



# HIGH VOLTAGE 1 AMP SILICON RECTIFIERS BY127/133 & EM513 THRU EM518

## TECHNICAL SPECIFICATION

### FEATURES

- Low cost construction utilizing void - free moulded plastic technique
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Diffused junction
- High surge current capability
- Low leakage
- High temperature soldering capability : 250°C/10 seconds/9.5mm (.375in.) lead length at 2.3kg (5lb) tension
- Easily cleaned with Freon, Alcohol, Chlorothene and other similar solvents

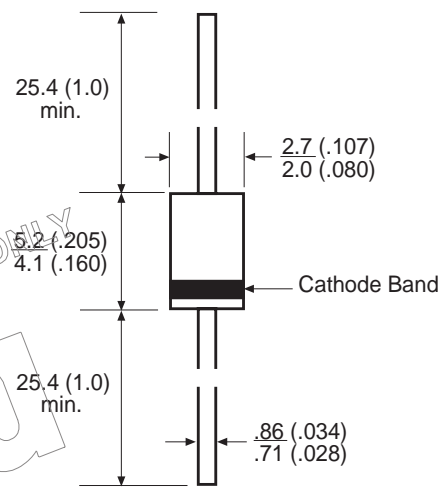
### VOLTAGE

1250 to 2000 Volts

**CURRENT**  
1.0 Amp

### DIMENSIONS - millimeters (inches)

DO-41



### MECHANICAL DATA

Case : JEDEC DO-41, moulded plastic.  
 Terminals : Plated axial leads, solderable per MIL-STD-202, Method 208.  
 Polarity : Colour band denotes cathode end.  
 Mounting Position : Any  
 Weight : 0.3 grams (0.012 ounce)

### 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%.

	Symbols	BY127	BY133	EM513	EM516	EM518	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1250	1300	1600	1800	2000	V
Maximum RMS Voltage	$V_{RMS}$	875	910	1120	1260	1400	V
Maximum DC Blocking Voltage	$V_{DC}$	1250	1300	1600	1800	2000	V
Maximum Average Forward Rectified Current 9.5mm (.375in.) Lead Length at $T_A = 75^\circ\text{C}$	$I_{F(AV)}$	1.0					A
Peak Forward Surge Current, 8.3 ms single half sine - wave superimposed on rated load	$I_{FSM}$	30					A
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	1.3					V
Maximum Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_A = 25^\circ\text{C}$					$\mu\text{A}$
		$T_A = 100^\circ\text{C}$					$\mu\text{A}$
Maximum Full load Reverse Current Full Cycle Average, 9.5mm (.375in.) Lead Length at $T_L = 75^\circ\text{C}$	$I_{R(AV)}$	30					$\mu\text{A}$
Typical Junction Capacitance (see Note 1)	$C_J$	30					pF
Typical Thermal Resistance (see Note 2)	$R_{THja}$	50					$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	- 50 to + 175					$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 50 to + 175					$^\circ\text{C}$

Notes :

1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
2. Thermal Resistance from Junction to Ambient

## RATING AND CHARACTERISTIC CURVES

FIG. 1 - FORWARD CURRENT DERATING CURVE

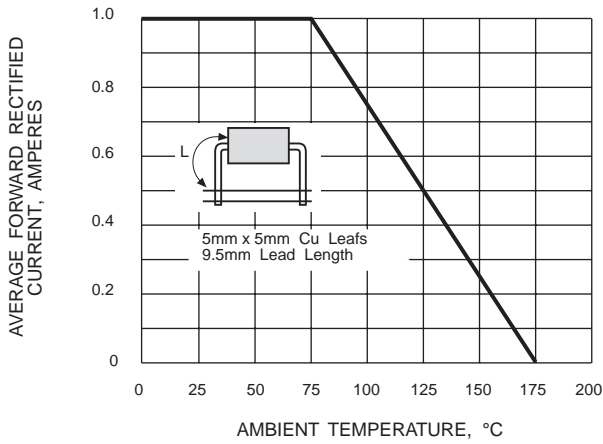


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

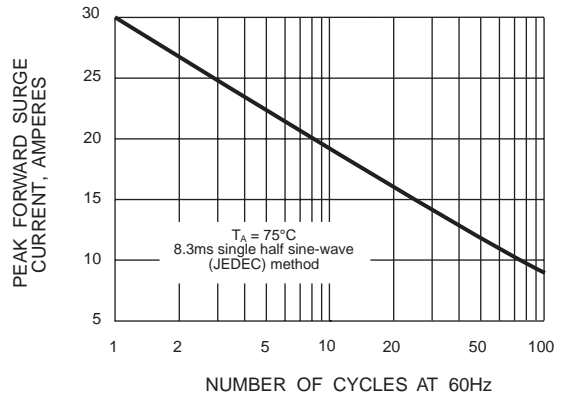


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

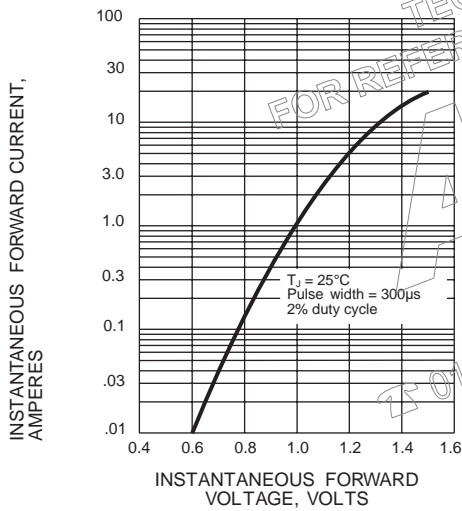


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

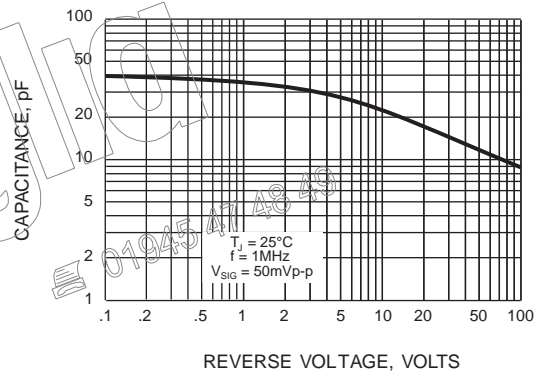


FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

