

SMC

FrelTec
Transient Voltage Suppressors

FrelTec GmbH

Mathildenstr, 10A
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Germany

Transient Voltage Suppressors
SMC



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SPECIFICATION

63B	SMCJ__xx	SMCX	L03
Type	Type	Package	Packing
63B: Transient Voltage Suppressors	SMCJ__	SMC	L03: tape and Reel(embossed tape) for 3000 pc (13'reel)

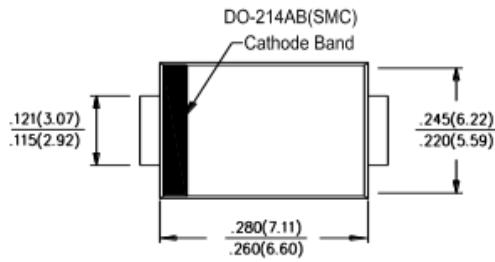
All products according to RoHS (2015/863/EU)



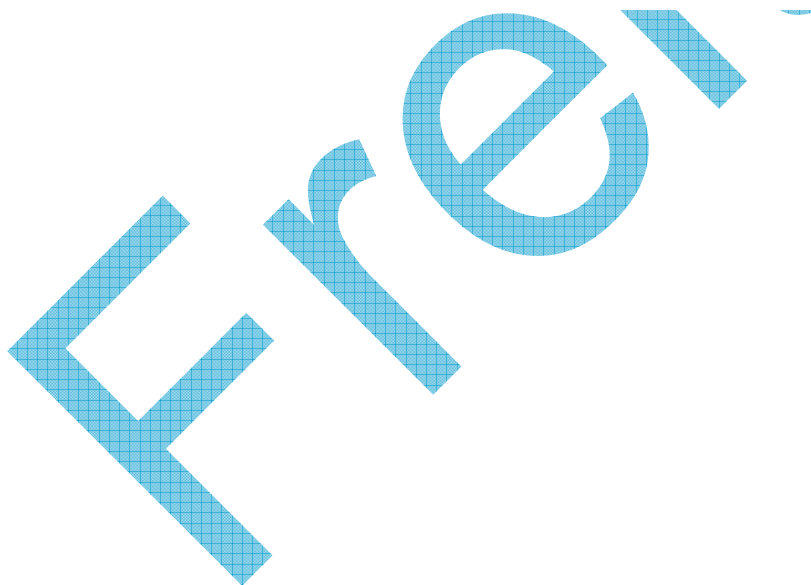
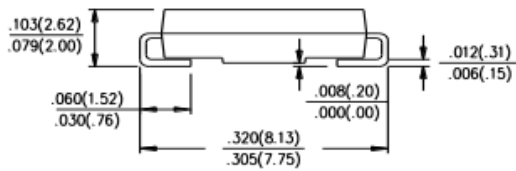
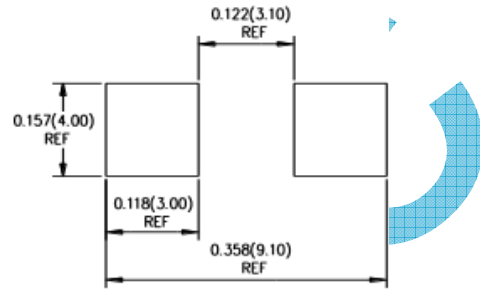
PACKAGE OUTLINE

Package Outline Dimensions

in inches (millimeters)



Mounting Pad Layout



MAXIMUM RATING @ Ta=25°C unless otherwise specified

Maximum Ratings and Thermal Characteristics (TA = 25 °C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000 µs Waveform (Fig.1)(Note1)(Note2)	P _{PPM}	Minimum 1500	W
Peak pulse current with a 10/1000us waveform(Note1)	I _{PPM}	See Next Table	A
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note3)	I _{FSM}	200	A
Typical Thermal Resistance Junction to Lead(Note2)	R _{θJL}	15	°C /W
Typical Thermal Resistance Junction to Ambient(Note2)	R _{θJA}	75	°C /W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

Notes:

1. Non-repetitive current pulse , per Fig. 3 and derated above TA = 25°C per Fig. 2.
2. Mounted on copper pad area of 0.31x0.31" (8.0 x 8.0mm) to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT ¹		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A) ²	Maximum Reverse Leakage ID @ VR (μA) ³
		UNI	BI		Min	Max				
SMCJ5A	SMCJ5CA	GDE	BDE	5,0	6,40	7,07 ⁴	10	9,2	163,0	1000,0
SMCJ6A	SMCJ6CA	GDG	BDG	6,0	6,67	7,37	10	10,3	145,6	1000,0
SMCJ6V5A	SMCJ6V5CA	GDK	BDK	6,5	7,22	7,98	10	11,2	133,9	500,0
SMCJ7A	SMCJ7CA	GDM	BDM	7,0	7,78	9,60	10	12,0	125,0	200,0
SMCJ7V5A	SMCJ7V5CA	GDP	BDP	7,5	8,33	9,21	1,0	12,9	116,3	100,0
SMCJ8A	SMCJ8CA	GDR	BDR	8,0	8,89	9,83	1,0	13,6	110,3	50,0
SMCJ8V5A	SMCJ8V5CA	GDT	BDT	8,5	9,44	10,4	1,0	14,4	104,2	20,0
SMCJ9A	SMCJ9CA	GDV	BDV	9,0	10,0	11,1	1,0	15,4	97,4	10,0
SMCJ10A	SMCJ10CA	GDX	BDX	10	11,1	12,3	1,0	17,0	88,2	5,0
SMCJ11A	SMCJ11CA	GDZ	BDZ	11	12,2	13,5	1,0	18,2	82,4	5,0
SMCJ12A	SMCJ12CA	GEE	BEE	12	13,3	14,7	1,0	19,9	75,4	5,0
SMCJ13A	SMCJ13CA	GEG	BEG	13	14,4	15,9	1,0	21,5	69,8	1,0
SMCJ14A	SMCJ14CA	GEK	BEK	14	15,6	17,2	1,0	23,2	64,7	1,0
SMCJ15A	SMCJ15CA	GEM	BEM	15	16,7	18,5	1,0	24,4	61,5	1,0
SMCJ16A	SMCJ16CA	GEP	BEP	16	17,8	19,7	1,0	26,0	57,7	1,0
SMCJ17A	SMCJ17CA	GER	BER	17	18,9	20,9	1,0	27,6	54,3	1,0
SMCJ18A	SMCJ18CA	GET	BET	18	20,0	22,1	1,0	29,2	51,4	1,0
SMCJ20A	SMCJ20CA	GEV	BEV	20	22,2	24,5	1,0	32,4	46,3	1,0
SMCJ22A	SMCJ22CA	GEX	BEX	22	24,4	26,9	1,0	35,5	42,3	1,0
SMCJ24A	SMCJ24CA	GEZ	BEZ	24	26,7	29,5	1,0	38,9	38,6	1,0
SMCJ26A	SMCJ26CA	GFE	BFE	26	28,9	31,9	1,0	42,1	35,6	1,0
SMCJ28A	SMCJ28CA	GFG	BFG	28	31,1	34,4	1	45,4	33	1
SMCJ30A	SMCJ30CA	GFK	BFK	30	33,3	36,8	1	48,4	31	1
SMCJ33A	SMCJ33CA	GFM	BFM	33	36,7	40,6	1	53,3	28,1	1
SMCJ36A	SMCJ36CA	GFP	BFP	36	40	44,4	1	58,1	25,8	1
SMCJ40A	SMCJ40CA	GFR	BFR	40	44,4	49,1	1	64,5	23,3	1
SMCJ43A	SMCJ43CA	GFT	BFT	43	47,8	52,8	1	69,4	21,6	1
SMCJ45A	SMCJ45CA	GFV	BFV	45	50	55,3	1	72,7	20,6	1
SMCJ48A	SMCJ48CA	GFX	BFX	48	53,3	58,9	1	77,4	19,4	1
SMCJ51A	SMCJ51CA	GFZ	BFZ	51	56,7	62,7	1	82,4	18,2	1
SMCJ54A	SMCJ54CA	GGE	BGE	54	60	66,3	1	87,1	17,2	1
SMCJ58A	SMCJ58CA	GGG	BGG	58	64,4	71,2	1	93	16	1
SMCJ60A	SMCJ60CA	GGK	BGK	60	66,7	73,7	1	96	15,5	1
SMCJ64A	SMCJ64CA	GGM	BGM	64	71,1	78,6	1	103	14,6	1
SMCJ70A	SMCJ70CA	GGP	BGP	70	77,8	96	1	113	13,3	1
SMCJ75A	SMCJ75CA	GGR	BGR	75	83,3	92,1	1	121	12,4	1
SMCJ78A	SMCJ78CA	GGT	BGT	78	86,7	95,8	1	126	11,9	1
SMCJ85A	SMCJ85CA	GGV	BGV	85	94,4	104	1	137	10,9	1
SMCJ90A	SMCJ90CA	GGX	BGX	90	100	111	1	146	10,3	1
SMCJ100A	SMCJ100CA	GGZ	BGZ	100	111	123	1	162	9,3	1

Notes:

- 1,VBR measured after IT applied for 10~50ms square wave pulse or equivalent
- 2,Surge current waveform per Fig,3 and derate per Fig,2
- 3,For bi-directional types having Vwm of 10 volts and less,the ID limit is doubled
- 4,For the bi-directional SMCJ5,0CA,the maximum VBR is 7,25V

Electrical Characteristics (TA = 25 °C unless otherwise noted)										
Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT ¹		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A) ²	Maximum Reverse Leakage IR @ VR (μA) ³
		UNI	BI		Min	Max				
SMCJ110A	SMCJ110CA	GHE	BHE	110	122	135	1	177	8.5	1
SMCJ120A	SMCJ120CA	GHG	BHG	120	133	147	1	193	7.8	1
SMCJ130A	SMCJ130CA	GHK	BHK	130	144	159	1	209	7.2	1
SMCJ150A	SMCJ150CA	GHM	BHM	150	167	185	1,0	243	6,2	1,0
SMCJ160A	SMCJ160CA	GHP	BHP	160	178	197	1,0	259	5,8	1,0
SMCJ170A	SMCJ170CA	GHR	BHR	170	189	209	1,0	275	5,5	1,0
SMCJ180A	SMCJ180CA	GHT	BHT	180	201	222	1,0	292	5,0	1,0
SMCJ200A	SMCJ200CA	GHV	BHV	180	224	247	1,0	324	4,6	1,0
SMCJ220A	SMCJ220CA	GHX	BHX	220	246	272	1,0	356	4,2	1,0
SMCJ250A	SMCJ250CA	GHZ	BHZ	250	279	309	1,0	405	3,7	1,0
SMCJ300A	SMCJ300CA	GJE	BJE	300	335	371	1,0	486	3,1	1,0
SMCJ350A	SMCJ350CA	GJG	BJG	350	391	432	1,0	567	2,6	1,0
SMCJ400A	SMCJ400CA	GJK	BJK	400	447	494	1,0	648	2,3	1,0
SMCJ440A	SMCJ440CA	GJM	BJM	440	492	543	1,0	713	2,1	1,0

Notes:

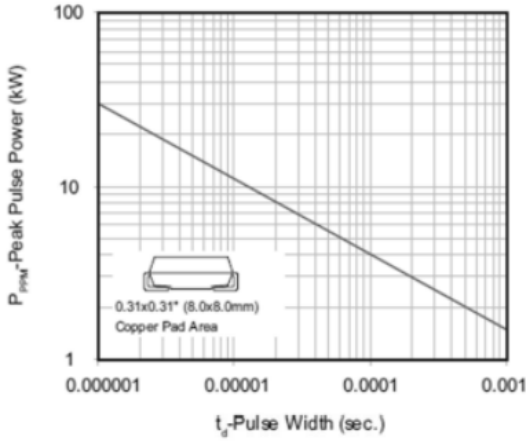
- 1,VBR measured after IT applied for 10~50ms square wave pulse or equivalent
- 2, Surge current waveform per Fig.3 and derate per Fig.2
- 3, For bi-directional types having Vwm of 10volts and less, the ID limit is doubled
4. For the bi-directional SMCJ5,0CA, the maximum VBR IS 7,25V

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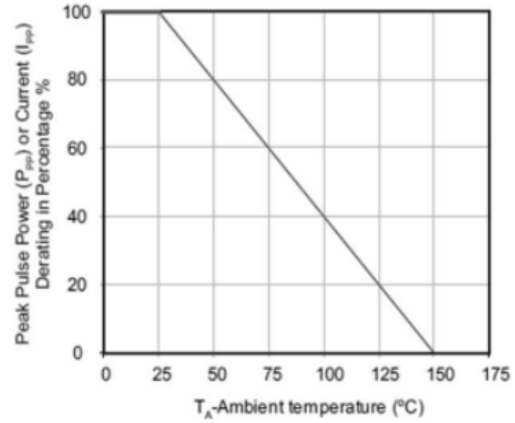
Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

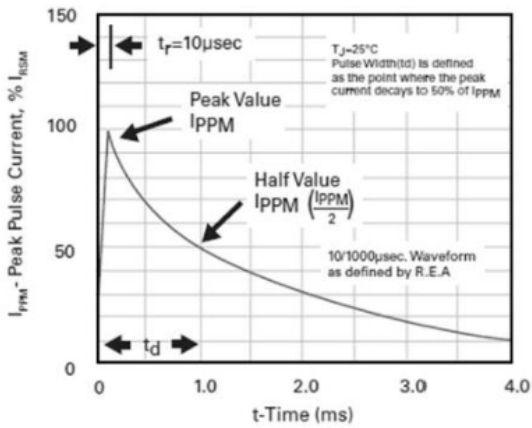
Peak Pulse Power Rating



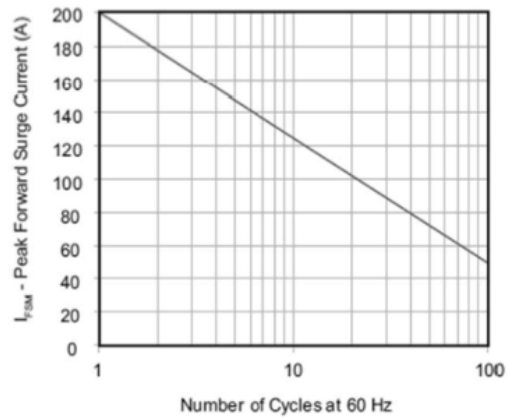
Pulse Derating Curve



Pulse Waveform



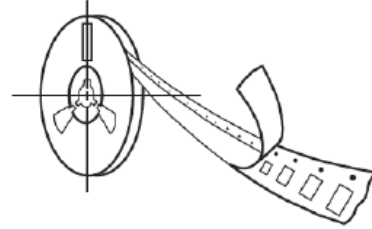
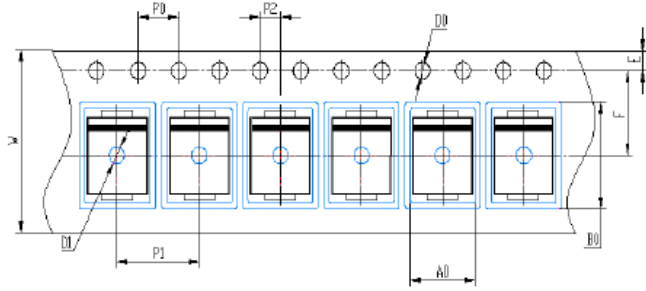
Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only



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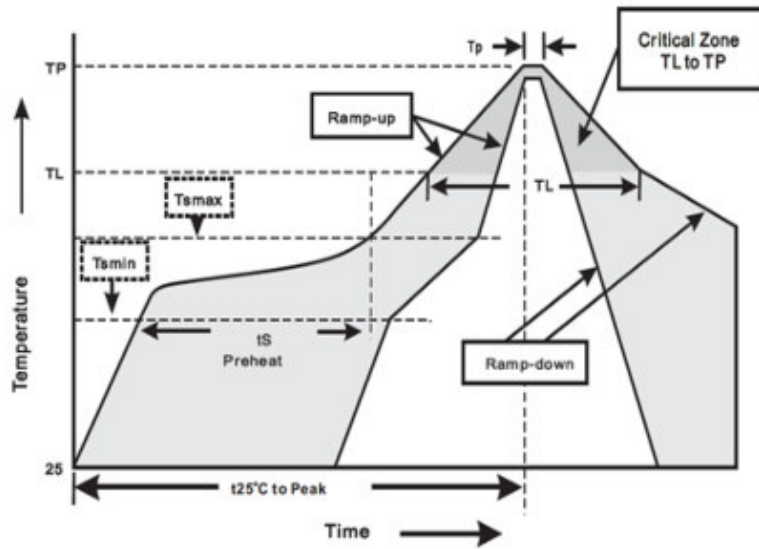
Tape & Reel Specification



Symbo	SMC (mm)
W	16 ± 0.2
E	1.75 ± 0.1
F	7.5 ± 0.05
D0	1.5 ± 0.1
D1	1.50 +0.1/-0
P0	4.0 ± 0.1
P1	8.0 ± 0.1
P2	2.0 ± 0.05
A0	6.22 ± 0.1
B0	8.31 ± 0.1

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Soldering Parameters



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Stock period

The performance of these products, including the solderability, is guaranteed for 12 month, provided that they remain packed as they were when delivered and stored at a temperature of 20-30°C and a relative humidity 20-60%RH

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