

## ***Micro Commercial Components Corp.***

### **Products End of Life Notification**

**Issue date: Oct-20<sup>th</sup>-2008**

**Last Buy Date : Dec-31<sup>th</sup>-2008**

**Description and Purpose:**

**MCC has undergone a review of its core business and products , and**

**determined to discontinue below products:**

| <b>Discontinued Devices</b> | <b>Possible Replacements</b> |
|-----------------------------|------------------------------|
| TSMBJ1024C                  | None                         |
| TSMBJ1022C                  | None                         |
| TSMBJ1018C                  | None                         |
| TSMBJ1016C                  | None                         |
| TSMBJ1012C                  | None                         |
| TSMBJ1010C                  | None                         |
| TSMBJ1009C-130              | None                         |
| TSMBJ1007C                  | None                         |
| TSMBJ1006C                  | None                         |
| TSMBJ1005C-072              | None                         |
| TSMBJ1005C-064              | None                         |
| TSMBJ0524C                  | None                         |
| TSMBJ0522C                  | None                         |
| TSMBJ0518C                  | None                         |
| TSMBJ0516C                  | None                         |
| TSMBJ0512C                  | None                         |
| TSMBJ0510C                  | None                         |
| TSMBJ0509C-130              | None                         |

| Discontinued Devices | Possible Replacements |
|----------------------|-----------------------|
| TSMBJ0507C           | None                  |
| TSMBJ0506C           | None                  |
| TSMBJ0505C-072       | None                  |
| TSMBJ0505C-064       | None                  |
| TSMBJ0324C           | None                  |
| TSMBJ0322C           | None                  |
| TSMBJ0318C           | None                  |
| TSMBJ0316C           | None                  |
| TSMBJ0312C           | None                  |
| TSMBJ0310C           | None                  |
| TSMBJ0309C-130       | None                  |
| TSMBJ0307C           | None                  |
| TSMBJ0306C           | None                  |
| TSMBJ0305C-072       | None                  |
| TSMBJ0305C-064       | None                  |



Micro Commercial Components

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## Features

- Oxide-Glass passivated Junction
- Bi-Directional protection in a single device
- Surge capabilities up to 100A@10/1000us or 400A@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 Rating

| Characteristic                         | Symbol         | Value     | Unit                  |
|----------------------------------------|----------------|-----------|-----------------------|
| Non-repetitive peak impulse current    | $I_{PP}$       | 100A      | 10/1000us             |
| Non-repetitive peak On-state current   | $I_{TSM}$      | 50A       | 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 |                       |

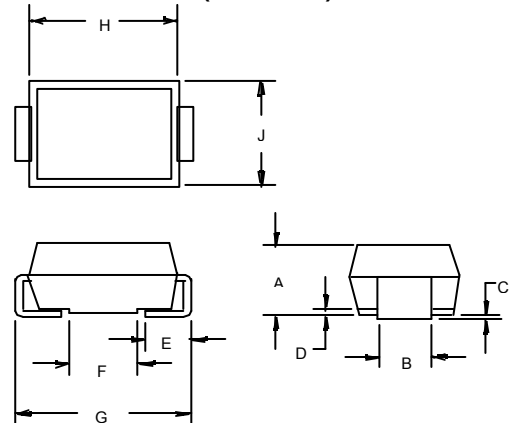
## Thermal Resistance

| 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 |                           |

## TSMBJ1006C THRU TSMBJ1024C

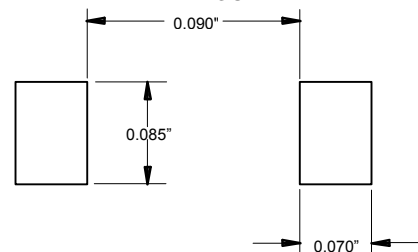
## Transient Voltage Protection Device 75 to 320 Volts

### 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



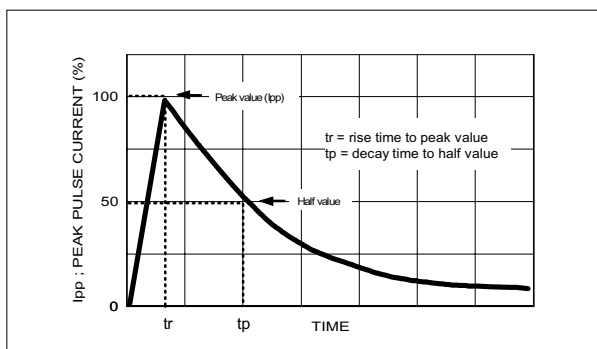
# TSMBJ1006C thru TSMBJ1024C

ELECTRICAL CHARACTERISTIC @25°C Unless otherwise specified

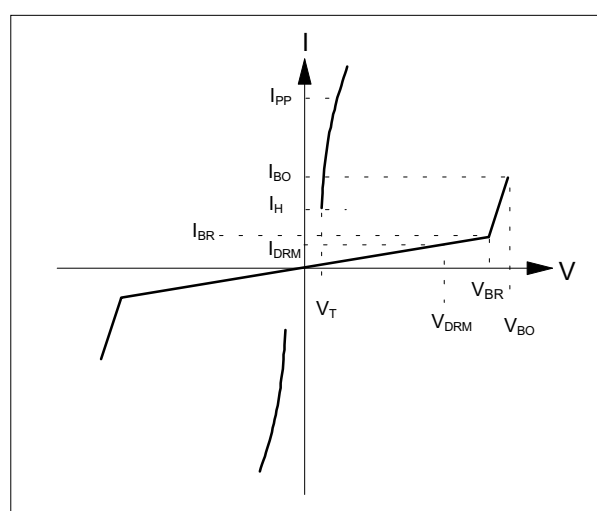
| Parameter  | Rated Repetitive Off-state Voltage | Off-state Leakage Current@ $V_{DRM}$ | Breakover Voltage | On-State Voltage @ $I_T=1.0A$ | Breakover Current | Holding Current | Off-State |
|------------|------------------------------------|--------------------------------------|-------------------|-------------------------------|-------------------|-----------------|-----------|
| 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.      |
| TSMBJ1006C | 75                                 | 5                                    | 98                | 5                             | 800               | 150             | 200       |
| TSMBJ1007C | 90                                 | 5                                    | 130               | 5                             | 800               | 150             | 120       |
| TSMBJ1010C | 140                                | 5                                    | 180               | 5                             | 800               | 150             | 120       |
| TSMBJ1012C | 160                                | 5                                    | 220               | 5                             | 800               | 150             | 120       |
| TSMBJ1016C | 190                                | 5                                    | 265               | 5                             | 800               | 150             | 80        |
| TSMBJ1018C | 220                                | 5                                    | 300               | 5                             | 800               | 150             | 80        |
| TSMBJ1022C | 275                                | 5                                    | 350               | 5                             | 800               | 150             | 80        |
| TSMBJ1024C | 320                                | 5                                    | 400               | 5                             | 800               | 150             | 80        |

## MAXIMUM RATED SURGE WAVEFORM

| Waveform        | Standard      | $I_{PP}$ (A) |
|-----------------|---------------|--------------|
| 2/10 $\mu s$    | GR-1089-CORE  | 500          |
| 8/20 $\mu s$    | IEC 61000-4-5 | 400          |
| 10/160 $\mu s$  | FCC Part 68   | 200          |
| 10/700 $\mu s$  | ITU-T K20/21  | 200          |
| 10/560 $\mu s$  | FCC Part 68   | 150          |
| 10/1000 $\mu s$ | GR-1089-CORE  | 100          |



| 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                      |
| $V_T$     | On state voltage                     |
| $I_{PP}$  | Peak pulse current                   |
| $C_O$     | Off-state capacitance                |



NOTE :

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. It does not exceed 30ms.
2. Off-state capacitance measured at  $f=1.0MHz$ ,  $1.0V_{rms}$  signal,  $V_R=2V_{dc}$  bias.

# TSMBJ1006C thru TSMBJ1024C

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

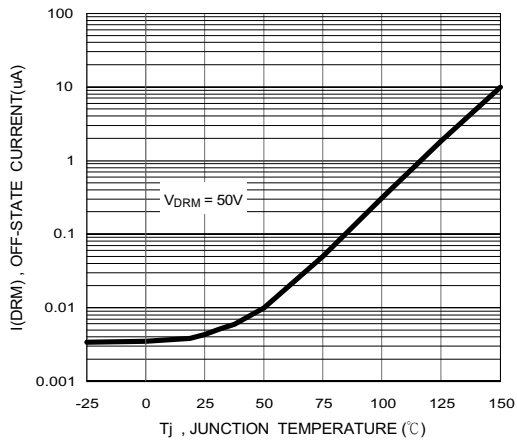


Fig.2 - Relative Variation of Breakdown Voltage v.s Junction Temperature

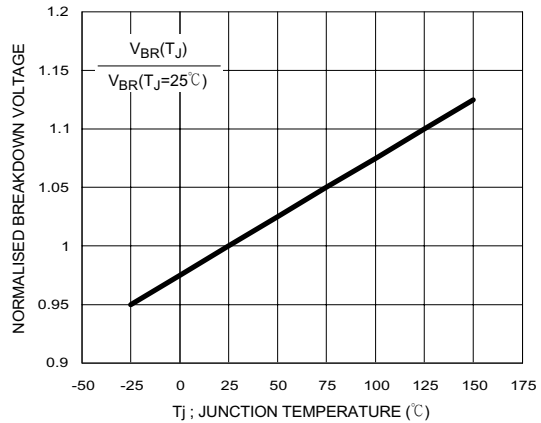


Fig.3 - Relative Variation of Breakover Voltage v.s Junction Temperature

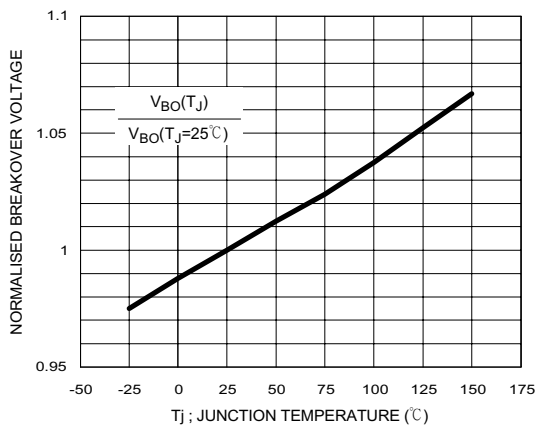


Fig.4 - On-State Current v.s On-State Voltage

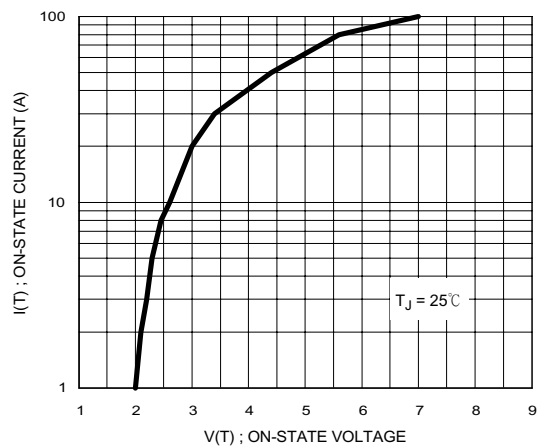


Fig.5 - Relative Variation of Holding Current v.s Junction Temperature

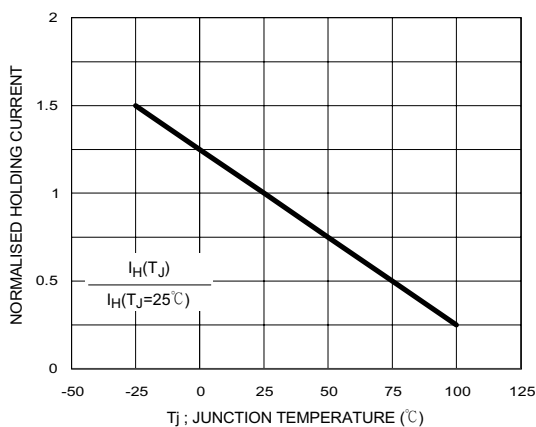
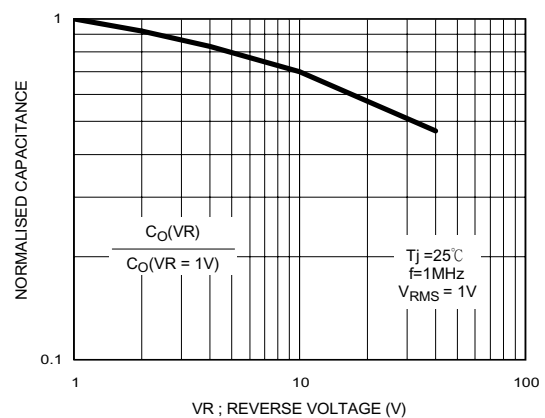
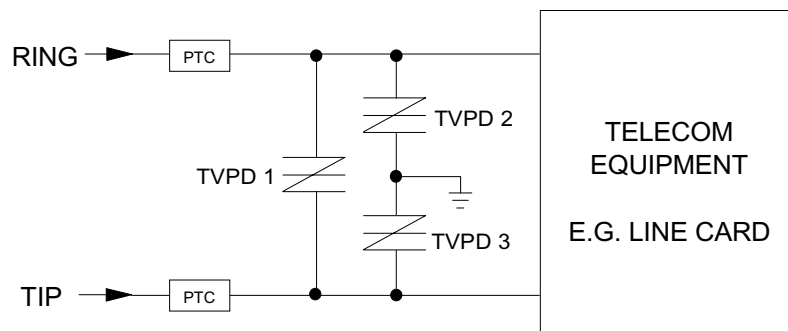
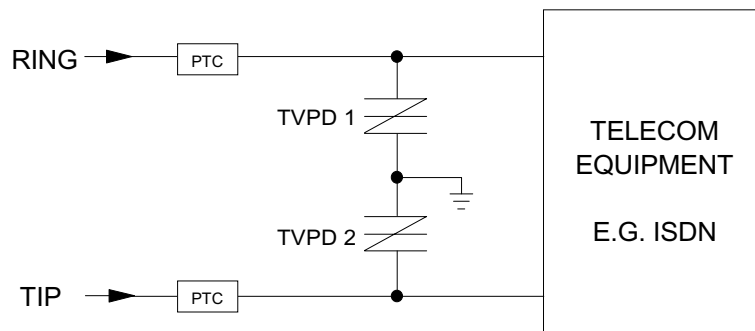
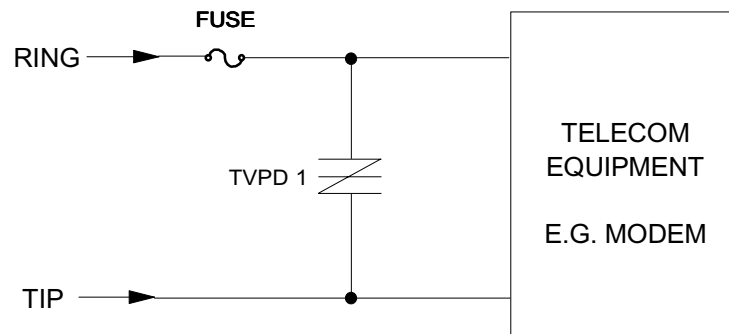


Fig.6 - Relative Variation of Junction Capacitance v.s Reverse Voltage Bias



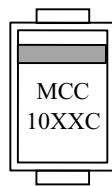
# TSMBJ1006C thru TSMBJ1024C

## TYPICAL APPLICATION CIRCUITS



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

## MARKING CODE



# Mouser Electronics

Authorized Distributor

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[TSMBJ1018C](#) [TSMBJ1006C/TP](#) [TSMBJ1007C/TP](#) [TSMBJ1010C/TP](#) [TSMBJ1012C/TP](#) [TSMBJ1016C/TP](#)  
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