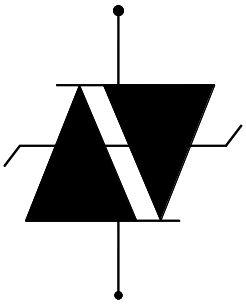
PxxxxSC MC Series

Thyristors Solid Protection Device Bidirectional transient voltage suppressors

Features

- For surface mounted applications to optimize board space
- Low profile package
- Bidirectional crowbar protection
- Low leakage current : I = 5uA max
- Low on-state voltage
- Low Capacitance
- Response Time is < 1us
- YD/T 950 IEC 61000-4-5
- YD/T 993 ITU K.20/21
- YD/T 1082 TIA-968-A
- GR 1089 Intra-building
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant
- WeiPan technology

SMB



Schematic Diagram

Ordering Information

Device	Qty per Reel	Reel Size
PxxxxSC	2500	13 Inch

Maximum Ratings and Electrical Characteristics

Symbol	Parameter		Value	Unit
I_{PP}	Non-repetitive peak pulse current	10/1000 us 5/310 us 8/20 us	100 150 400	A
V_{PP}	Non-repetitive peak pulse voltage	10/700us	6000	V
V_{ESD}	ESD Rating per IEC61000-4-2： Contact Air		8 15	KV
Ts	Storage temperature range		-40 to +150	℃
Tj	Maximum junction temperature		150	℃

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

**Other voltages may be available upon request.*

Electrical Parameters (T_{amb}=25℃)

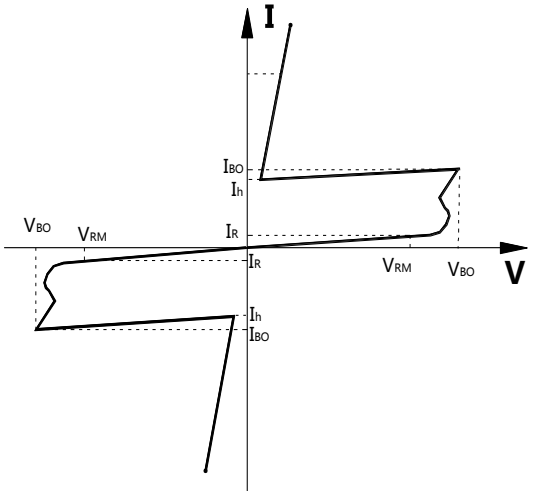
Type	V_{RM}	I_{RM}	V_{BO}	I_{BO}	V_T	I_T	C_O	I_H
	Min.	Max.		Max.	Max.		Typ.	Typ.
	V	μA	V	mA	V	A	pF	mA
P0080SC MC	6	5	25	800	4	2.2	50	100
P0300SC MC	25	5	40	800	4	2.2	50	100
P0640SC MC	58	5	77	800	4	2.2	150	85
P0720SC MC	65	5	88	800	4	2.2	150	85
P0900SC MC	75	5	98	800	4	2.2	150	70
P1100SC MC	90	5	130	800	4	2.2	150	70
P1300SC MC	120	5	160	800	4	2.2	150	70
P1500SC MC	140	5	180	800	4	2.2	150	55
P1800SC MC	170	5	220	800	4	2.2	150	55
P2000SC MC	180	5	220	800	4	2.2	150	55
P2300SC MC	190	5	260	800	4	2.2	150	50
P2600SC MC	220	5	300	800	4	2.2	150	50
P3100SC MC	275	5	350	800	4	2.2	150	45
P3500SC MC	320	5	400	800	4	2.2	150	45
P4000SC MC	360	5	460	800	4	2.2	150	45
P4500SC MC	460	5	540	800	4	2.2	150	45
P5000SC MC	500	5	600	800	4	2.2	150	45

Notes:

• All measurements are made at an ambient temperature of 25 ℃. I_{PP} applies to -40 ℃ through +85 ℃ temperature range.

• Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias and is typical value.

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{BO}	Switching Voltage
I_{BO}	Breakover current
I_{RM}	Leakage current at V_{RM}
I_{PP}	Peak pulse current
I_H	Holding current
V_T	On-state Voltage at I_T
C_O	Off-state Capacitance



Typical electrical characterist applications

Rating and Characteristics Curves

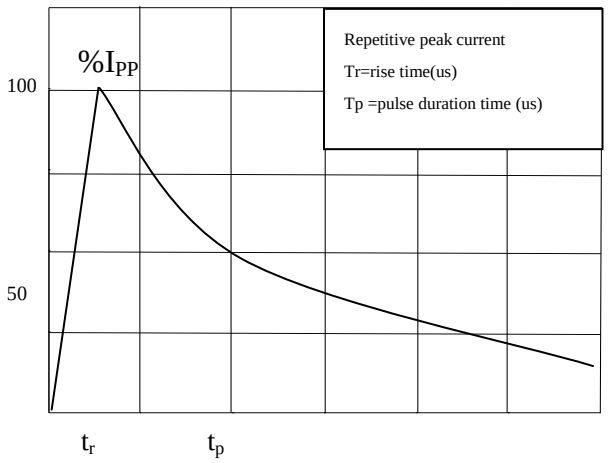


Fig.1 Pulse Waveform (5/310us)

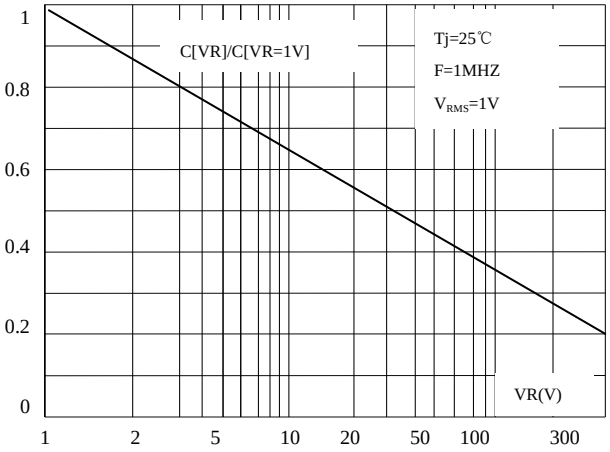


Fig. 2 Relation Variation Of Junction Capacitance Versus Reverse Voltage Applied (Typical Values)

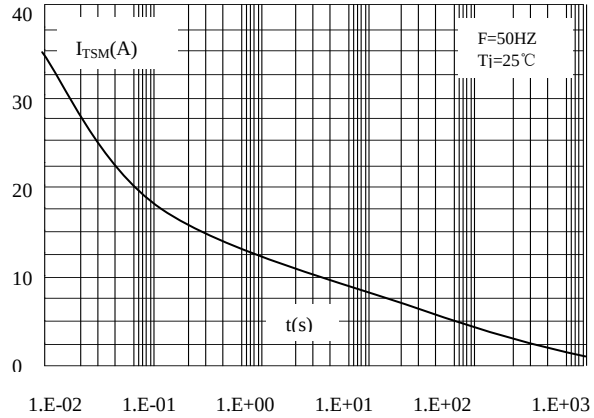


Fig.3 Non Repetitive Surge Peek On-State Current Versus Overload Duration

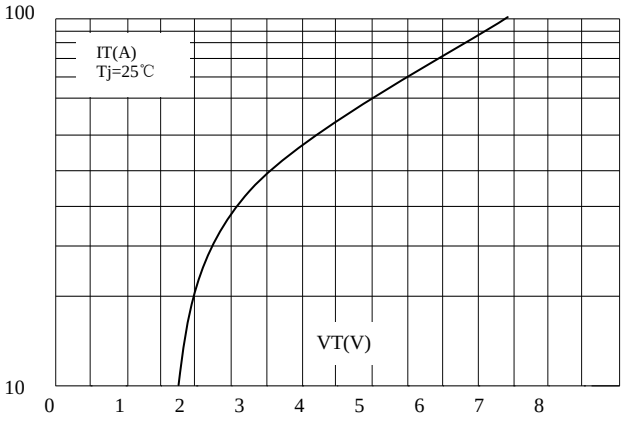


Fig.4 On-State Voltage Versus On-State Current (Typical Values)

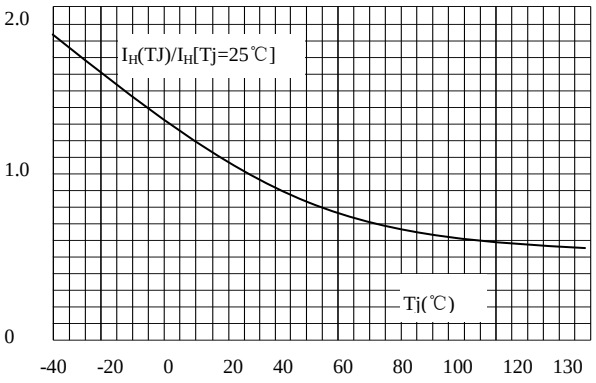


Fig.5 Relative Variation of Hold Current Versus Junction Temperature

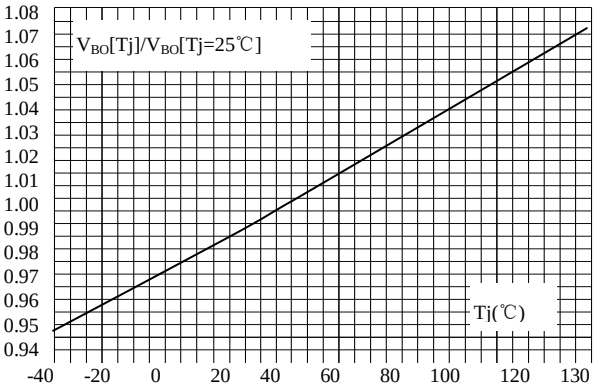


Fig.6 Relative Variation of Break Over Voltage Versus Junction Temperature

Typical electrical characterist applications

Rating and Characteristics Curves

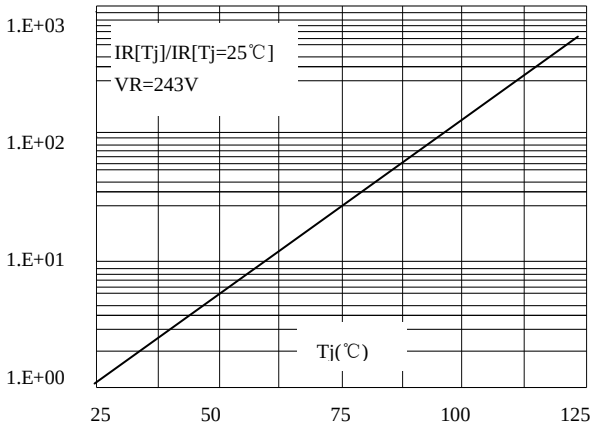


Fig.7 Relative Variation Of Leakage Current Versus Reverse Voltage (Typical Values)

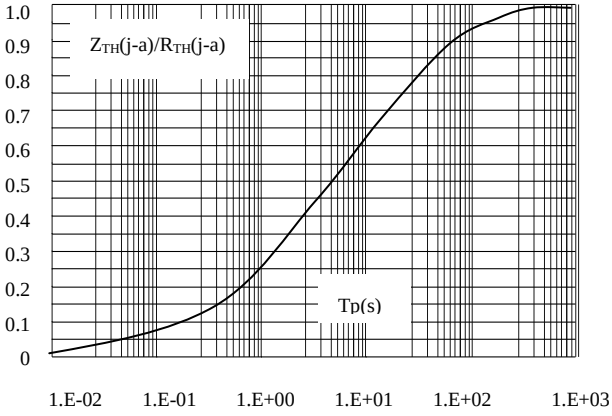


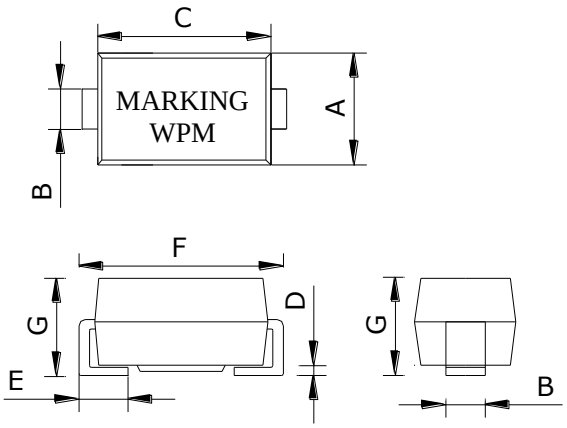
Fig.8 Variation Of Thermal Impedance Junction To Ambient Versus Pulse Duration

Package Information

SMB

Mechanical Data

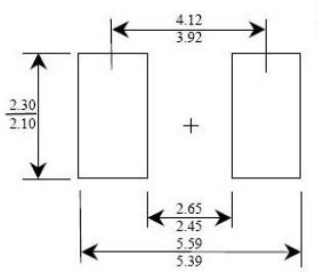
- Case: SMB
- Case Material: Molded Plastic. UL Flammability



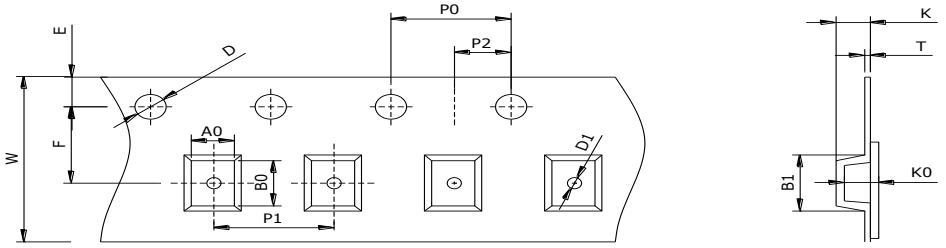
DIM	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.30	3.60	3.94	0.130	0.142	0.155
B	1.80	2.00	2.21	0.071	0.079	0.087
C	4.05	4.45	5.30	0.159	0.175	0.209
D	0.051	0.20	0.203	0.002	0.007	0.008
E	0.76	1.14	1.52	0.030	0.045	0.060
F	5.08	5.25	5.59	0.200	0.207	0.220
G	2.05	2.30	2.45	0.081	0.091	0.096

SMB

Recommended Pad outline



SMB Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SMB	5.50×3.80×2.40	5.70×4.00×2.70	12mm	330mm(13inch)	2500	4mm	8mm
D	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	5.5mm	2.45mm	0.5mm	12mm	