

**SURFACE MOUNT
THYRISTOR SURGE PROTECTIVE DEVICE**
Bi-Directional

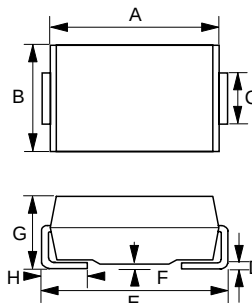
VDRM - **58 to 320** Volts
IPP - **100** Amperes

FEATURES

- Oxide Glass Passivated Junction
- Bidirectional protection in a single device
- Surge capabilities up to 100A @ 10/1000us or 400 @ 8/20us
- High off state Impedance and low on state voltage
- Plastic material has UL flammability classification 94V-0

MECHANICAL DATA

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

SMC


SMC		
DIM.	MIN.	MAX.
A	6.60	7.11
B	5.59	6.22
C	2.92	3.18
D	0.15	0.31
E	7.75	8.13
F	0.05	0.20
G	2.01	2.62
H	0.76	1.52

All Dimensions in millimeter

MAXIMUM RATINGS

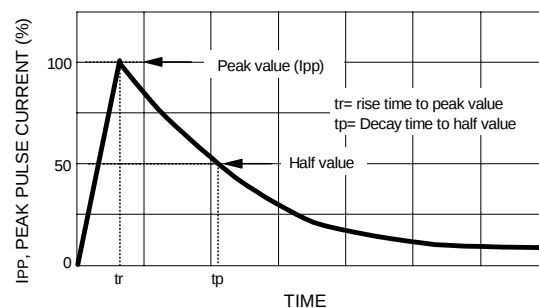
CHARACTERISTICS	SYMBOL	VALUE	UNIT
Non-repetitive peak impulse current @ 10/1000us	IPP	100	A
Non-repetitive peak On-state current @ 8.3ms (one half cycle)	ITSM	50	A
Junction temperature range	TJ	-40 to +150	°C
storage temperature range	TSTG	-55 to +150	°C

THERMAL RESISTANCE

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

MAXIMUM RATED SURGE WAVEFORM

WAVEFORM	STANDARD	IPP (A)
2/10 us	GR-1089-CORE	500
8/20 us	IEC 61000-4-5	400
10/160 us	FCC Part 68	250
10/700 us	ITU-T K20/21	200
10/560 us	FCC Part 68	160
10/1000 us	GR-1089-CORE	100



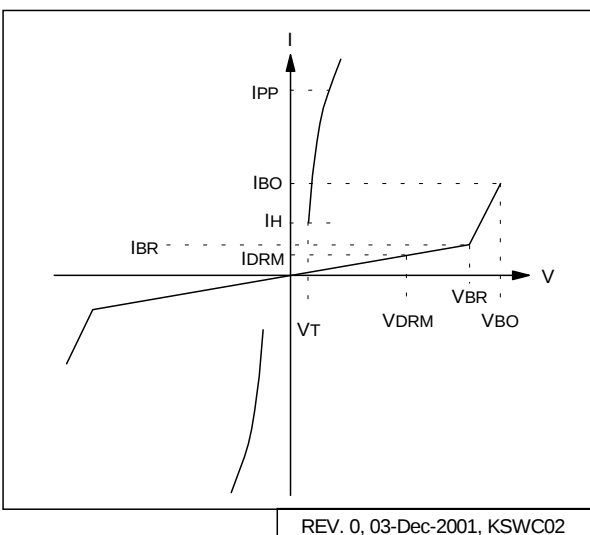
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ELECTRICAL CHARACTERISTICS @ $T_A = 25^\circ\text{C}$ unless otherwise specified
TC0640H thru TC3500H



PARAMETER	RATED REPETITIVE OFF-STATE VOLTAGE	OFF-STATE LEAKAGE CURRENT @ V_{DRM}	BREAKOVER VOLTAGE	ON-STATE VOLTAGE @ $I_T = 1.0A$	BREAKOVER CURRENT		HOLDING CURRENT		OFF-STATE CAPACITANCE
SYMBOL	V_{DRM}	I_{DRM}	V_{BO}	V_T	I_{BO-}	I_{BO+}	I_{H-}	I_{H+}	C_o
UNITS	Volts	μA	Volts	Volts	mA	mA	mA	mA	pF
LIMIT	Max	Max	Max	Max	Min	Max	Min	Max	Typ
TC0640H	58	5	77	3.5	50	800	150	800	200
TC0720H	65	5	88	3.5	50	800	150	800	200
TC0900H	75	5	98	3.5	50	800	150	800	200
TC1100H	90	5	130	3.5	50	800	150	800	120
TC1300H	120	5	160	3.5	50	800	150	800	120
TC1500H	140	5	180	3.5	50	800	150	800	120
TC1800H	160	5	220	3.5	50	800	150	800	120
TC2300H	190	5	265	3.5	50	800	150	800	80
TC2600H	220	5	300	3.5	50	800	150	800	80
TC3100H	275	5	350	3.5	50	800	150	800	80
TC3500H	320	5	400	3.5	50	800	150	800	80

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



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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 $f=1.0\text{MHz}$; $1.0V_{RMS}$ signal; $V_R=2V_{DC}$ bias.

FIG. 1 - OFF STATE CURRENT vs JUNCTION TEMPERATURE **FIG. 2 - RELATIVE VARIATION OF BREAKDOWN VOLTAGE vs JUNCTION TEMPERATURE**

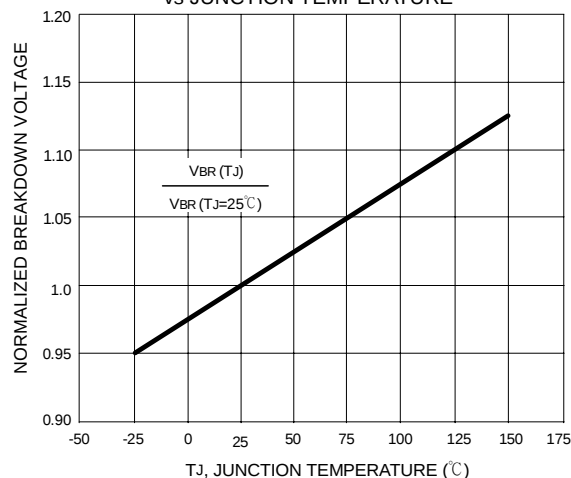
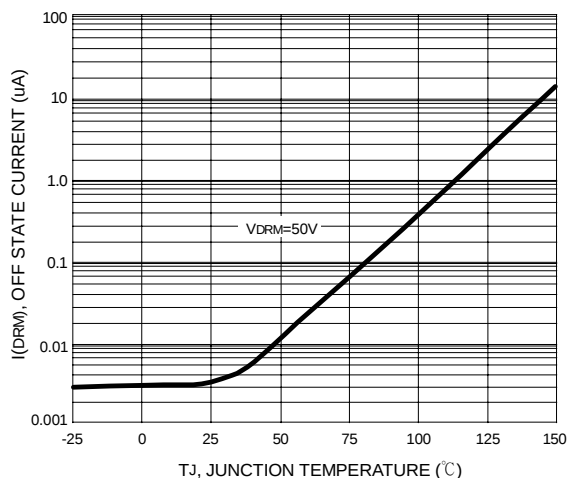


FIG. 3 - RELATIVE VARIATION OF BREAKOVER VOLTAGE vs JUNCTION TEMPERATURE

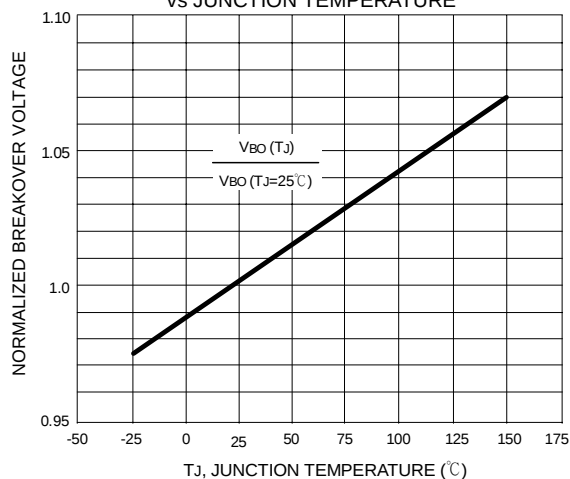


FIG. 4 - ON STATE CURRENT vs ON STATE VOLTAGE

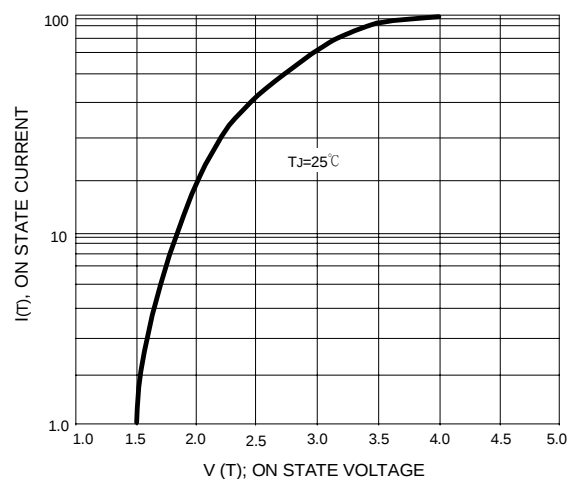


FIG. 5 - RELATIVE VARIATION OF HOLDING CURRENT vs JUNCTION TEMPERATURE

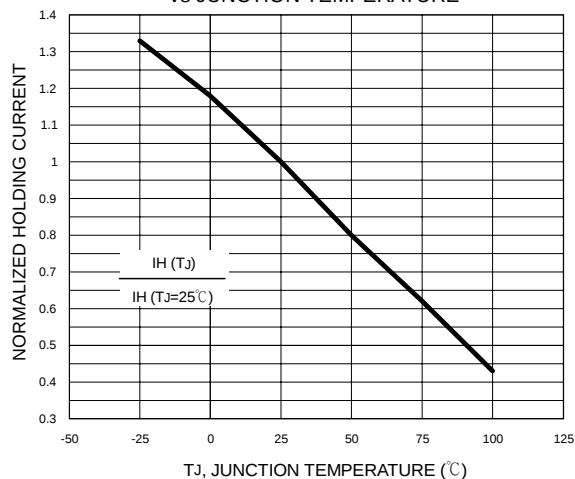
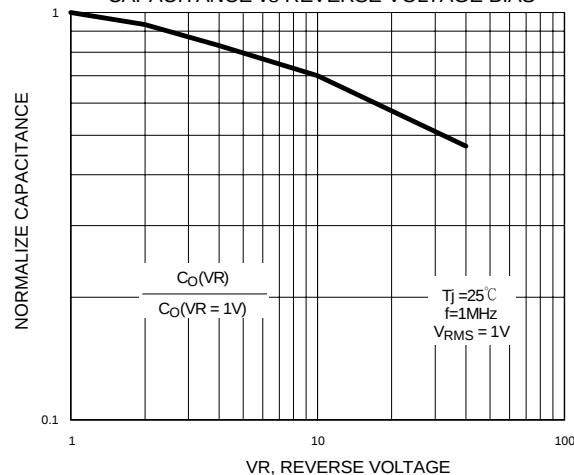
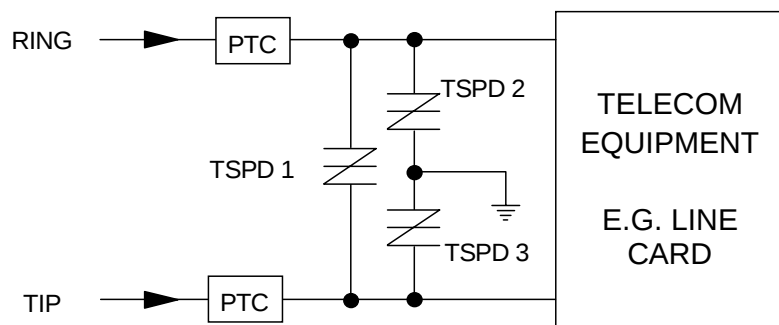
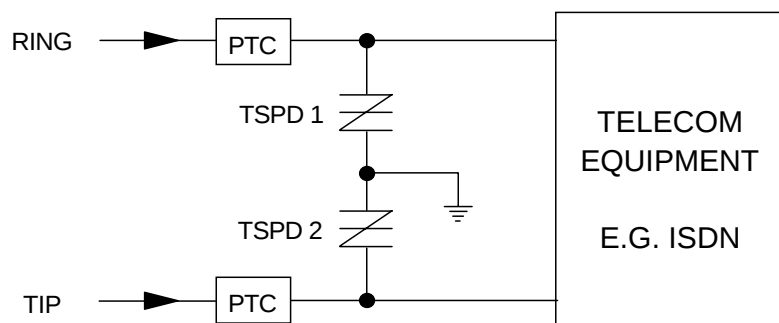
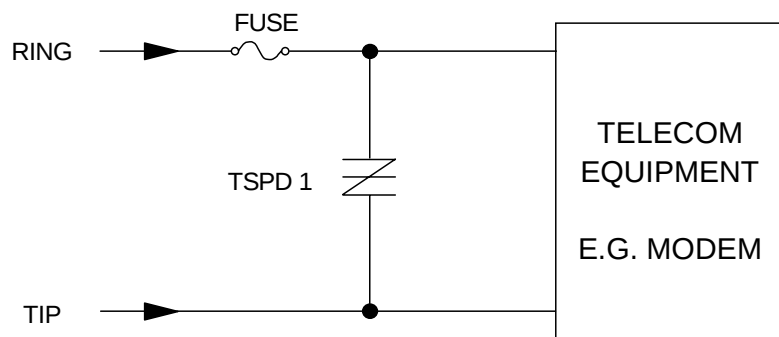


FIG. 6 - RELATIVE VARIATION OF JUNCTION CAPACITANCE vs REVERSE VOLTAGE BIAS





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