

1500W Surface Mount Transient Voltage Suppressor

Features

- Stand-off voltage from 5.0 to 440 volts
- Glass passivated junction
- 1500W peak pulse power capability with a 10/1000 μ s waveform, repetition rate(duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0v to VBR
- Low incremental surge resistance, excellent clamping capability
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- This series is UL recognized under component index. File number E315008



Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Value	Unit	Conditions
V_{WM}	Stand-Off Voltage	5.0 to 440	V	
P_{PPM}	Peak Pulse Power Dissipation on 10/1000 μ s Waveform(1) (2)	Minimum 1500	W	
I_{PPM}	Peak Pulse Current on 10/1000 μ s Waveform(1)	See Table	A	
I_{FSM}	Peak Forward Surge Current 8.3ms Single Half Sine-wave, Uni-directional only (2)	200	A	
V_F	Maximum Instantaneous Forward Voltage for Uni-directional only	3.5	V	SMCJ5.0~SMCJ90
		5.0		SMCJ100~SMCJ440
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 to 150	° C	

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^{\circ}C$ per Fig. 2
 (2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal
 (3) Mounted on minimum recommended pad layout

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SMCJ 5.0A - 440CA

Mechanical Data

Case:	JEDEC DO-214AB(SMC) molded plastic
Epoxy:	Meets UL 94V-0 flammability rating
Terminals:	Solder plated, solderable per MIL-STD-750, Method 2026
Polarity:	Cathode indicated by color band except Bi-directional
Mounting Position:	Any
Weight:	0.007 ounce, 0. 21 gram

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

P/N (note3)		Device Marking Code		Stand-Off Voltage	Breakdown Voltage @		Max. Clamping Vltg. @ IPPM	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V WM	
					Test Current					
Uni-Polar	Bi-Polar	Uni	Bi	V WM (V)	V BR		IT(mA)	VC (V)	IPPM (A) (note1)	ID (μA) (note2)
					Min.	Max.				
SMCJ5.0A	SMCJ5.0CA	GDE	GDE	5.0	6.4	7.07	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	GDG	GDG	6.0	6.67	7.37		10.3	145.6	800
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98		11.2	133.9	500
SMCJ7.0A	SMCJ7.0CA	GDM	GDM	7.0	7.78	8.60		12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1.0	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83		13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.4		14.4	104.2	10
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.0	11.1		15.4	97.4	5.0
SMCJ10A	SMCJ10CA	GDX	BDX	10.0	11.1	12.3		17.0	88.2	5.0
SMCJ11A	SMCJ11CA	GDZ	GDZ	11.0	12.2	13.5		18.2	82.4	1.0
SMCJ12A	SMCJ12CA	GEE	BEE	12.0	13.3	14.7		19.9	75.4	1.0
SMCJ13A	SMCJ13CA	GEG	GEG	13.0	14.4	15.9		21.5	69.8	1.0
SMCJ14A	SMCJ14CA	GEK	BEK	14.0	15.6	17.2		23.2	64.7	1.0
SMCJ15A	SMCJ15CA	GEM	BEM	15.0	16.7	18.5		24.4	61.5	1.0
SMCJ16A	SMCJ16CA	GEP	GEP	16.0	17.8	19.7		26.0	57.7	1.0
SMCJ17A	SMCJ17CA	GER	GER	17.0	18.9	20.9		27.6	54.3	1.0

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SMCJ 5.0A - 440CA

P/N (note3)		Device Marking Code		Stand-Off Voltage	Breakdown Voltage Test Current @		Max. Clamping Vltg. @ IPPM	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V WM	
					V BR					
Uni-Polar	Bi-Polar	Uni	Bi	V WM (V)	Min.	Max.	IT(mA)	Vc (V)	IPPM (A) (note1)	ID (μA) (note2)
SMCJ18A	SMCJ18CA	GET	BET	18.0	20.0	22.1		1.0	29.2	51.4
SMCJ20A	SMCJ20CA	GEV	BEV	20.0	22.2	24.5	32.4		46.3	1.0
SMCJ22A	SMCJ22CA	GEX	BEX	22.0	24.4	26.9	35.5		42.3	1.0
SMCJ24A	SMCJ24CA	GEZ	BEZ	24.0	26.7	29.5	38.9		38.6	1.0
SMCJ26A	SMCJ26CA	GFE	BFE	26.0	28.9	31.9	42.1		35.6	1.0
SMCJ28A	SMCJ28CA	GFG	BFG	28.0	31.1	34.4	45.4		33.0	1.0
SMCJ30A	SMCJ30CA	GFK	BFK	30.0	33.3	36.8	48.4		31.0	1.0
SMCJ33A	SMCJ33CA	GFM	BFM	33.0	36.7	40.6	53.3		28.1	1.0
SMCJ36A	SMCJ36CA	GFP	BFP	36.0	40.0	44.2	58.1		25.8	1.0
SMCJ40A	SMCJ40CA	GFR	BFR	40.0	44.4	49.1	64.5		23.3	1.0
SMCJ43A	SMCJ43CA	GFT	BFT	43.0	47.8	52.8	69.4		21.6	1.0
SMCJ45A	SMCJ45CA	GFV	GFV	45.0	50.0	55.3	72.7		20.6	1.0
SMCJ48A	SMCJ48CA	GFX	GFX	48.0	53.3	58.9	77.4		19.4	1.0
SMCJ51A	SMCJ51CA	GFZ	GFZ	51.0	56.7	62.7	82.4		18.2	1.0
SMCJ54A	SMCJ54CA	GGE	GGE	54.0	60.0	66.3	87.1		17.2	1.0
SMCJ58A	SMCJ58CA	GGG	GGG	58.0	64.4	71.2	93.6		16.0	1.0
SMCJ60A	SMCJ60CA	GGK	GGK	60.0	66.7	73.7	96.8		15.5	1.0
SMCJ64A	SMCJ64CA	GGM	GGM	64.0	71.1	78.6	103		14.6	1.0
SMCJ70A	SMCJ70CA	GGP	GGP	70.0	77.8	86.0	113		13.3	1.0
SMCJ75A	SMCJ75CA	GGR	GGR	75.0	83.3	92.1	121		12.4	1.0
SMCJ78A	SMCJ78CA	GGT	GGT	78.0	86.7	95.8	126		11.9	1.0
SMCJ85A	SMCJ85CA	GGV	GGV	85.0	94.4	104	137		10.9	1.0
SMCJ90A	SMCJ90CA	GGX	GGX	90.0	100	111	146		10.3	1.0
SMCJ100A	SMCJ100CA	GGZ	GGZ	100	111	123	162		9.3	1.0
SMCJ110A	SMCJ110CA	GHE	GHE	110	122	135	177		8.5	1.0
SMCJ120A	SMCJ120CA	GHG	GHG	120	133	147	193	7.8	1.0	

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P/N (note3)		Device Marking Code		Stand-Off Voltage	Breakdown Voltage @ Test Current		Max. Clampi ng Vltg. @ I _{PPM}	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V _{WM}	
					V _{BR}					I _T (mA)
Uni-Polar	Bi-Polar	Uni	Bi	V _{WM} (V)	Min.	Max.		V _C (V)	I _{PPM} (A) (note1)	
SMCJ130A	SMCJ130CA	GHK	GHK	130	144	159	1.0	209	7.2	1.0
SMCJ150A	SMCJ150CA	GHM	GHM	150	167	185		243	6.2	1.0
SMCJ160A	SMCJ160CA	GHP	GHP	160	178	197		259	5.8	1.0
SMCJ170A	SMCJ170CA	GHR	GHR	170	189	209		275	5.5	1.0
SMCJ180A	SMCJ180CA	GHT	BHT	180	201	222		292	5.1	1.0
SMCJ200A	SMCJ200CA	GHV	BHV	200	224	247		324	4.6	1.0
SMCJ220A	SMCJ220CA	GHX	BHX	220	246	272		356	4.2	1.0
SMCJ250A	SMCJ250CA	GHZ	BHZ	250	279	309		405	3.7	1.0
SMCJ300A	SMCJ300CA	GJE	BJE	300	335	371		486	3.1	1.0
SMCJ350A	SMCJ350CA	GJG	BJG	350	391	432		567	2.6	1.0
SMCJ400A	SMCJ400CA	GJK	BJK	400	447	494		648	2.3	1.0
SMCJ440A	SMCJ440CA	GJM	BJM	440	492	543		713	2.1	1.0

- Note:** 1. Surge current waveform per Fig. 3 and derate per Fig. 2
2. For Bi-directional types with V_{WM} of 10 volts and less, the I_D limit is doubled.
3. C suffix for Bidirectional use, A suffix for 5% tolerance.

Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

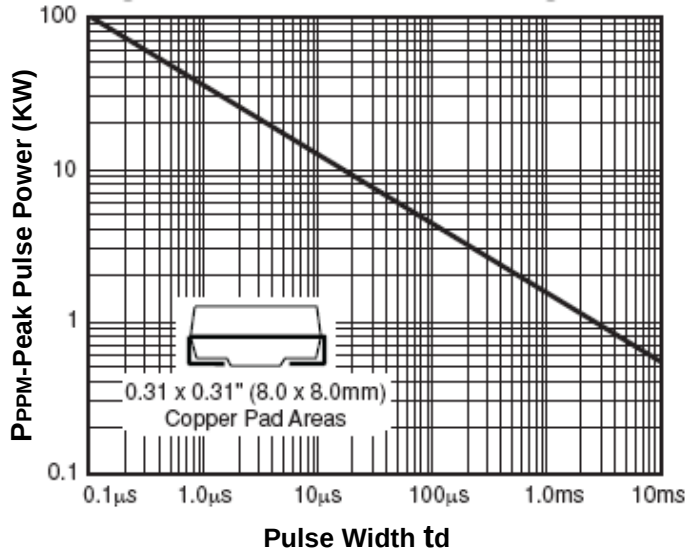
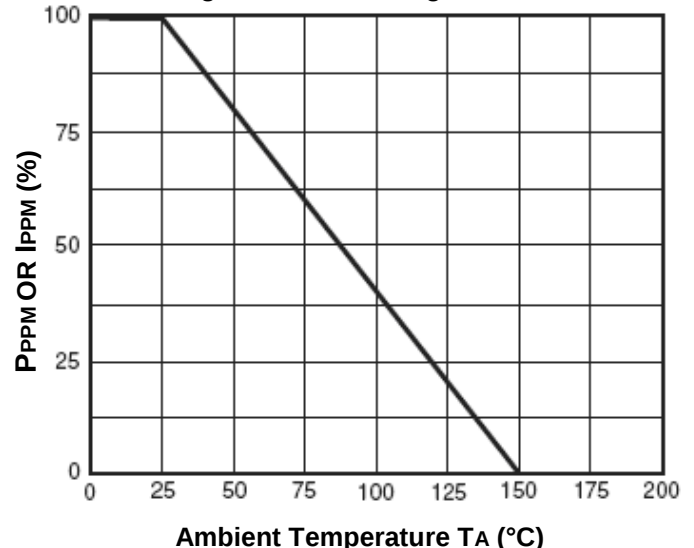


Fig.2- Pulse Derating Curve



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Fig.3- Pulse Waveform

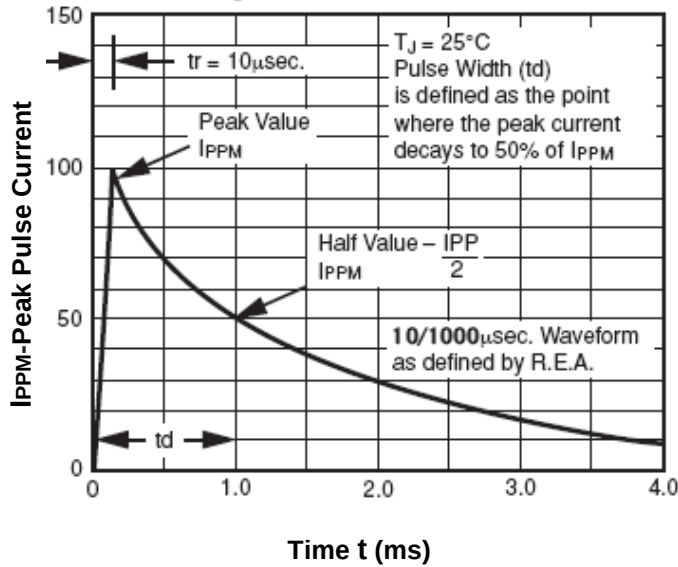


Fig.4- Max. Non-Repetitive Forward Surge Current Uni-directional only

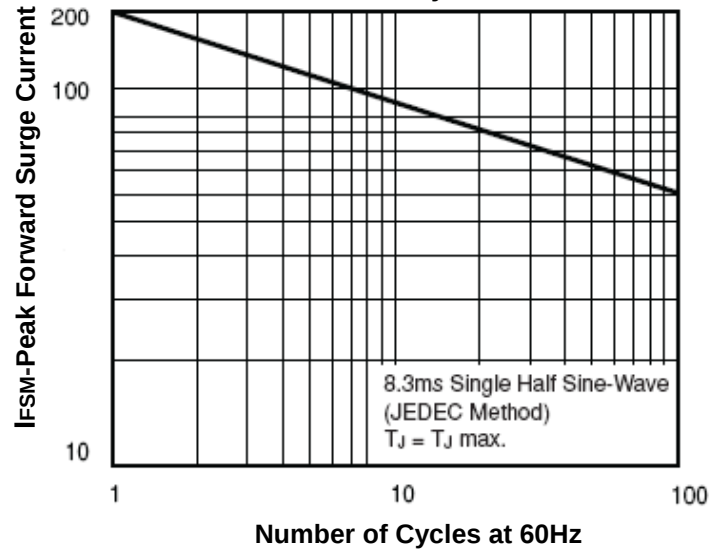
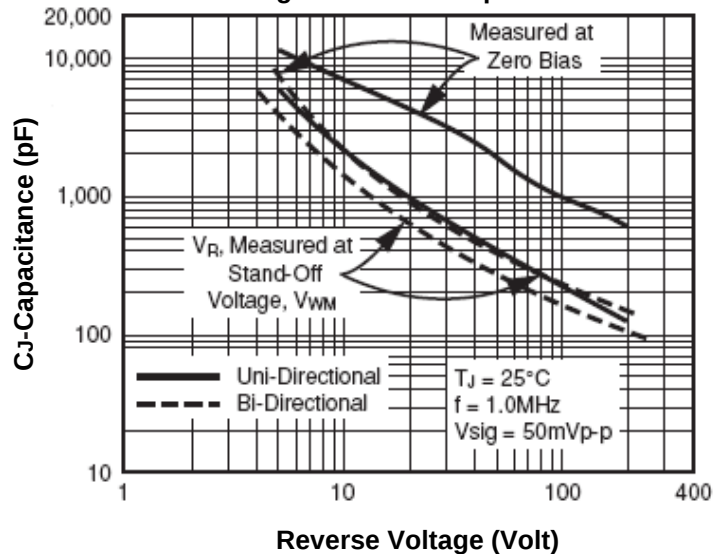


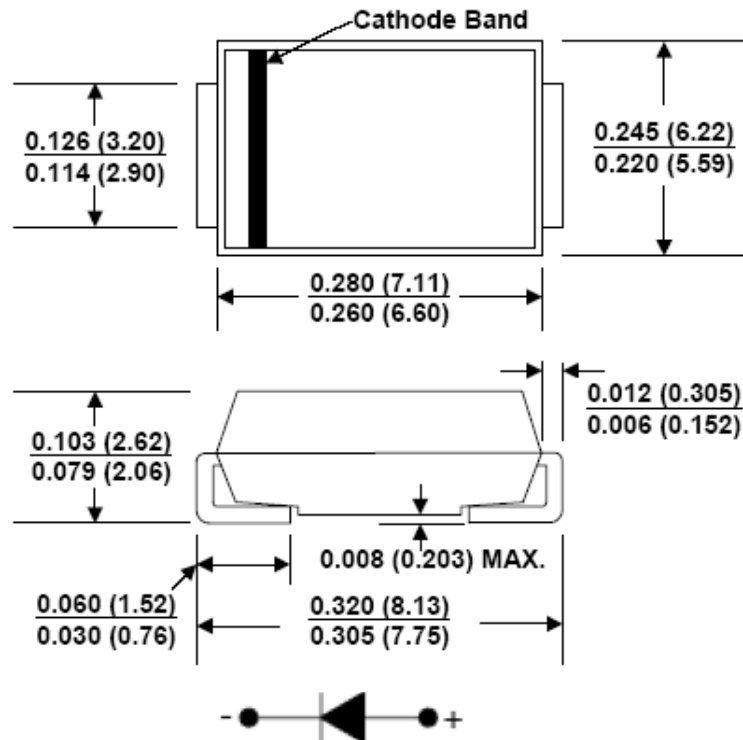
Fig.5- Junction Capacitance



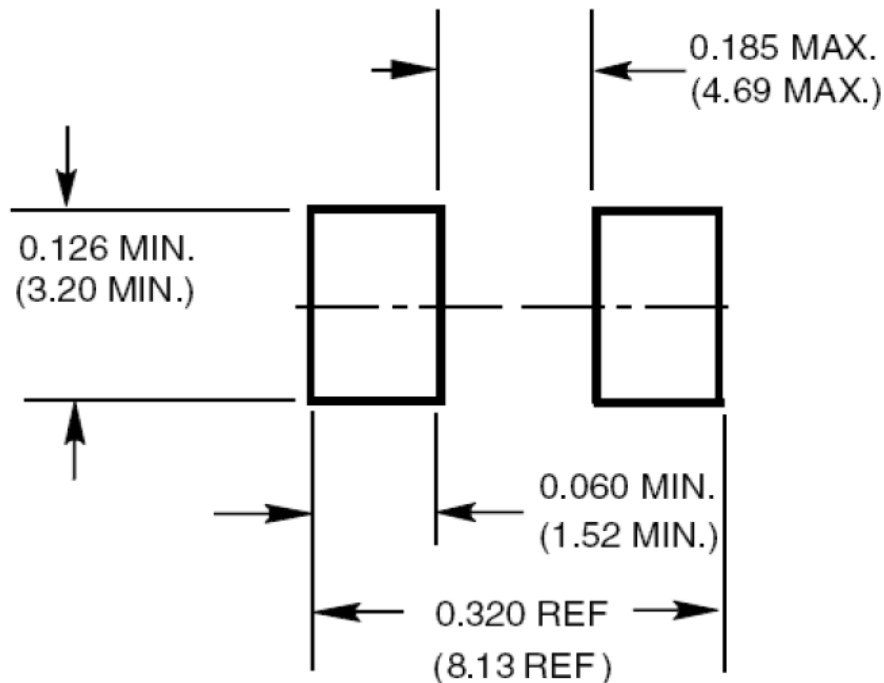
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Dimensions in inch (mm)



Soldering Pad in inch (mm)



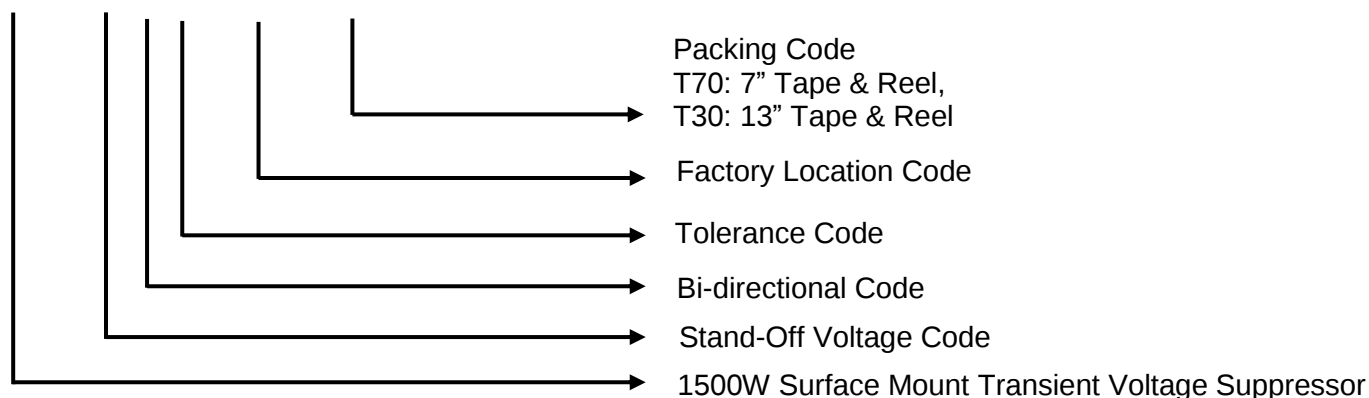
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SMCJ 5.0A - 440CA

Ordering Information

SMCJ XX C A - XX - XX



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