

US3MBF

3.0AMPS. SURFACE MOUNT ULTRA FAST RECTIFIERS

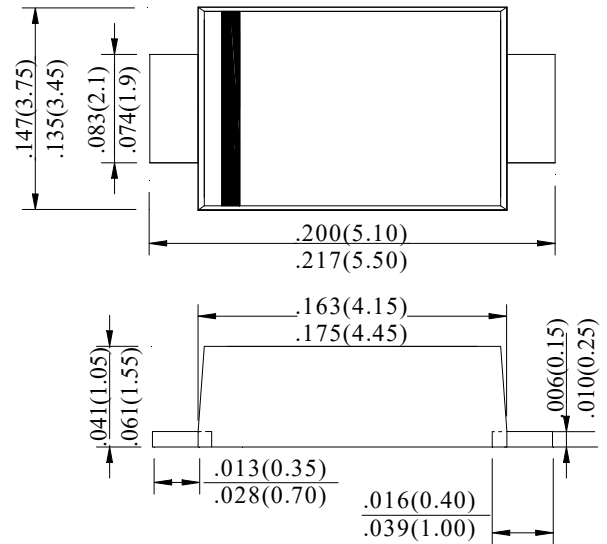
FEATURE

- . Low leakage
- . Low forward voltage drop
- . High current capability
- . High surge capability
- . High reliability
- . High temperature soldering guaranteed:
260°C/10 seconds at terminals.
- . For surface mounted application.
- . Easy pick and place.

MECHANICAL DATA

- . Terminal: Plated axial leads solderable per MIL-STD 202E, method 208C
- . Case: Molded with UL-94 Class V-0 recognized Flame Retardant Epoxy
- . Polarity: color band denotes cathode
- . Mounting position: any

SMBF



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%

| Type Number | SYM BOL | US3MBF | units |
|---|-------------|--------------|--------------------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 1000 | V |
| Maximum RMS Voltage | V_{RMS} | 700 | V |
| Maximum DC blocking Voltage | V_{DC} | 1000 | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 3.0 | A |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 90.0 | A |
| Maximum Forward Voltage at 3.0 A DC | V_F | 1.7 | V |
| Maximum DC Reverse Current @ $T_J=25^\circ\text{C}$ at rated DC blocking voltage @ $T_J=125^\circ\text{C}$ | I_R | 5.0 100.0 | μA |
| Maximum Reverse Recovery Time (Note 1) | t_{rr} | 75 | nS |
| Typical Junction Capacitance (Note 2) | C_J | 15 | pF |
| Typical Thermal Resistance (Note 3) | $R_{(JA)}$ | 60 | $^\circ\text{C/W}$ |
| | $R_{(JC)}$ | 16 | |
| Storage Temperature | T_{STG} | -55 to +150 | $^\circ\text{C}$ |
| Operation Junction Temperature | T_J | -55 to +150 | $^\circ\text{C}$ |

Note:

1. Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$
2. Measured at 1.0 MHz and applied reverse voltage of 4.0Vdc
3. Measured on P.C.Board with $0.2 \times 0.2''$ ($5.0 \times 5.0\text{mm}$) Copper Pad Areas.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

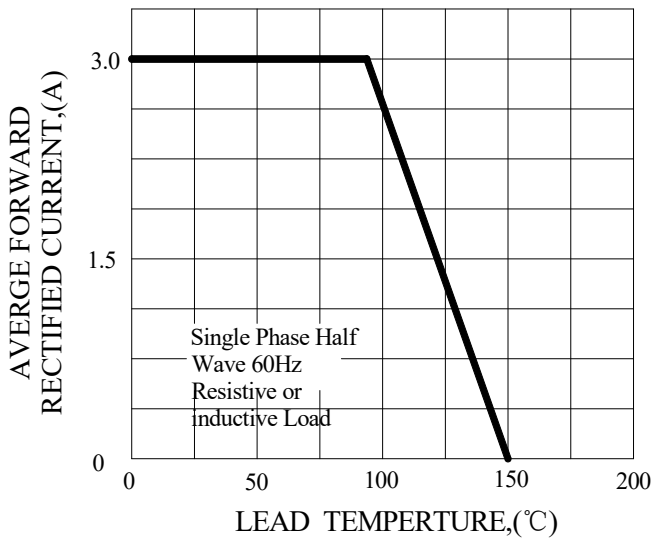


FIG.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

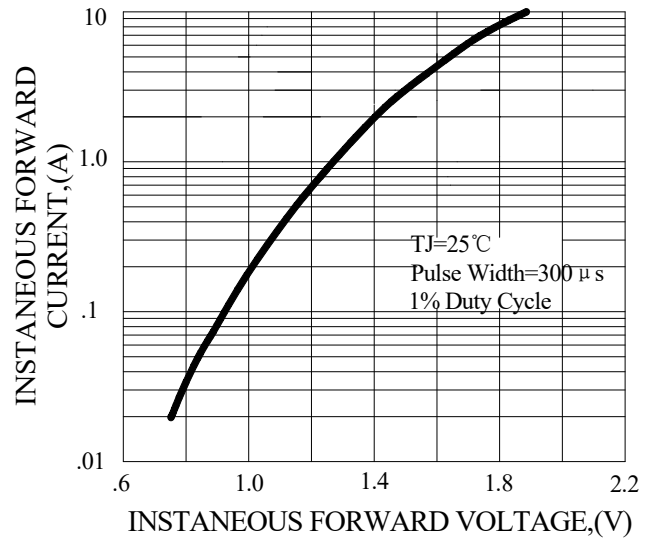


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

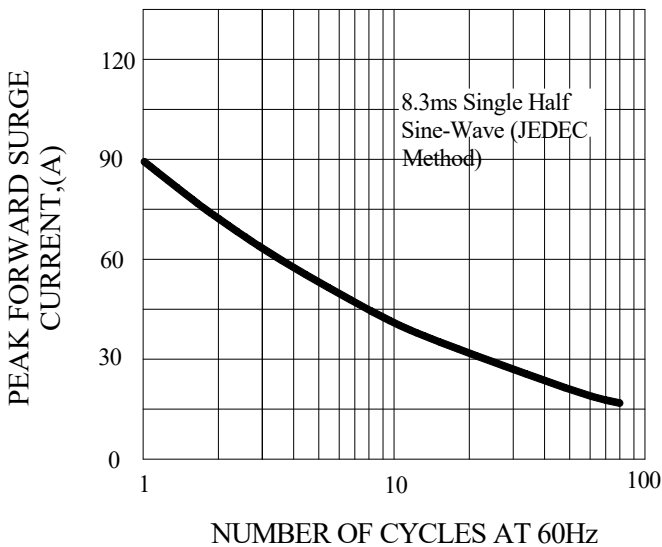


FIG.4-TYPICAL REVERSE CHARACTERISTICS

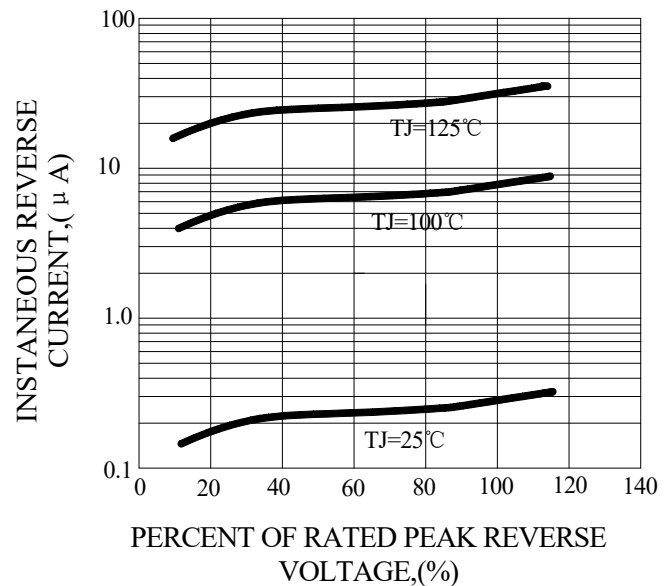
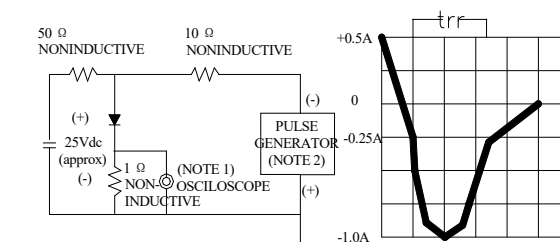


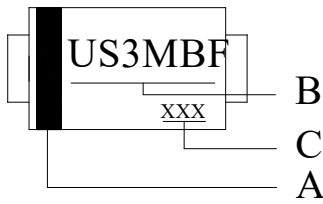
FIG.5-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES:1. Rise Time=7ns max, Input Impedance= 1 megohm.22pF.
2. Rise Time=10ns max, Source Impedance= 50 ohms.

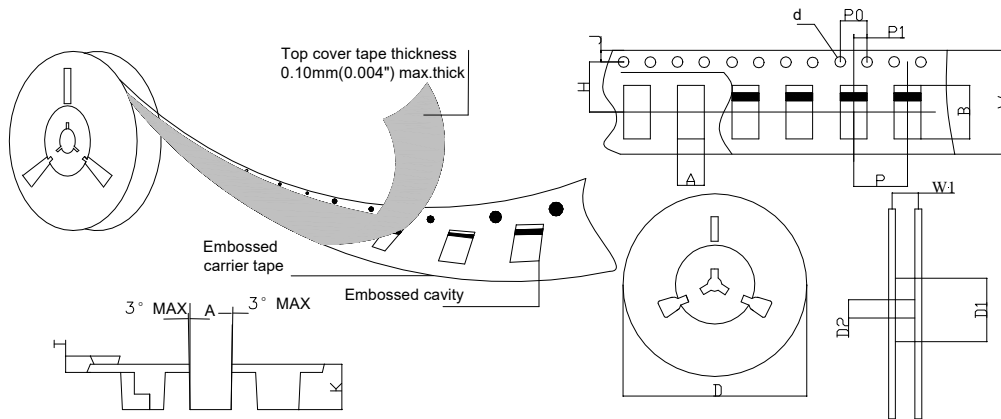
Marking and packaging illustration

1、Marking



| SYMBOL | Explanation |
|--------|----------------------------|
| A | Color Band Denotes Cathode |
| B | Product name |
| C | Date Code |

2、Packaging



| SPECIFICATIONS mm(inch) | | PACKAGE | SPECIFICATIONS mm(inch) | | PACKAGE |
|----------------------------|------------|-----------------|----------------------------|------------|----------------|
| ITEM | SYM BOL | SMBF | ITEM | SYM BOL | SMBF |
| Carrier width | A | 3.81(0.150)Max | Carrier depth | K | 1.6(0.063)Typ |
| Carrier length | B | 5.61(0.221)Max | Punch hole pitch | P | 8.00(0.315)Typ |
| Sprocket hole | d | ø1.55(0.061)Typ | Sprocket hole pitch | P0 | 4.00(0.157)Typ |
| Reel outer diameter | D | 330.0(13.0)Typ | Embossment center | P1 | 2.00(0.079)Typ |
| Reel inner diameter | D1 | 153.0(6.02)Min | Overall tape thickness | T | 0.30(0.012)Typ |
| Feed hole diameter | D2 | 77.0(3.03)Typ | Tape width | W | 12.0(0.472)Typ |
| Sprocket hole position | J | 1.75(0.069)Typ | Reel width | W1 | 12.4(0.488)Min |
| Punch hole position | H | 5.50(0.216)Typ | | | |