

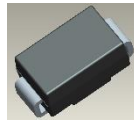
100A BIDIRECTIONAL SURFACE-MOUNT THYRISTOR SURGE PROTECTIVE DEVICE

Features

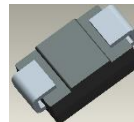
- 100A Peak Pulse Current @ 10/1000µs
- 380A Peak Pulse Current @ 8/20µs
- Low Capacitance
- Bidirectional Protection In a Single Device
- High Off-State Impedance and Low On-State Voltage
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/contact-us) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: SMB
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: None; Bidirectional Devices Have No Polarity Indicator
- Weight: 0.093 grams (Approximate)



Top View



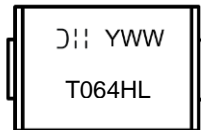
Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
TB0640HL-13	SMB	3000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



T064HL = Product Type Marking Code
 DII = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 3 for 2023)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

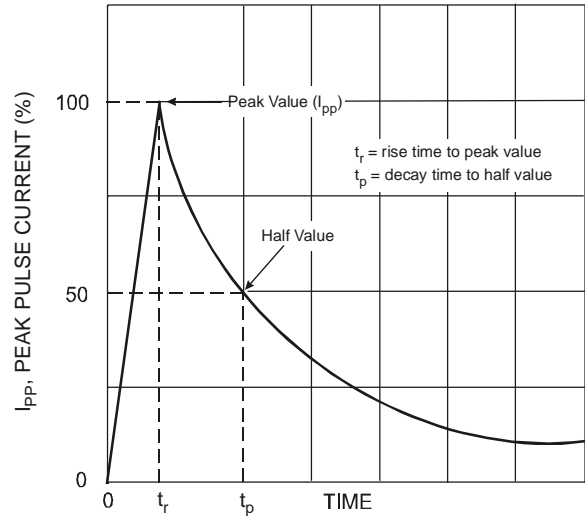
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Impulse Current @ 10/1000μs	I _{PP}	100	A
Typical Positive Temperature Coefficient for Breakdown Voltage	ΔV _{BO} /ΔT _J	0.1	%/°C
Junction Temperature Range	T _J	-40 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Maximum Rated Surge Waveform

Waveform	Standard	I _{PP} (A)
2/10μs	GR-1089-CORE	400
8/20μs	IEC 61000-4-5	380
10/160μs	FCC Part 68	200
10/560μs	FCC Part 68	180
10/700μs (Note 5)	ITU-T, K20/K21	160
10/1000μs	GR-089-CORE	100

Note: 5. Applied 6kV, 10/700μs waveform



Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Part Number	Maximum Rated Repetitive Off-State Voltage	Maximum Off-State Leakage Current @ V _{DRM}	Maximum Breakover Voltage	Maximum On-State Voltage @ I _T = 1A	Breakover Current I _{BO}		Holding Current I _H (Note 6)		Typical Off-State Capacitance (Note 7)	Marking Code
	V _{DRM} (V)	I _{DRM} (μA)	V _{BO} (V)	V _T (V)	Min (mA)	Max (mA)	Min (mA)	Max (mA)	C _o (pF)	
TB0640HL	58	5	77	3.5	50	800	150	800	50	T064HL

Notes: 6. 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.
7. Off-state capacitance measured at f = 1.0MHz, 1.0V_{RMS} signal, V_R = 2V_{DC} bias.

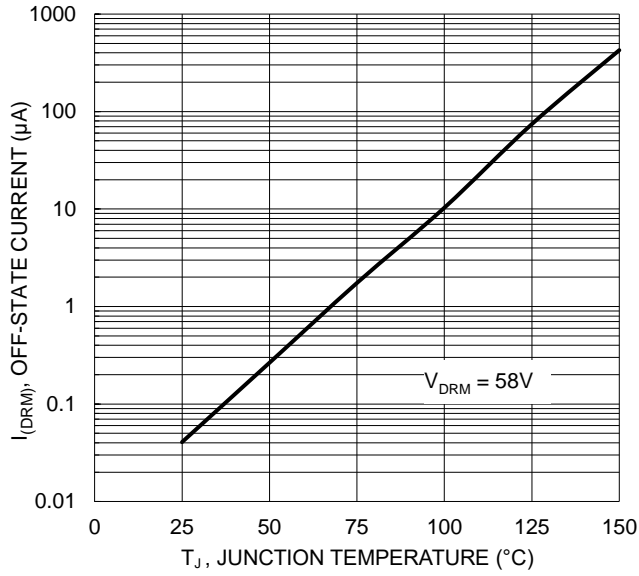


Figure 1. Off-State Current vs. Junction Temperature

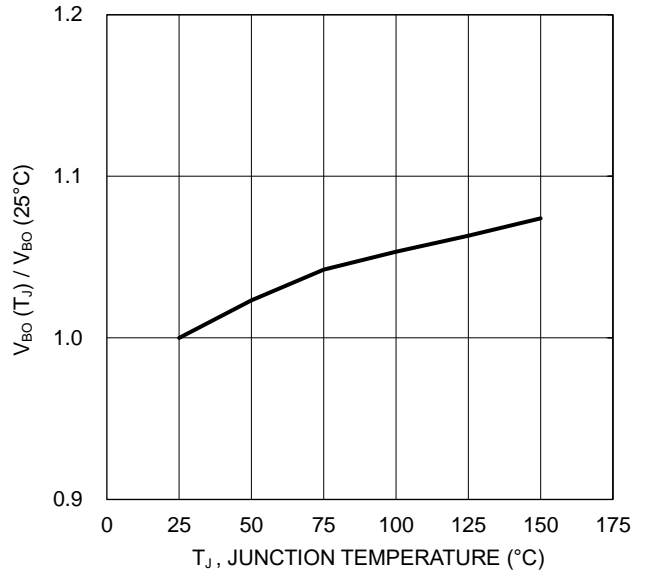


Figure 2. Typical Breakover Voltage

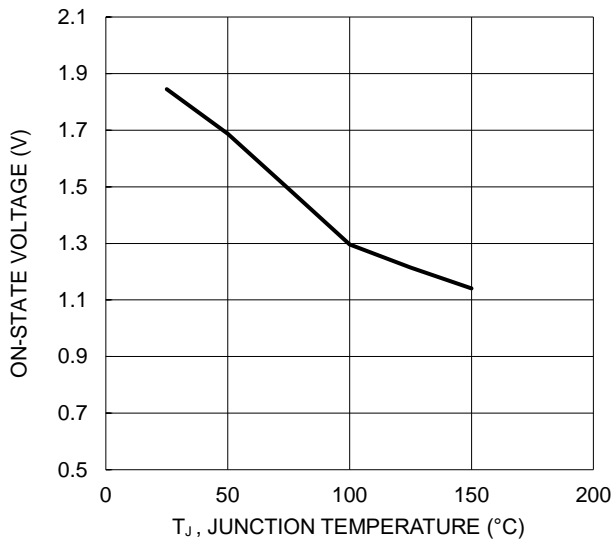


Figure 3. Typical On-State Voltage

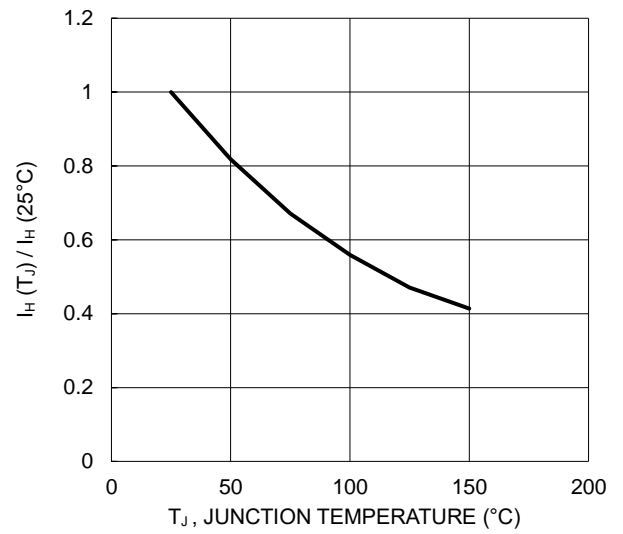


Figure 4. Typical Holding Current

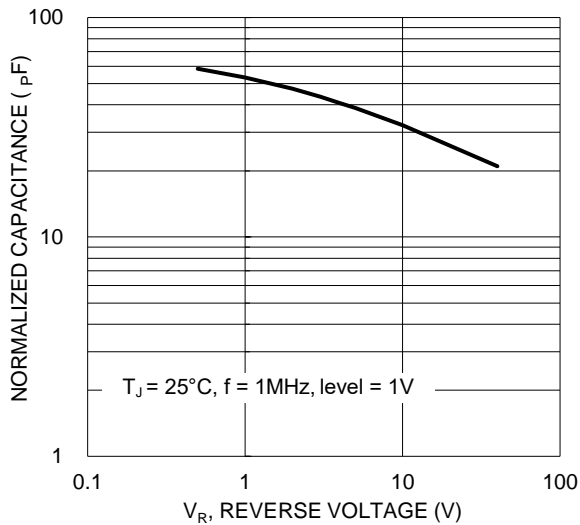
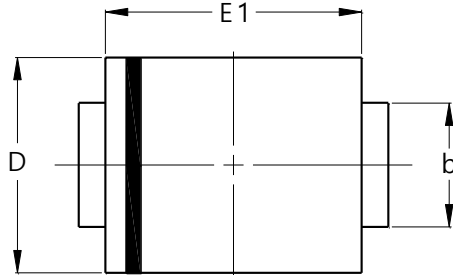


Figure 5. Typical Junction Capacitance

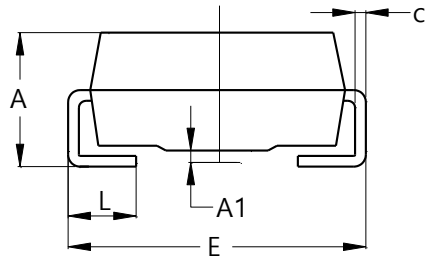
Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMB



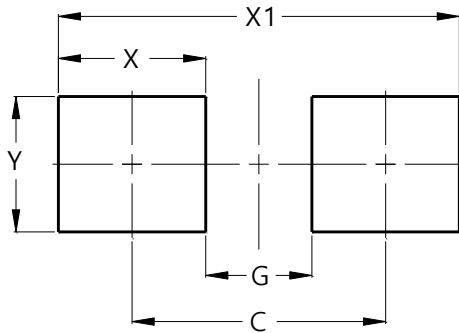
SMB		
Dim	Min	Max
A	2.00	2.50
A1	0.05	0.20
b	1.96	2.21
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.06	4.57
L	0.76	1.52
All Dimensions in mm		



Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMB



Dimensions	Value (in mm)
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

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