# *SM1X0 SERIES*

## *SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER*

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# SM120 THRU SM160

## *SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER*

康 比 電 子
HORNBY ELECTRONIC

| *REVERSE VOLTAGE:* | **20 to 60 VOLTS** |
|---|---|
| *FORWARD CURRENT:* | **1.0 AMPERE** |

### *FEATURES*

· Plastic package has Underwriters Laboratory
  Flammability Classification 94V-0
· Low power loss, high efficiency
· Guardring for overvoltage protection
· For use in low voltage, high frequency inverters
  free wheeling, and porlarlity protection applications

### *MECHANICAL DATA*

Case: Molded plastic, MELF
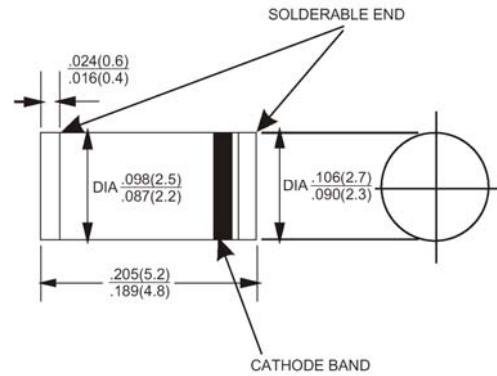Epoxy: UL 94V-O rate flame retardant
Terminals: Solder plated, solderable per MIL-STD-750,
method 208 guaranteed
Polarity: Color band denotes cathode end
Mounting position: Any
Weight: 0.005 ounce, 0.12 gram

**MELF**

SOLDERABLE END

.024(0.6)
.016(0.4)

DIA .098(2.5) / .087(2.2)

DIA .106(2.7) / .090(2.3)

.205(5.2) / .189(4.8)

CATHODE BAND

**Dimensions in inches and (millimeters)**

## *Maximum Ratings and Electrical Characteristics*

Ratings at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60$H_Z$, resistive or inductive load.

For capacitive load, derate current by 20%.

| | Symbols | *SM120* | *SM130* | *SM140* | *SM150* | *SM160* | Units |
|---|---|---|---|---|---|---|---|
| **Maximum Recurrent Peak Reverse Voltage** | $V_{RRM}$ | 20 | 30 | 40 | 50 | 60 | **Volts** |
| **Maximum RMS Voltage** | $V_{RMS}$ | 14 | 21 | 28 | 35 | 42 | **Volts** |
| **Maximum DC Blocking Voltage** | $V_{DC}$ | 20 | 30 | 40 | 50 | 60 | **Volts** |
| **Maximum Average Forward Rectified Current at Derating Lead Temperature** | $I_{(AV)}$ | 1.0 | | | | | **Amp** |
| **Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)** | $I_{FSM}$ | 40 | | | | | **Amp** |
| **Maximum Forward Voltage at 1.0A DC** | $V_F$ | 0.55 | | | 0.70 | | **Volts** |
| **Maximum Reverse Current          at T$_A$=25℃ at Rated DC Blocking Voltage          T$_A$=100℃** | $I_R$ | 1.0 / 10 | | | | | **mAmp** |
| **Typical Junction Capacitance (Note 1)** | $C_J$ | 110 | | | | | **pF** |
| **Typical Thermal Resistance (Note 2)** | $R_{0JA}$ | 50 | | | | | **℃/W** |
| **Operating and Storage Temperature Range** | $T_J$，Tstg | -50 to +125 | | | -50 to + 150 | | **℃** |

**NOTES:**

1- Measured at 1 MH$_Z$ and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance (Junction to Ambient): Vertical PC Board Mounting, 0.5" (12.7mm) Lead Length.

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## *RATINGS AND CHARACTERISTIC CURVES*
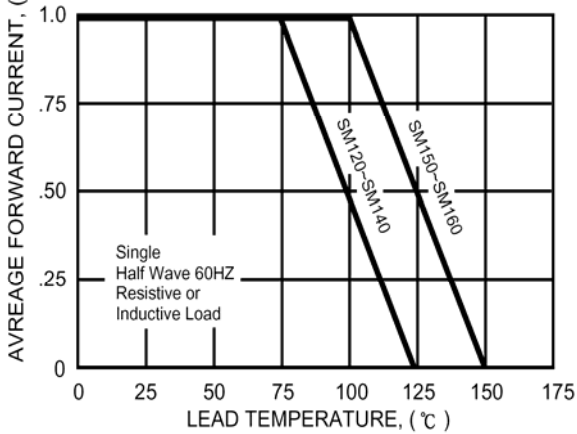


FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE



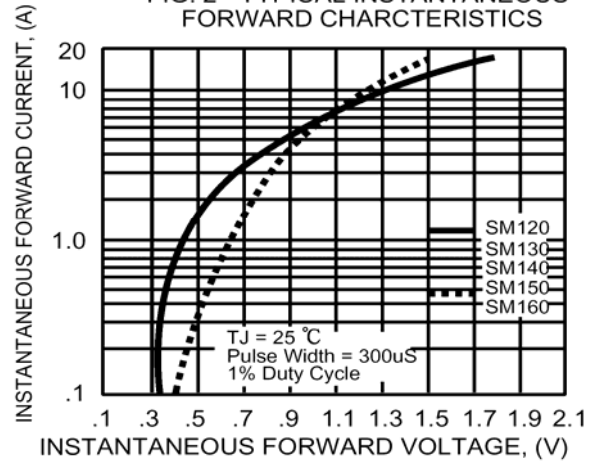FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARCTERISTICS



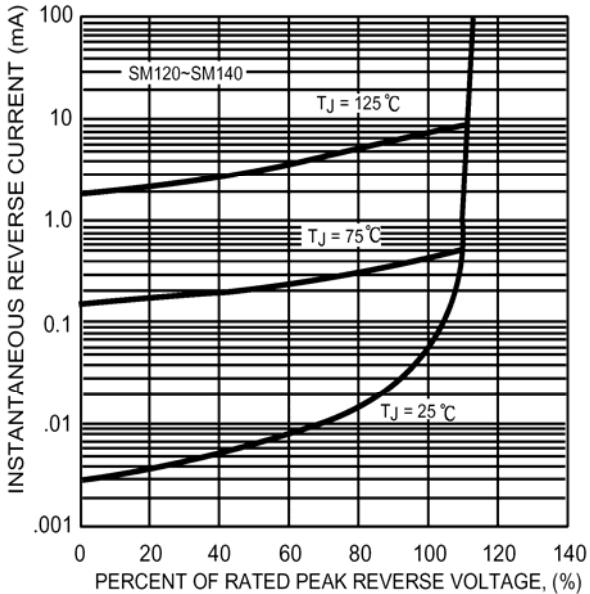FIG. 3A - TYPICAL REVERSE CHARACTERISTICS



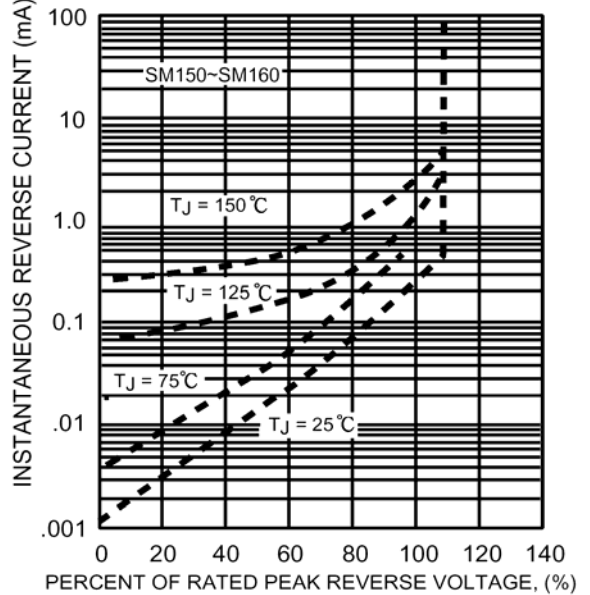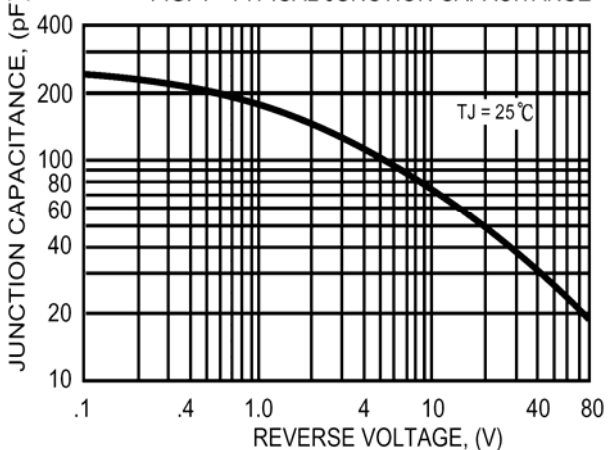FIG. 3 - TYPICAL REVERSE CHARACTERISTICS



FIG. 4 - TYPICAL JUNCTION CAPACITANCE



FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT