



Micro Commercial Components

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**TSMBJ0305C-064**

**Transient Voltage  
 Protection Device  
 58 Volts**

**Features**

- Oxide-Glass passivated Junction
- Bi-Directional protection in a single device
- Surge capabilities up to 50A@10/1000us or 150A@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 : None cathode band denotes
- Approx Weight : 0.093grams

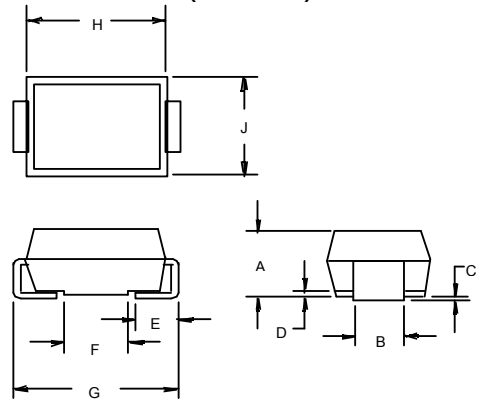
**Maximum Ratings**

Characteristic	Symbol	Value	Unit
Non-repetitive peak impulse current	$I_{PP}$	50A	10/1000us
Non-repetitive peak On-state current	$I_{TSM}$	20A	8.3ms, one-half cycle
Operating temperature range	$T_{OP}$	-40~125°C	
Junction and storage temperature range	$T_J, T_{STG}$	-55~150°C	

**Thermal Resistance**

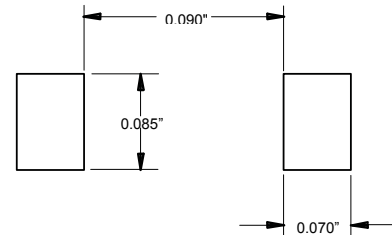
Characteristic	Symbol	Value	Unit
Thermal Resistance junction to lead	$R_{\theta JL}$	30°C/W	
Thermal Resistance junction to ambient	$R_{\theta JA}$	120°C/W	On recommended pad layout
Typical positive temperature coefficient for breakdown voltage	$\Delta V_{BR}/\Delta T_J$	0.1%/°C	

**DO-214AA  
 (SMBJ)**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.078	.096	2.00	2.44	
B	.077	.083	1.96	2.10	
C	.002	.008	.05	.20	
D	—	.02	—	.51	
E	.030	.060	.76	1.52	
F	.065	.091	1.65	2.32	
G	.205	.220	5.21	5.59	
H	.160	.180	4.06	4.57	
J	.130	.155	3.30	3.94	

**SUGGESTED SOLDER  
 PAD LAYOUT**



# TSMBJ0305C-064



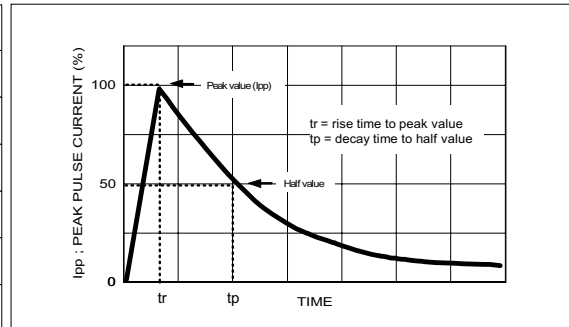
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## ELECTRICAL CHARACTERISTIC @25 : Unless otherwise specified

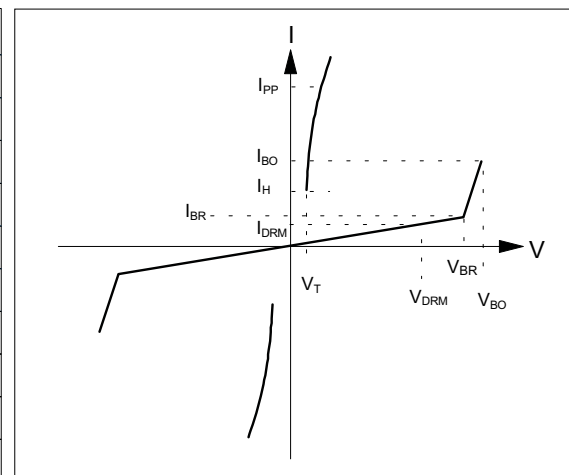
Parameter	Rated Repetitive Off-state Voltage	Off-state Leakage Current@ $V_{DRM}$	Breakover Voltage	On-State Voltage @ $I_T=1.0A$	Breakover Current	Holding Current	Off-State Capacitance
Symbol	$V_{DRM}$	$I_{DRM}$	$V_{BO}$	$V_T$	$I_{BO+}$	$I_H$	$C_J$
Units	Volts	$\mu A$	Volts	Volts	mA	mA	pF
Limit	Max	Max	Max	Max	Max	Min	Typ.
TSMBJ0305C-064	58	5	77	5	800	150	100

## MAXIMUM RATED SURGE WAVEFORM

Waveform	Standard	$I_{pp}$ (A)
2/10 $\mu s$	GR-1089-CORE	200
8/20 $\mu s$	IEC 61000-4-5	150
10/160 $\mu s$	FCC Part 68	100
10/700 $\mu s$	ITU-T K20/21	60
10/560 $\mu s$	FCC Part 68	60
10/1000 $\mu s$	GR-1089-CORE	50

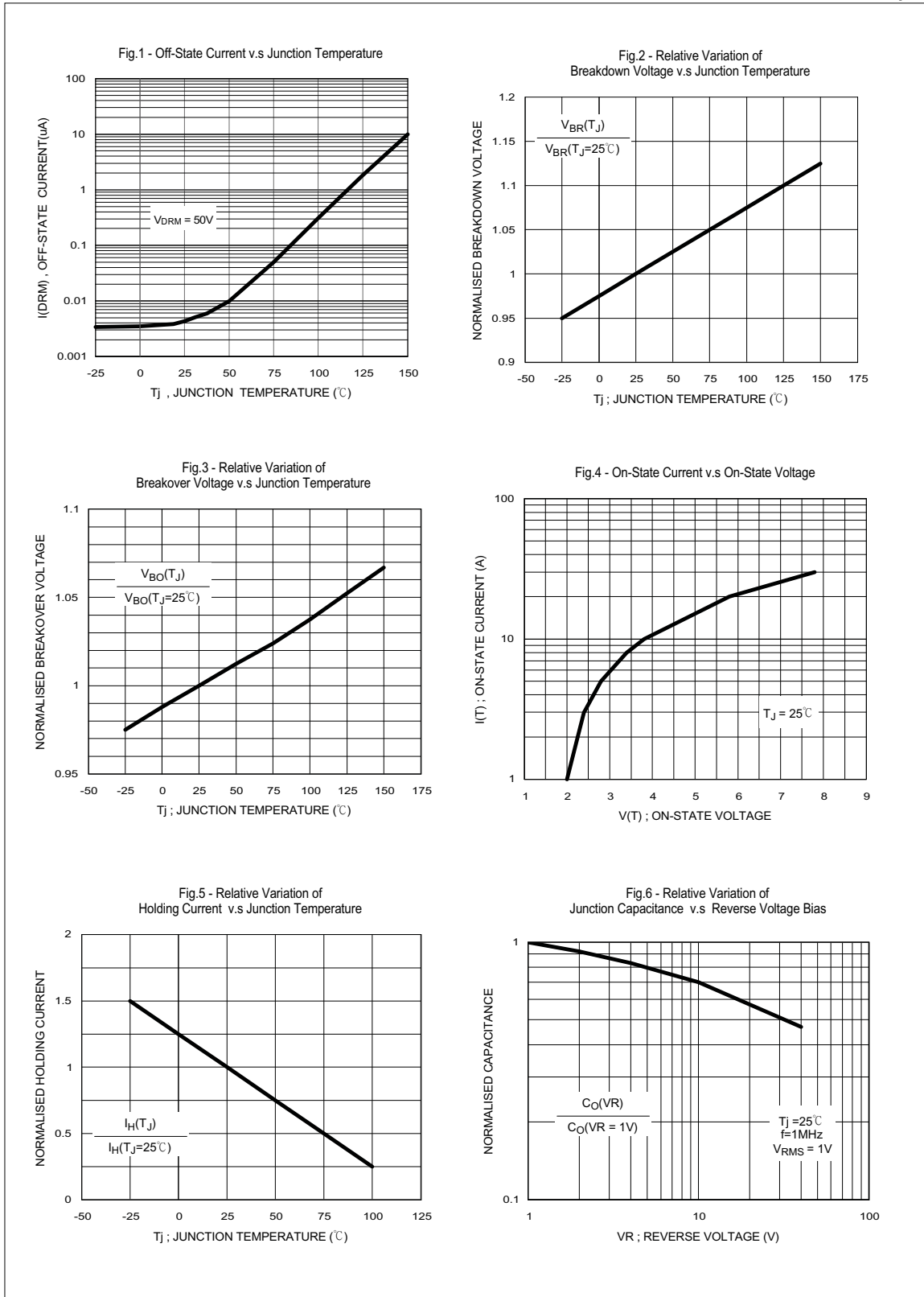


Symbol	Parameter	
$V_{DRM}$	Stand-off voltage	
$I_{DRM}$	Leakage current at stand-off voltage	
$V_{BR}$	Breakdown voltage	
$I_{BR}$	Breakdown current	
$V_{BO}$	Breakover voltage	
$I_{BO}$	Breakover current	
$I_H$	Holding current	NOTE: 1
$V_T$	On state voltage	
$I_{PP}$	Peak pulse current	
$C_O$	Off-state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



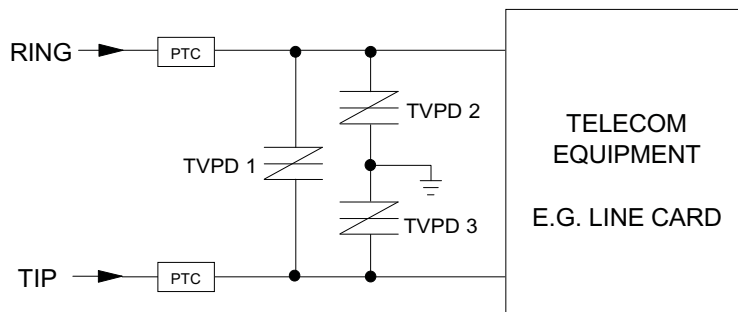
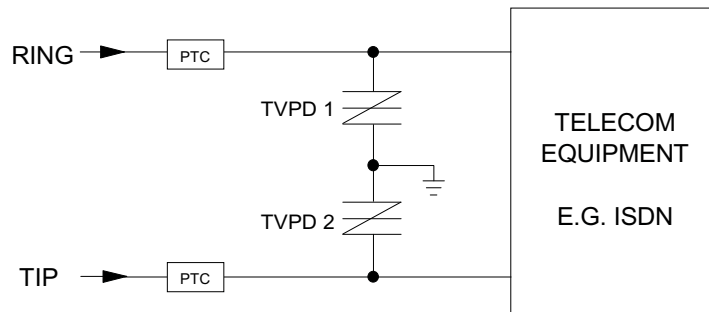
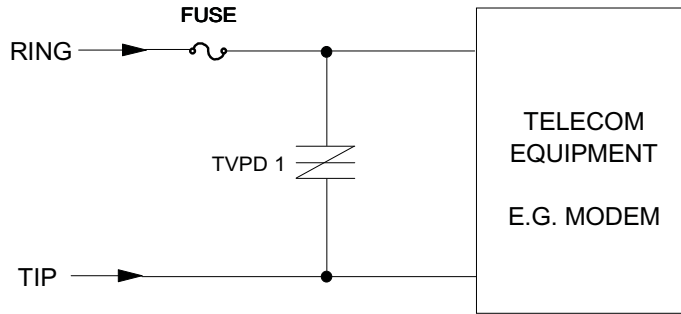
### NOTE :

- $I_H > (V_L / R_L)$  If this criterion is not obeyed, the TSPD triggers but does not return correctly to high-resistance state. The surge recovery time. It does not exceed 30ms.
- Off-state capacitance measured at  $f=1.0MHz$ ,  $1.0V_{rms}$  signal,  $VR=2V_{dc}$  bias.



# TSMBJ0305C-064

## TYPICAL APPLICATION CIRCUITS



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

## MARKING CODE

