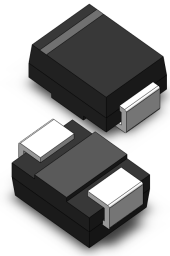
SUNMATE SEMICONDUCTORCO · LIMITED

TB0640L - TB3500L

THYRISTOR SURGE SUPPRESSORS

Features

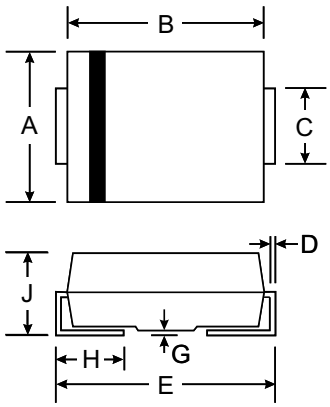
- 30A Peak Pulse Current @ 10/1000 s
- 150A Peak Pulse Current @ 8/20 s
- 58 - 320V Stand-Off Voltages
- Oxide-Glass Passivated Junction
- Bi-Directional Protection In a Single Device
- High Off-State impedance and Low On-State Voltage



Mechanical Data

- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)

RoHS COMPLIANT



SMB(DO-214AA)		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.70
C	1.91	2.21
D	0.15	0.31
E	5.00	5.59
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

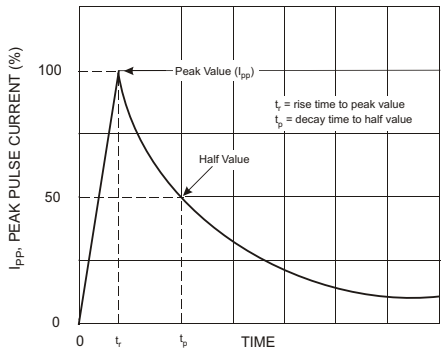
Maximum Ratings and Electrical Characteristics T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Impulse Current	@10/1000us	I_{pp}	30	A
Non-Repetitive Peak On-State Current	@8.3ms (one-half cycle)	I_{TSM}	15	A
Junction Temperature Range		T_j	-40 to +150	C
Storage Temperature Range		T_{STG}	-55 to +150	C
Thermal Resistance, Junction to Lead		R_{JL}	30	°C/W
Thermal Resistance, Junction to Ambient		R_{JA}	120	°C/W
Typical Positive Temperature Coefficient for Breakdown Voltage		VBR/ T_j	0.1	%/°C

Maximum Rated Surge Waveform

Waveform	Standard	Ipp (A)
2/10 us	GR-1089-CORE	200
8/20 us	IEC 61000-4-5	150
10/160 us	FCC Part 68	100
10/700 us	ITU-T, K20/K21	60
10/560 us	FCC Part 68	50
10/1000 us	GR-1089-CORE	30



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Electrical Characteristics

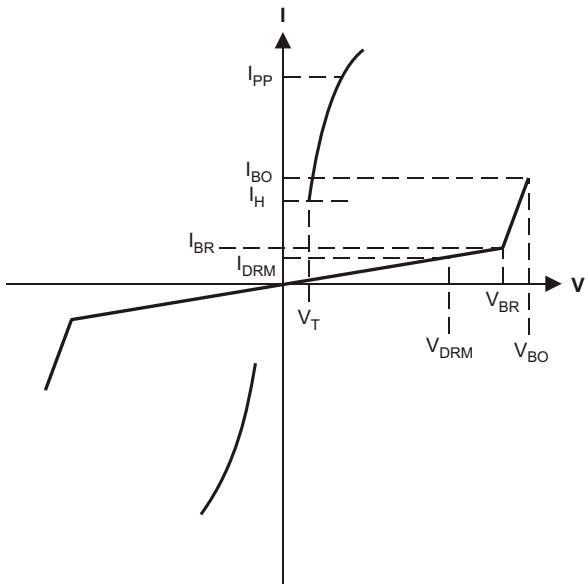
@ T_A = 25 C unless otherwise specified

Part Number	Marking Code	Rated Repetitive Off-State Voltage	Off-State Leakage Current @ V_{DRM}	Breakover Voltage	On-State Voltage @ I_T = 1A	Breakover Current I_{BO}		Holding Current I_H		Off-State Capacitance
		V_{DRM} (V)	I_{DRM} (uA)	V_{BO} (V)	V_T (V)	Min (mA)	Max (mA)	Min (mA)	Max (mA)	C_O (pF)
TB0640L	T064L	58	5	77	3.5	50	800	150	800	100
TB0720L	T072L	65	5	88	3.5	50	800	150	800	100
TB0900L	T090L	75	5	98	3.5	50	800	150	800	100
TB1100L	T110L	90	5	130	3.5	50	800	150	800	60
TB1300L	T130L	120	5	160	3.5	50	800	150	800	60
TB1500L	T150L	140	5	180	3.5	50	800	150	800	60
TB1800L	T180L	160	5	220	3.5	50	800	150	800	60
TB2300L	T230L	190	5	265	3.5	50	800	150	800	40
TB2600L	T260L	220	5	300	3.5	50	800	150	800	40
TB3100L	T310L	275	5	350	3.5	50	800	150	800	40
TB3500L	T350L	320	5	400	3.5	50	800	150	800	40

Symbol	Parameter
V_{DRM}	Stand-off Voltage
I_{DRM}	Leakage current at stand-off voltage
V_{BR}	Breakdown voltage
I_{BR}	Breakdown current
V_{BO}	Breakover voltage
I_{BO}	Breakover current
I_H	Holding current NOTE: 1
V_T	On state voltage
I_{PP}	Peak pulse current
C_O	Off-state capacitance NOTE: 2

Notes: 1. $I_H > (V_L/R_L)$ If this criterion is not obeyed, the TSPD triggers but does not return correctly to high-resistance state. The surge recovery time does not exceed 30ms.

2. Off-state capacitance measured at f = 1.0MHz, 1.0V_{RMS} signal, $V_R = 2V_{DC}$ bias.



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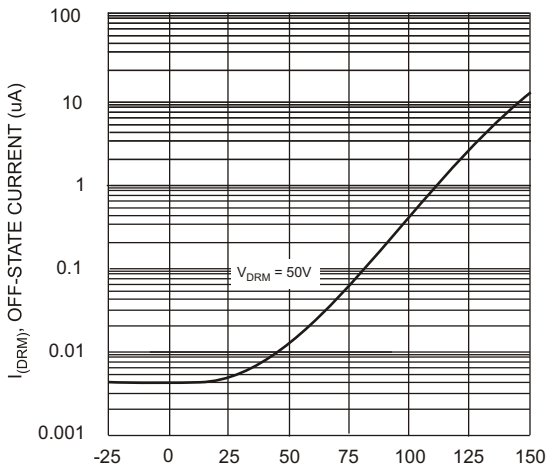

Fig. 1 Off-State Current vs. Junction Temperature

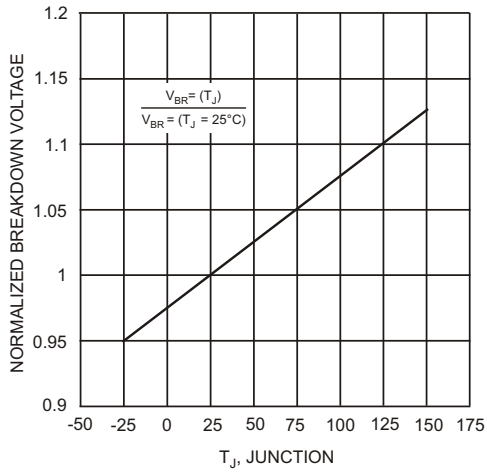

Fig. 2 Relative Variation of Breakdown Voltage vs. Junction Temperature

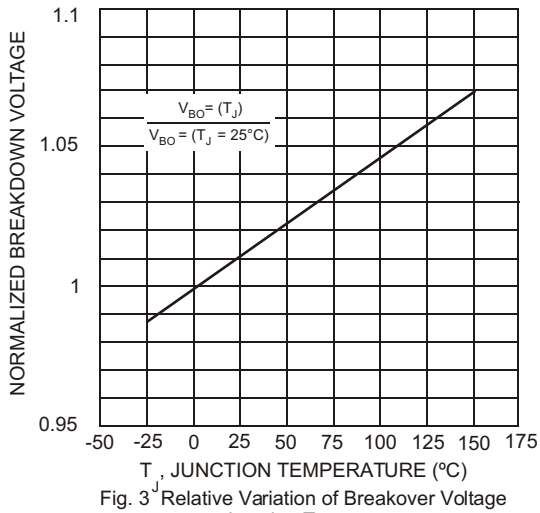

Fig. 3 Relative Variation of Breakover Voltage vs. Junction Temperature

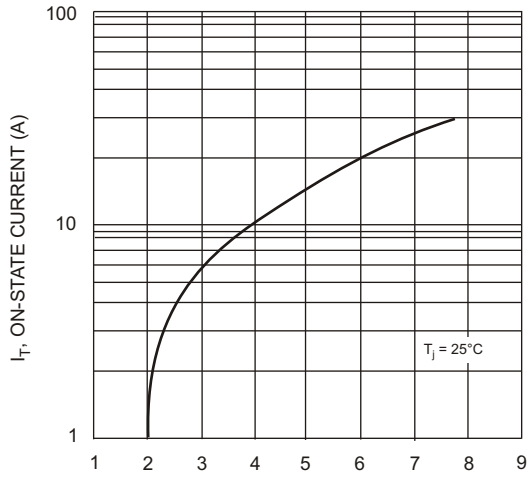

Fig. 4 On-State Current vs. On-State Voltage

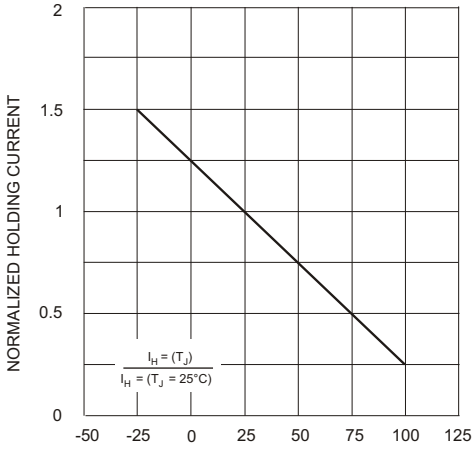

Fig. 5 Relative Variation of Holding Current vs. Junction Temperature

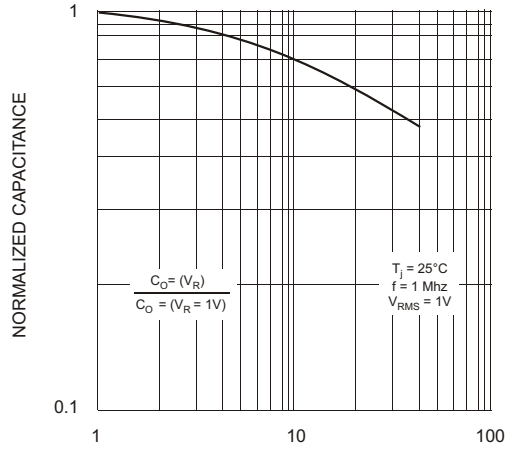

Fig. 6 Relative Variation of Junction Capacitance vs. Reverse Voltage Bias