

RoHS Compliant Product  
 A suffix of "-C" specifies halogen free

**FEATURES**

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low Power Loss, High Efficiency
- High Current Capability, low  $V_F$

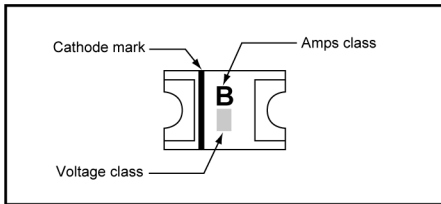
**APPLICATION**

- Switching Mode Power Supply Applications
- Portable Equipment Battery Applications
- High Frequency Rectification
- DC/DC Converter
- Telecommunication

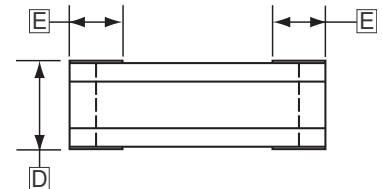
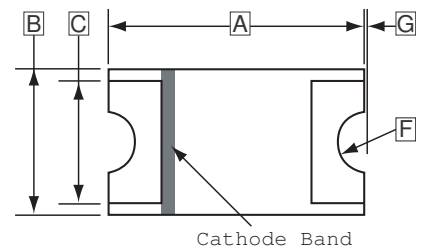
**MECHANICAL DATA**

- Case: Packed with FRP substrate and epoxy underfilled
- Terminals: Pure Tin plated (Lead-Free), solderable per MIL-STD-750, Method 2026.
- Polarity: Laser Cathode band marking

**MARKING**



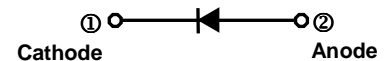
**0805**



| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 1.90       | 2.10 | E    | 0.35       | 0.60 |
| B    | 1.20       | 1.40 | F    | R 0.275    |      |
| C    | 1.00 TYP.  |      | G    | 0.05 REF.  |      |
| D    | 0.7        | 1.05 |      |            |      |

**PACKAGE INFORMATION**

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| 0805    | 3K  | 7 inch      |



**ORDER INFORMATION**

| Part Number         | Type                            |
|---------------------|---------------------------------|
| MSCD052-C~MSCD054-C | Lead (Pb)-free and Halogen-free |

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter   | Symbol      | Part Number |           |           | Unit               |
|---|-------------|-------------|-----------|-----------|--------------------|
|   |             | MSCD052-C   | MSCD053-C | MSCD054-C |                    |
| Repetitive Peak Reverse Voltage                         | $V_{RRM}$   | 20          | 30        | 40        | V                  |
| Average Forward Current                                 | $I_{F(AV)}$ | 0.5         |           |           | A                  |
| Peak Forward Surge Current @8.3ms Single Half Sine-Wave | $I_{FSM}$   | 5           |           |           | A                  |
| Operating Temperature Range                             | $T_{opr}$   | -40~125     |           |           | $^{\circ}\text{C}$ |
| Junction Temperature Range                              | $T_J$       | 125         |           |           | $^{\circ}\text{C}$ |
| Storage Temperature Range                               | $T_{STG}$   | -40~125     |           |           | $^{\circ}\text{C}$ |

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                                   |           | Symbol          | Min. | Typ. | Max. | Unit                 | Test Conditions                                    |
|---|-----------|-----------------|------|------|------|----------------------|--|
| Forward Voltage                             | MSCD052-C | $V_F$           | -    | 0.32 | -    | V                    | $I_F=0.1\text{A}$                                  |
|   |           |                 | -    | 0.40 | 0.44 |                      | $I_F=0.5\text{A}$                                  |
|   | MSCD053-C |                 | -    | 0.32 | -    |                      | $I_F=0.1\text{A}$                                  |
|   |           |                 | -    | 0.40 | 0.46 |                      | $I_F=0.5\text{A}$                                  |
|   | MSCD054-C |                 | -    | 0.32 | -    |                      | $I_F=0.1\text{A}$                                  |
|   |           |                 | -    | 0.40 | 0.48 |                      | $I_F=0.5\text{A}$                                  |
| Repetitive Peak Reverse Current             |           | $I_{RRM}$       | -    | 15   | 100  | $\mu\text{A}$        | $V_R=\text{Max. } V_{RRM}, T_A=25^{\circ}\text{C}$ |
| Junction Capacitance                        |           | $C_J$           | -    | 28   | -    | pF                   | $V_R=4\text{V}, f=1\text{MHz}$                     |
| Typical Thermal Resistance Junction-Ambient |           | $R_{\theta JA}$ | -    | 120  | -    | $^{\circ}\text{C/W}$ |  |
| Typical Thermal Resistance Junction-Lead    |           | $R_{\theta JL}$ | -    | 28   | -    | $^{\circ}\text{C/W}$ |  |

**RATINGS AND CHARACTERISTIC CURVES**

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

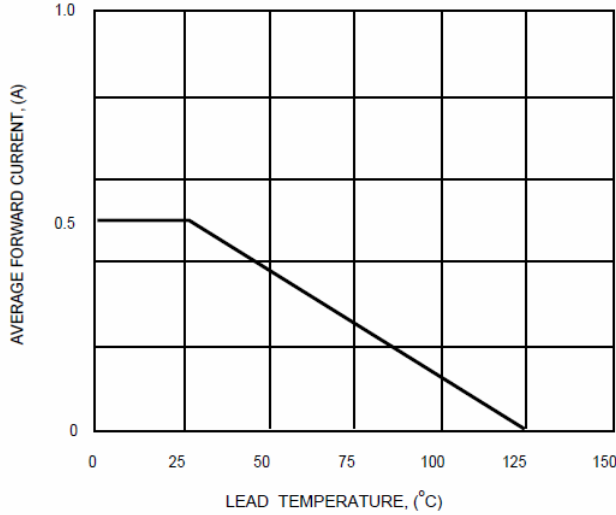


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

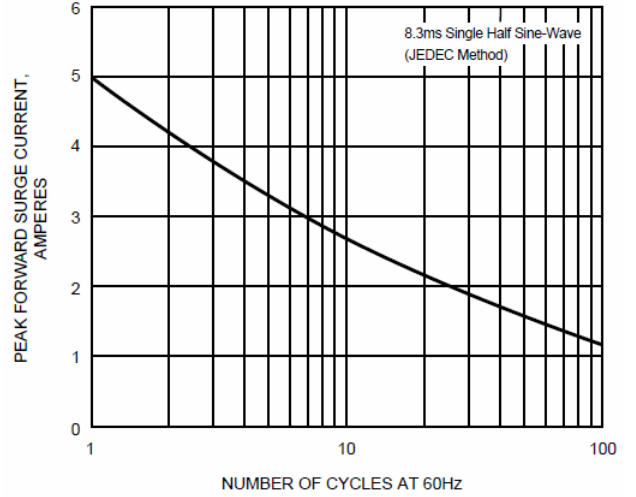


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

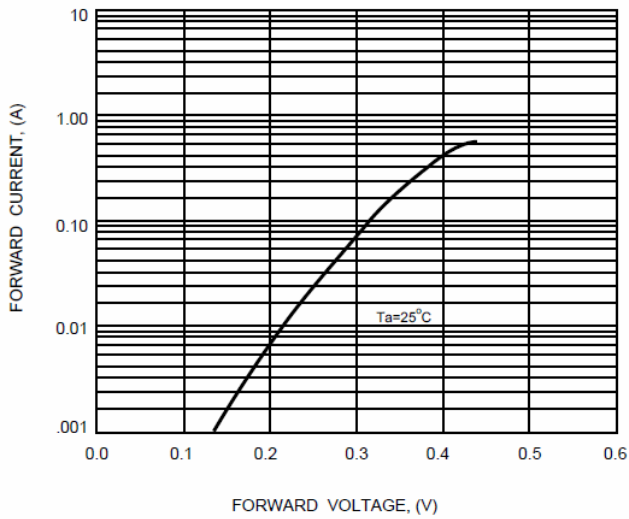


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

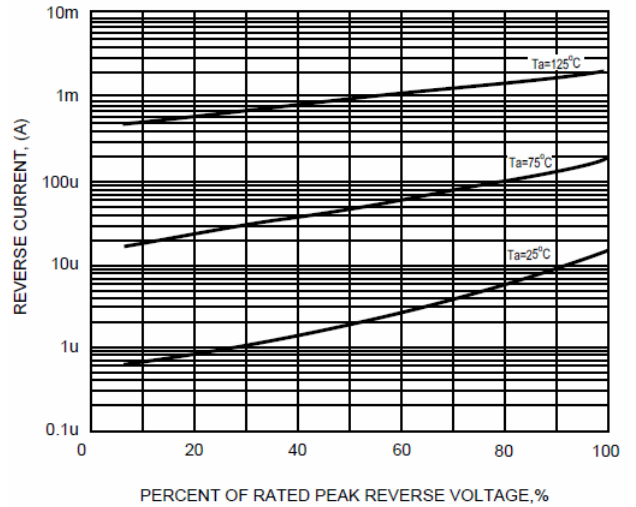


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

