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMCJ22X	SMCJ22CX	GEW	BEW	22	24.4	30.9	1.0	39.4	38.1	5.0
SMCJ22AX	SMCJ22CAX	GEX	BEX	22	24.4	28.0	1.0	35.5	42.3	5.0
SMCJ24X	SMCJ24CX	GEY	BEY	24	26.7	33.8	1.0	43.0	34.9	5.0
SMCJ24AX	SMCJ24CAX	GEZ	BEZ	24	26.7	30.7	1.0	38.9	38.6	5.0
SMCJ26X	SMCJ26CX	GFD	BFD	26	28.9	36.6	1.0	46.6	32.2	5.0
SMCJ26AX	SMCJ26CAX	GFE	BFE	26	28.9	33.2	1.0	42.1	35.6	5.0
SMCJ28X	SMCJ28CX	GFF	BFF	28	31.1	39.4	1.0	50.0	30.0	5.0
SMCJ28AX	SMCJ28CAX	GFG	BFG	28	31.1	35.8	1.0	45.4	33.0	5.0
SMCJ30X	SMCJ30CX	GFH	BFH	30	33.3	42.2	1.0	53.5	28.0	5.0
SMCJ30AX	SMCJ30CAX	GFK	BFK	30	33.3	38.3	1.0	48.4	31.0	5.0
SMCJ33X	SMCJ33CX	GFL	BFL	33	36.7	46.5	1.0	59.0	25.4	5.0
SMCJ33AX	SMCJ33CAX	GFM	BFM	33	36.7	42.2	1.0	53.3	28.1	5.0
SMCJ36X	SMCJ36CX	GFN	BFN	36	40.0	50.7	1.0	64.3	23.3	5.0
SMCJ36AX	SMCJ36CAX	GFP	BFP	36	40.0	46.0	1.0	58.1	25.8	5.0
SMCJ40X	SMCJ40CX	GFQ	BFQ	40	44.4	56.3	1.0	71.4	21.0	5.0
SMCJ40AX	SMCJ40CAX	GFR	BFR	40	44.4	51.1	1.0	64.5	23.3	5.0
SMCJ43X	SMCJ43CX	GFS	BFS	43	47.8	60.5	1.0	76.7	19.6	5.0
SMCJ43AX	SMCJ43CAX	GFT	BFT	43	47.8	54.9	1.0	69.4	21.6	5.0
SMCJ45X	SMCJ45CX	GFU	BFU	45	50.0	63.3	1.0	80.3	18.7	5.0
SMCJ45AX	SMCJ45CAX	GFV	BFV	45	50.0	57.5	1.0	72.7	20.6	5.0
SMCJ48X	SMCJ48CX	GJS	BJS	48	53.3	67.5	1.0	85.5	17.5	5.0
SMCJ48AX	SMCJ48CAX	GFX	BFX	48	53.3	61.3	1.0	77.4	19.4	5.0
SMCJ51X	SMCJ51CX	GJU	BJU	51	56.7	71.8	1.0	91.1	16.5	5.0
SMCJ51AX	SMCJ51CAX	GFZ	BFZ	51	56.7	65.2	1.0	82.4	18.2	5.0
SMCJ54X	SMCJ54CX	GFW	BFW	54	60.0	76.0	1.0	96.3	15.6	5.0
SMCJ54AX	SMCJ54CAX	GGE	BGE	54	60.0	69.0	1.0	87.1	17.2	5.0
SMCJ58X	SMCJ58CX	GFY	BFY	58	64.4	81.6	1.0	103	14.6	5.0
SMCJ58AX	SMCJ58CAX	GGG	BGG	58	64.4	74.1	1.0	93.6	16.0	5.0
SMCJ60X	SMCJ60CX	GGD	BGD	60	66.7	84.5	1.0	107	14.0	5.0
SMCJ60AX	SMCJ60CAX	GGK	BGK	60	66.7	76.7	1.0	96.8	15.5	5.0
SMCJ64X	SMCJ64CX	GGF	BGF	64	71.1	90.1	1.0	114	13.2	5.0
SMCJ64AX	SMCJ64CAX	GGM	BGM	64	71.1	81.8	1.0	103	14.6	5.0
SMCJ70X	SMCJ70CX	GGH	BGH	70	77.8	98.6	1.0	125	12.0	5.0
SMCJ70AX	SMCJ70CAX	GGP	BGP	70	77.8	89.5	1.0	113	13.3	5.0
SMCJ75X	SMCJ75CX	GGL	BGL	75	83.0	105.7	1.0	134	11.2	5.0
SMCJ75AX	SMCJ75CAX	GGR	BGR	75	83.0	95.8	1.0	121	12.4	5.0
SMCJ 78 X	SMCJ 78 CX	GGN	BGN	78	86.0	109.8	1.0	139	10.8	5.0
SMCJ78AX	SMCJ78CAX	GGT	BGT	78	86.0	99.7	1.0	126	11.9	5.0

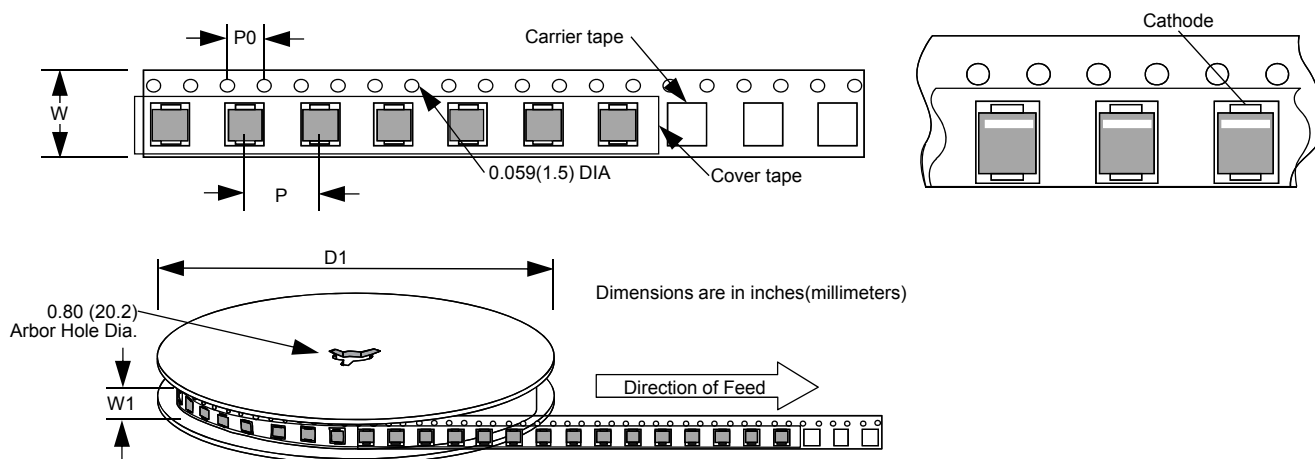
※ For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMCJ85X	SMCJ85CX	GGQ	BGQ	85	94.0	119.2	1.0	151	9.9	5.0
SMCJ85AX	SMCJ85CAX	GGV	BGV	85	94.0	108.2	1.0	137	10.9	5.0
SMCJ90X	SMCJ90CX	GGS	BGS	90	100	126.5	1.0	160	9.4	5.0
SMCJ90AX	SMCJ90CAX	GGX	BGX	90	100	115.5	1.0	146	10.3	5.0
SMCJ100X	SMCJ100CX	GGU	BGU	100	111	141.0	1.0	179	8.4	5.0
SMCJ100AX	SMCJ100CAX	GGZ	BGZ	100	111	128.0	1.0	162	9.3	5.0
SMCJ110X	SMCJ110CX	GGW	BGW	110	122	154.5	1.0	196	7.7	5.0
SMCJ110AX	SMCJ110CAX	GHE	BHE	110	122	140.5	1.0	177	8.5	5.0
SMCJ120X	SMCJ120CX	GGY	BGY	120	133	169.0	1.0	214	7.0	5.0
SMCJ120AX	SMCJ120CAX	GHG	BHG	120	133	153.0	1.0	193	7.8	5.0
SMCJ130X	SMCJ130CX	GHD	BHD	130	144	182.5	1.0	231	6.5	5.0
SMCJ130AX	SMCJ130CAX	GHK	BHK	130	144	165.5	1.0	209	7.2	5.0
SMCJ150X	SMCJ150CX	GHF	BHF	150	167	211.5	1.0	268	5.6	5.0
SMCJ150AX	SMCJ150CAX	GHM	BHM	150	167	192.5	1.0	243	6.2	5.0
SMCJ160X	SMCJ160CX	GHH	BHH	160	178	226.0	1.0	287	5.2	5.0
SMCJ160AX	SMCJ160CAX	GHP	BHP	160	178	205.0	1.0	259	5.8	5.0
SMCJ170X	SMCJ170CX	GHL	BHL	170	189	239.5	1.0	304	4.9	5.0
SMCJ170AX	SMCJ170CAX	GHR	BHR	170	189	217.5	1.0	275	5.5	5.0
SMCJ180X	SMCJ180CX	GHN	BHN	180	200	253.8	1.0	321	4.7	5.0
SMCJ180AX	SMCJ180CAX	GHT	BHT	180	200	230.4	1.0	290	5.2	5.0
SMCJ190X	SMCJ190CX	GHQ	BHQ	190	211	267.9	1.0	339	4.4	5.0
SMCJ190AX	SMCJ190CAX	GHU	BHU	190	211	243.2	1.0	306	4.9	5.0
SMCJ200X	SMCJ200CX	GHW	BHW	200	222	282.0	1.0	356	4.2	5.0
SMCJ200AX	SMCJ200CAX	GHV	BHV	200	222	256.0	1.0	322	4.7	5.0
SMCJ210X	SMCJ210CX	GHY	BHY	210	233	296.1	1.0	375	4.0	5.0
SMCJ210AX	SMCJ210CAX	GHW	BHW	210	233	268.8	1.0	339	4.4	5.0
SMCJ220X	SMCJ220CX	GJD	BJD	220	244	310.2	1.0	392	3.8	5.0
SMCJ220AX	SMCJ220CAX	GHX	BHX	220	244	281.6	1.0	355	4.2	5.0
SMCJ250X	SMCJ250CX	GJF	BJF	250	278	342.5	1.0	447	3.4	5.0
SMCJ250AX	SMCJ250CAX	GHZ	BHZ	250	278	309.0	1.0	403	3.7	5.0
SMCJ300X	SMCJ300CX	GJH	BJH	300	333	411.0	1.0	535	2.8	5.0
SMCJ300AX	SMCJ300CAX	GJE	BJE	300	333	371.0	1.0	484	3.1	5.0
SMCJ350X	SMCJ350CX	GJL	BJL	350	389	479.5	1.0	624	2.4	5.0
SMCJ350AX	SMCJ350CAX	GJG	BJG	350	389	432.0	1.0	565	2.7	5.0
SMCJ400X	SMCJ400CX	GJN	BJN	400	444	548.0	1.0	687	2.2	5.0
SMCJ400AX	SMCJ400CAX	GJK	BJK	400	444	494.0	1.0	645	2.3	5.0
SMCJ 440 X	SMCJ 440 CX	GJQ	BJQ	440	489	602.8	1.0	786	1.9	5.0
SMCJ440AX	SMCJ440CAX	GJM	BJM	440	489	543.0	1.0	710	2.1	5.0

※ For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

Ratings and Characteristic Curves $T_A=25^\circ\text{C}$ unless otherwise noted

Fig. 1 Peak Pulse Power Rating

Fig. 2 Pulse Derating Curve

Fig. 3 Pulse Waveform

Fig. 4 Typical Junction Capacitance

Reel and Tape

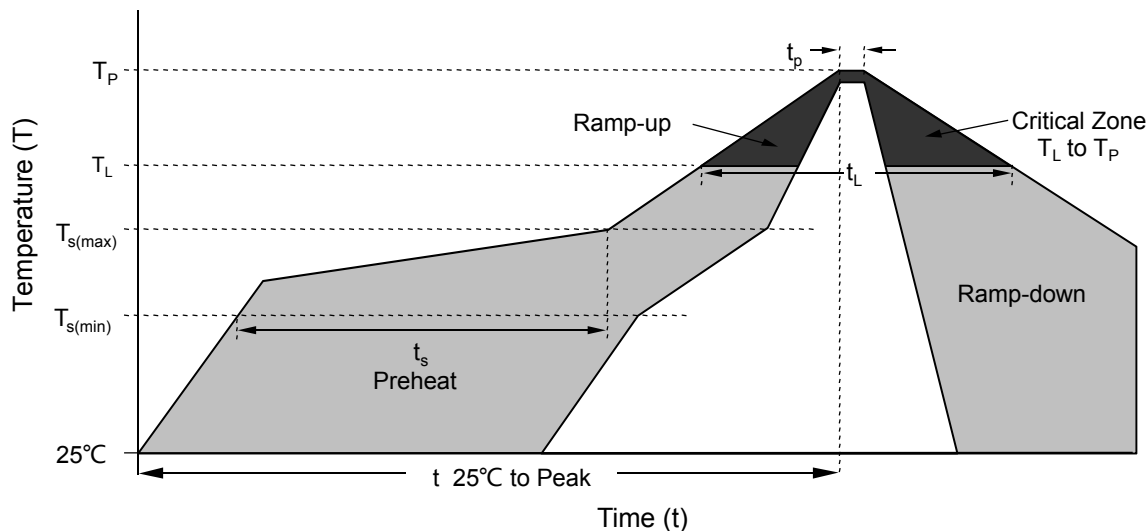


Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.315			8	
P0		0.157			4	
W		0.63			16	
W1		0.646			16.4	
D1		13			330.2	

Packing Options

Package	Packing Description	Packing Quantity
SMC	Tape/Reel, 13" reel	3000

Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C