



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Micro Commercial Components

Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

**TSMBJ050 5C-064**

**Features**

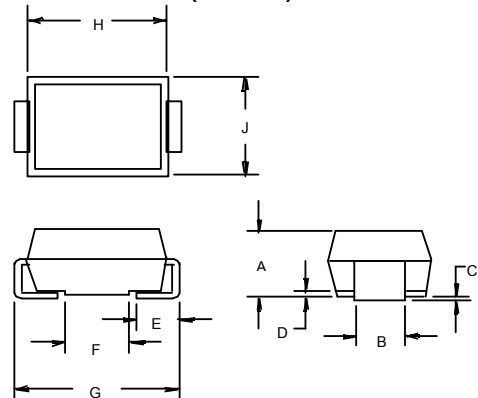
- Oxide-Glass passivated Junction
- Bi-Directional protection in a single device
- Surge capabilities up to 80A@10/1000us or 250A@8/20us
- High Off-State impedance and Low On-State voltage
- Plastic material has UL flammability classification 94V-0

**Transient Voltage  
Protection Device  
58 Volts**

**Mechanical Data**

- Case : Molded plastic
- Polarity : None cathode band denotes
- Approx Weight : 0.093grams

**DO-214AA  
(SMB)**



**Maximum Ratings**

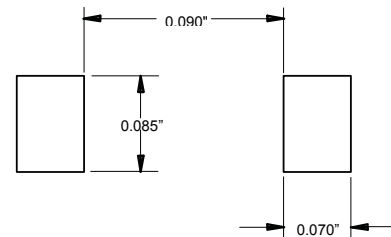
Characteristic	Symbol	Value	Unit
Non-repetitive peak impulse current	$I_{PP}$	80A	10/1000us
Non-repetitive peak On-state current	$I_{TSM}$	30A	8.3ms, one-half cycle
Operating temperature range	$T_{OP}$	-40~150°C	
Junction and storage temperature range	$T_J, T_{STG}$	-55~150°C	

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	

**Thermal Resistance**

Characteristic	Symbol	Value	Unit
Thermal Resistance junction to lead	$R_{\theta JL}$	20°C/W	
Thermal Resistance junction to ambient	$R_{\theta JA}$	100°C/W	On recommended pad layout
Typical positive temperature coefficient for breakdown voltage	$\Delta V_{BR}/\Delta T_J$	0.1%/°C	

**SUGGESTED SOLDER  
PAD LAYOUT**



# TSMBJ0505C-064



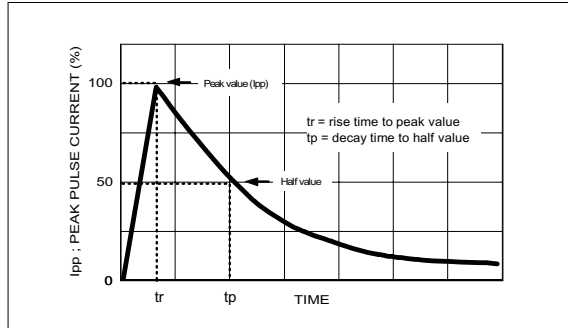
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ELECTRICAL CHARACTERISTIC @25°C Unless otherwise specified

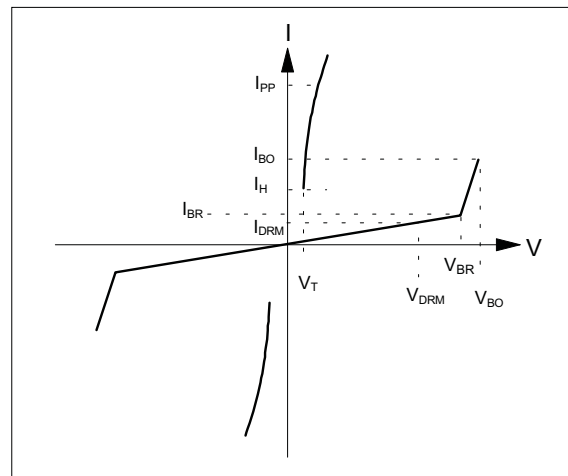
Parameter	Rated Repetitive Off-state Voltage	Off-state Leakage Current@ $V_{DRM}$	Breakover Voltage	On-State Voltage @ $I_T=1.0A$	Breakover Current	Holding Current	Off-State Capacitance
Symbol	$V_{DRM}$	$I_{DRM}$	$V_{BO}$	$V_T$	$I_{BO+}$	$I_H$	$C_J$
Units	Volts	$\mu A$	Volts	Volts	mA	mA	pF
Limit	Max	Max	Max	Max	Max	Min	Typ.
TSMBJ0505C-064	58	5	77	5	800	150	140

## MAXIMUM RATED SURGE WAVEFORM

Waveform	Standard	Ipp (A)
2/10 us	GR-1089-CORE	250
8/20 us	IEC 61000-4-5	250
10/160 us	FCC Part 68	150
10/700 us	ITU-T K20/21	100
10/560 us	FCC Part 68	100
10/1000 us	GR-1089-CORE	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



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,  $V_R=2V_{dc}$  bias.

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Fig.1 - Off-State Current v.s Junction Temperature

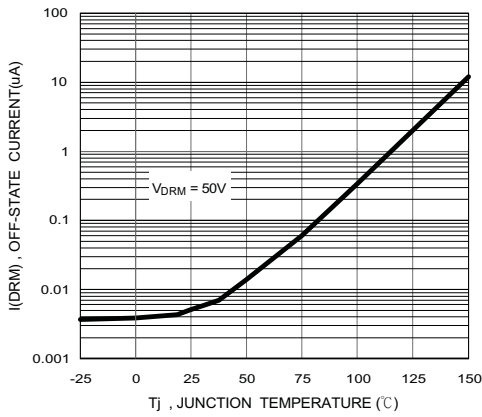


Fig.2 - Relative Variation of Breakdown Voltage v.s Junction Temperature

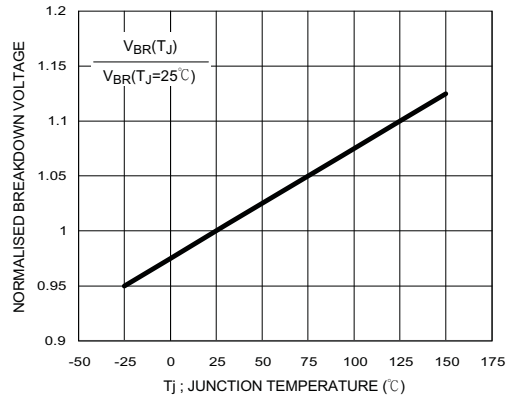


Fig.3 - Relative Variation of Breakover Voltage v.s Junction Temperature

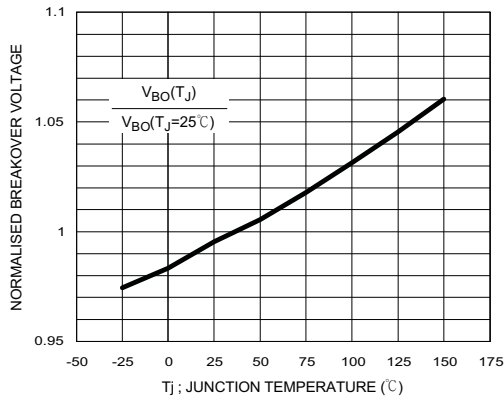


Fig.4 - On-State Current v.s On-State Voltage

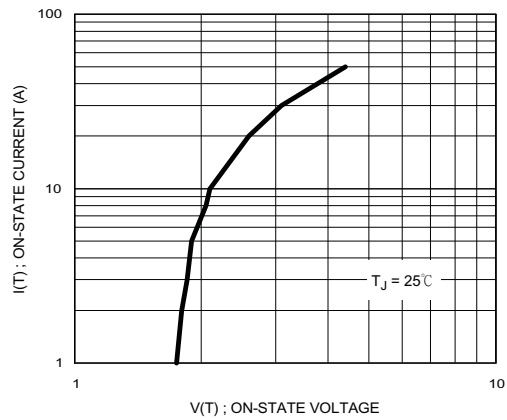


Fig.5 - Relative Variation of Holding Current v.s Junction Temperature

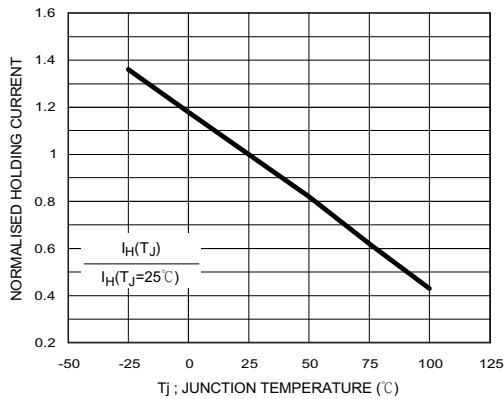
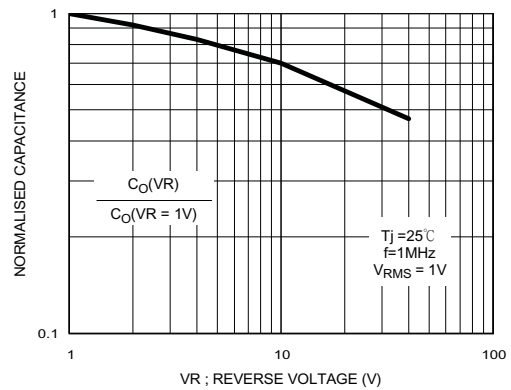


Fig.6 - Relative Variation of Junction Capacitance v.s Reverse Voltage Bias

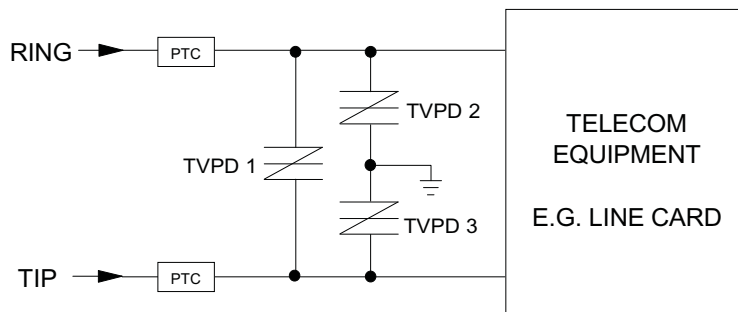
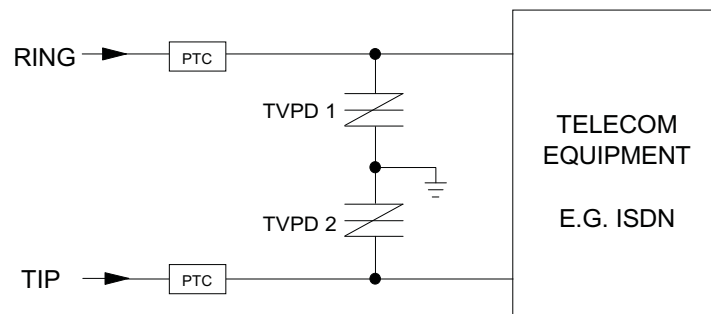
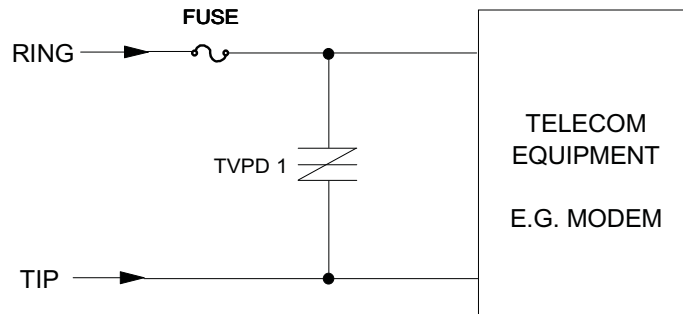


# TSMBJ0505C-064

## TYPICAL APPLICATION CIRCUITS



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