



# BY127M, BY133, EM513

## PLASTIC SILICON RECTIFIERS

**VOLTAGE** 1250 to 1600 Volts **CURRENT** 1.0 Ampere

DO-41

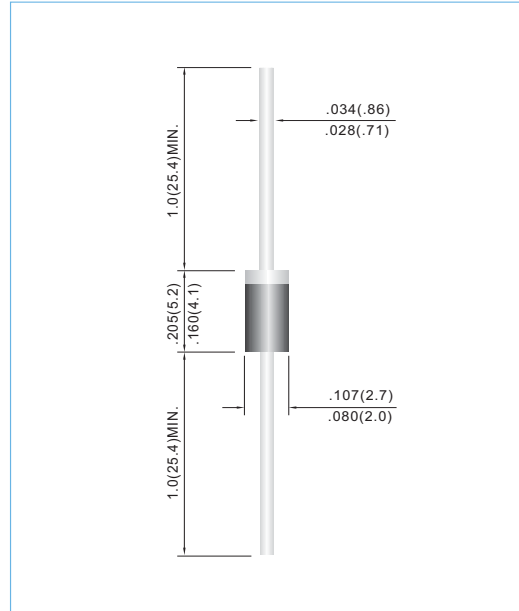
Unit: inch(mm)

### FEATURES

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Exceeds environmental standards of MIL-S-19500/228
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: DO-41 Molded plastic
- Epoxy: UL 94V-O rate flame retardant.
- Lead: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.012 ounces, 0.30 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	BY127M	BY133	EM513	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1250	1300	1600	V
Maximum RMS Voltage	$V_{RMS}$	875	910	1120	V
Maximum DC Blocking Voltage	$V_{DC}$	1250	1300	1600	V
Maximum Average Forward Current .375" (9.5mm) lead length at $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.0			A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30			A
Maximum Forward Voltage at 1.0A	$V_F$	1.1			V
Maximum DC Reverse Current at $T_J=25^\circ\text{C}$ Rated DC Blocking Voltage $T_J=100^\circ\text{C}$	$I_R$	5.0 500			$\mu\text{A}$
Typical Junction capacitance (Note 1)	$C_J$	15			pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$ $R_{\theta JL}$	50 25			$^\circ\text{C} / \text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150			$^\circ\text{C}$

#### NOTES:

1. Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
2. Thermal Resistance from Junction to Ambient and from junction to lead at 0.375" (9.5mm) lead length P.C.B. mounted.



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## RATING AND CHARACTERISTIC CURVES

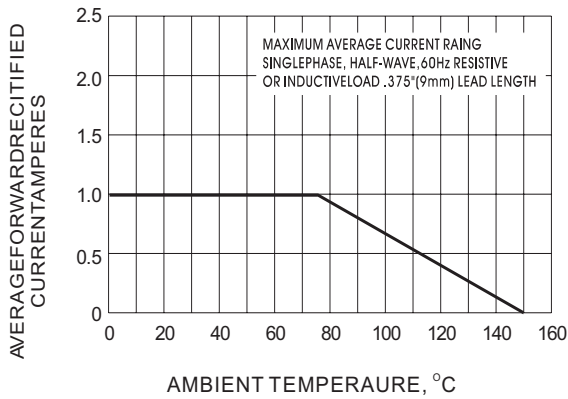


Fig.1-FORWARD CURRENT DERATING CURVE

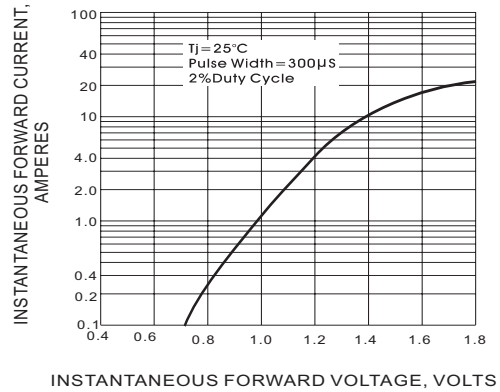


Fig.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

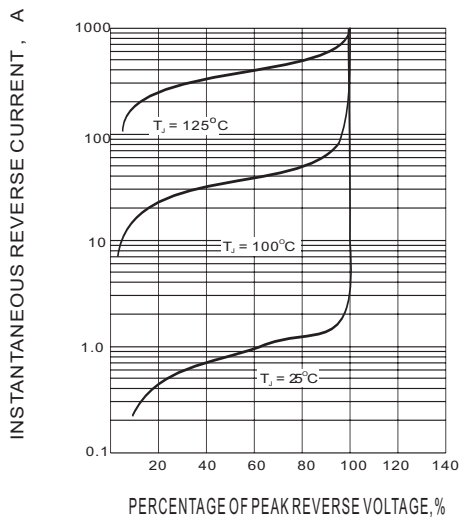


Fig.3-TYPICAL REVERSE CHARACTERISTIC

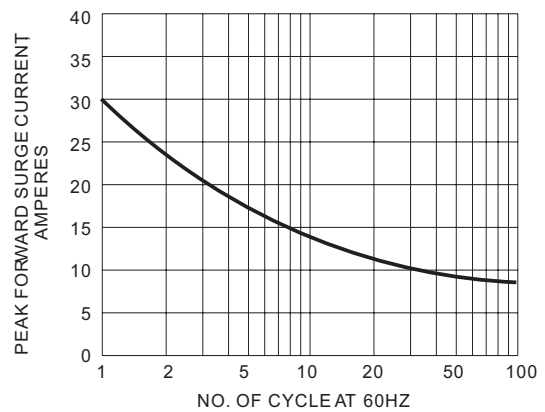


Fig.4-MAXIMUM NON-REPETITIVE SURGE CURRENT

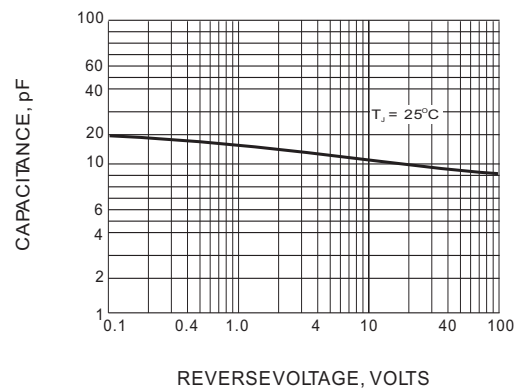


Fig.5-TYPICAL JUNCTION CAPACITANCE