LITE-ON SEMICONDUCTOR

TB0080LL

SURFACE MOUNT
THYRISTOR SURGE PROTECTIVE DEVICE

Bi-Directional

VDRM - **6** Volts
IPP - **50** Amperes

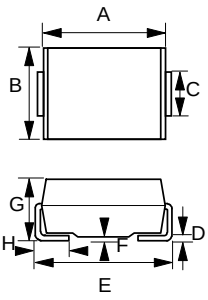
FEATURES

- Bidirectional protection in a single device
- High off state Impedance and low on state voltage
- Surge capabilities up to 50A @10/1000us or 150A @8/20us
- Low Capacitance
- Plastic material has UL flammability classification 94V-0
- Qualified to AEC-Q101 Rev_C

MECHANICAL DATA

- Case : Molded plastic
- Polarity : Denotes none cathode band
- Weight : 0.003 ounces, 0.093 grams

SMB



SMB		
DIM.	MIN.	MAX.
A	4.06	4.57
B	3.30	3.94
C	1.96	2.21
D	0.15	0.31
E	5.21	5.59
F	0.05	0.20
G	2.01	2.62
H	0.76	1.52
All Dimensions in millimeter		

MAXIMUM RATINGS

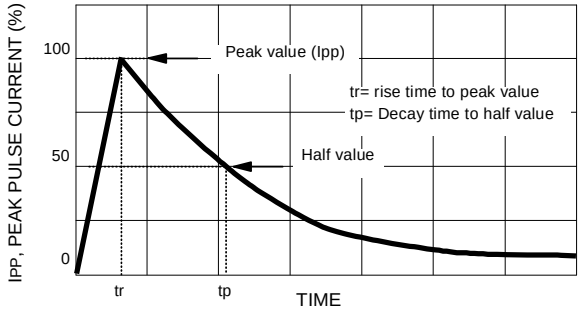
CHARACTERISTICS	SYMBOL	VALUE	UNIT
Non-repetitive peak impulse current @ 10/1000us	IPP	50	A
Junction temperature range	TJ	-40 to +150	℃
storage temperature range	TSTG	-55 to +150	℃

THERMAL RESISTANCE

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Junction to leads	Rth(J-L)	20	℃ /W
Junction to ambient on print circuit (on recommended pad layout)	Rth(J-A)	100	℃ /W
Typical positive temperature coefficient for brekdown voltage	△ VBR/△ TJ	0.1	%/℃

MAXIMUM RATED SURGE WAVEFORM

WAVEFORM	STANDARD	IPP (A)
2/10 us	GR-1089-CORE	150
8/20 us	IEC 61000-4-5	150
10/160 us	FCC Part 68	90
10/560 us	FCC Part 68	60
10/700 us	ITU-T K20/K21	60
10/1000 us	GR-1089-CORE	50



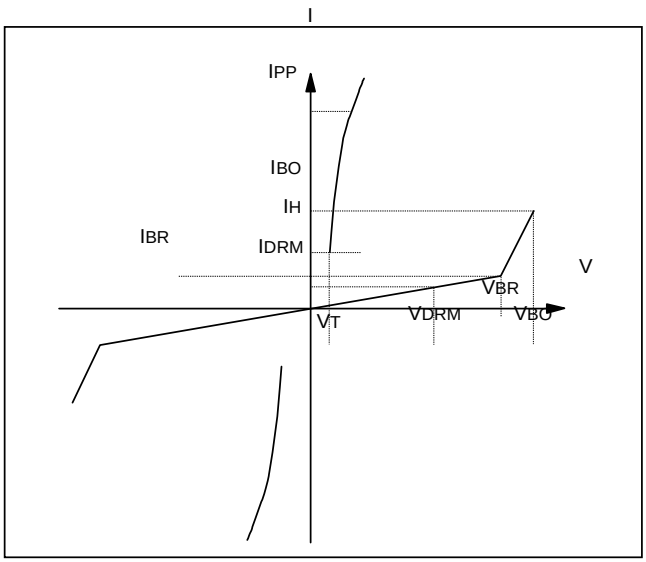
REV. 0, Aug-2016, KSWB09

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ELECTRICAL CHARACTERISTICS @ T_A= 25℃ unless otherwise specified
TB0080LL

PARAMETER	MARKING CODE	RATED REPETITIVE OFF-STATE VOLTAGE	OFF-STATE LEAKAGE CURRENT @ V_{DRM}	BREAKOVER VOLTAGE	ON-STATE VOLTAGE @ I_T=2.2A	BREAKOVER CURRENT		HOLDING CURRENT		OFF-STATE CAPACITANCE
SYMBOL		V_{DRM}	I_{DRM}	V_{BO}	V_T	I_{BO}		I_H		Co
UNITS		Volts	uA	Volts	Volts	mA		mA		pF
LIMIT		Max	Max	Max	Max	Min	Max	Min	Max	Typ
TB0080LL	T008LL	6	5	25	4	50	800	50	300	15

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	
Co	Off state capacitance	Note: 2



NOTES: 1. I_H > (V_L/RL) If this criterion is not obeyed, the T_{SPD} 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; VR=2V_{DC} bias.

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FIG.1-OFF STATE CURRENT VS JUNCTION TEMPERATURE

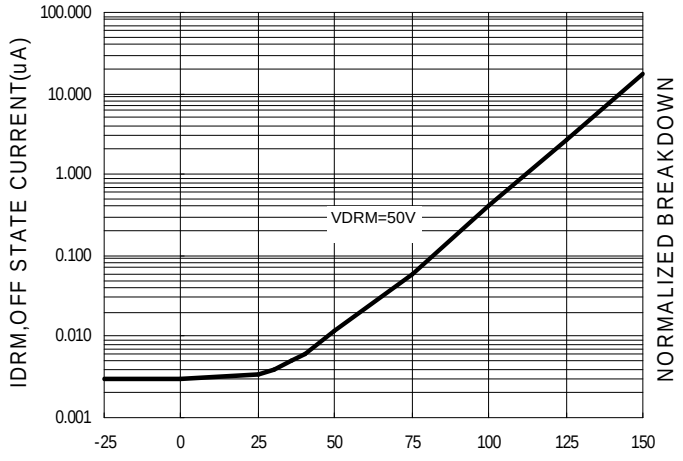


FIG.2-RELATIVE VARIATION OF BREAKDOWN VOLTAGE VS JUNCTION TEMPERATURE

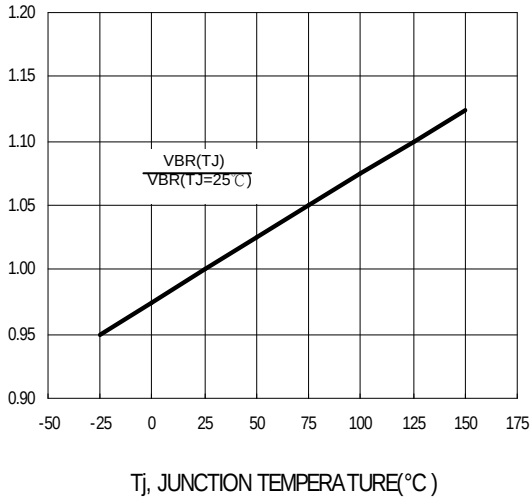


FIG.3-RELATIVE VARIATION OF BREAKDOWN VOLTAGE VS JUNCTION TEMPERATURE

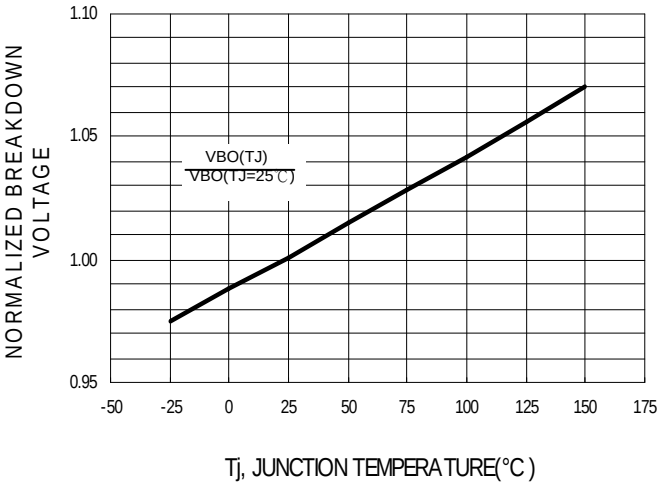


FIG.4-ON STATE CURRENT VS ON STATE VOLTAGE

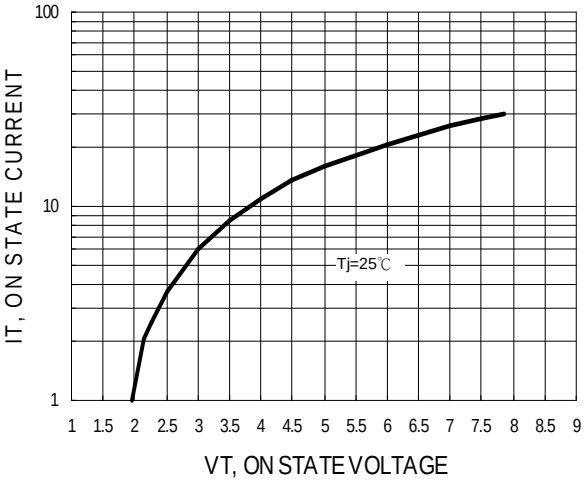


FIG.5-RELATIVE VARIATION OF HOLDING CURRENT VS JUNCTION TEMPERATURE

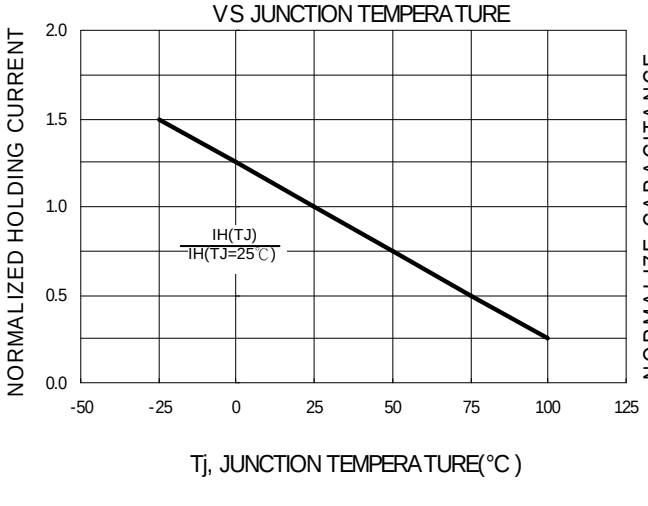
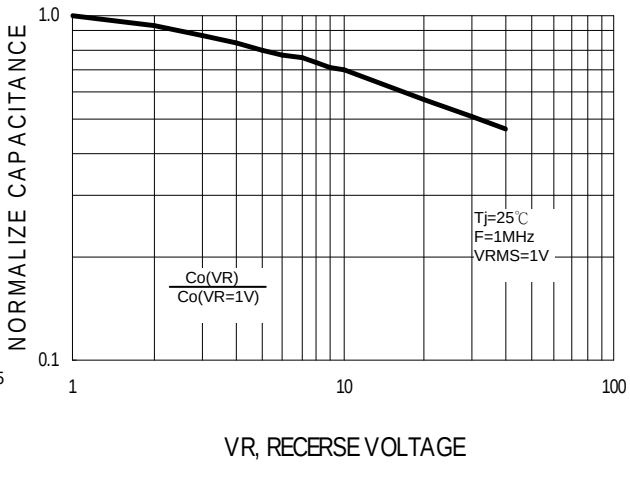
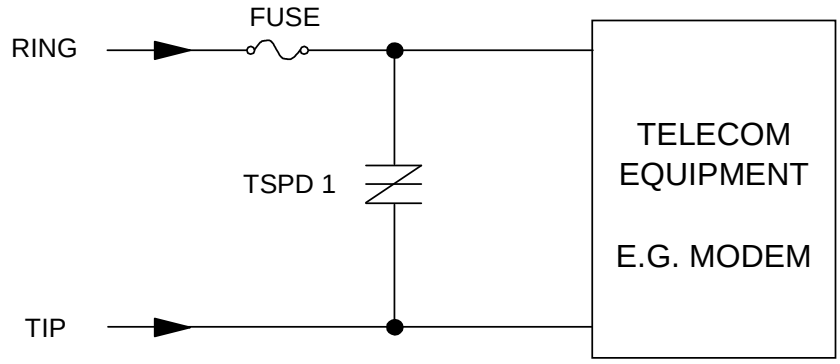
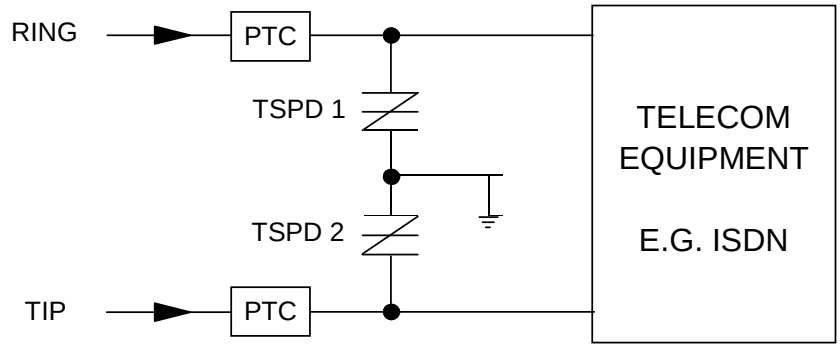


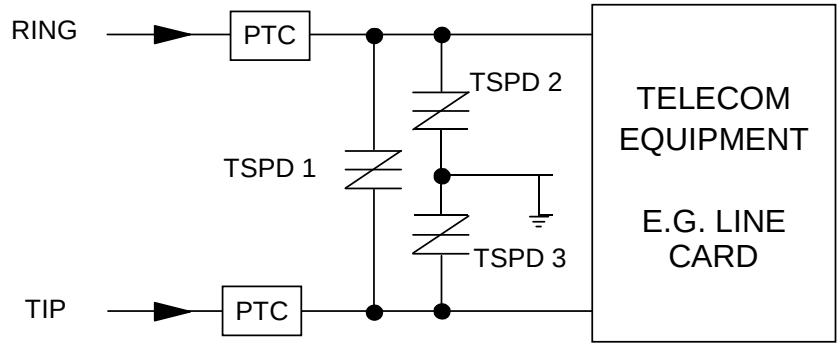
FIG.6-RELATIVE VARIATION OF JUNCTION CAPACITANCE VS REVERSE VOLTAGE BIAS



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The PTC (Positive Temperature Coefficient) is an overcurrent protection device

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