

BY133 THRU EM520

TECHNICAL SPECIFICATIONS OF SILICON RECTIFIER

VOLTAGE RANGE - 1300 to 2000 Volts CURRENT – 1.0 Ampere

**FEATURES**

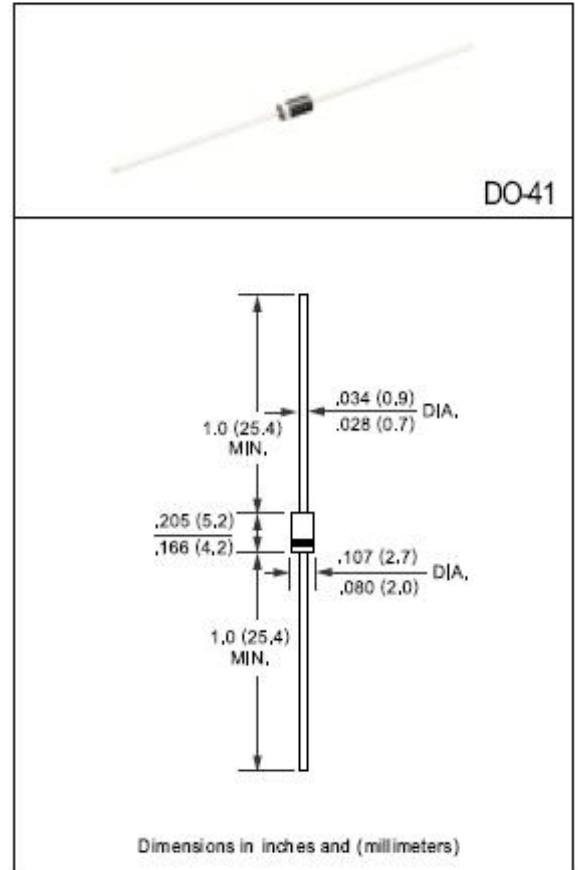
- \* Low cost
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability

**MECHANICAL DATA**

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.33 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%.



	SYMBOL	BY133	EM513	EM516	EM520	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1300	1600	1800	2000	Volts
Maximum RMS Voltage	$V_{RMS}$	910	1100	1560	1400	Volts
Maximum DC Blocking Voltage	$V_{OC}$	1300	1600	1800	2000	Volts
Maximum Average Forward Rectified Current at $T_A = 75^\circ\text{C}$	$I_o$	1.0				Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30				Amps
Maximum Instantaneous Forward Voltage at 1.0A DC	$V_F$	1.1				Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@ $T_A = 25^\circ\text{C}$	5.0				uAmps
	@ $T_A = 100^\circ\text{C}$	500				
Maximum Full Load Reverse Current Average, Full Cycle .375*(9.5mm) lead length at $T_L = 75^\circ\text{C}$	$I_R$	30				uAmps
Typical Junction Capacitance (Note)	$C_J$	15				pF
Typical Thermal Resistance	$R_{\theta JA}$	50				$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 175				$^\circ\text{C}$

NOTES : Measured at 1 MHz and applied reverse voltage of 4.0 volts

# RATING AND CHARACTERISTIC CURVES (BY133 THRU EM520)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

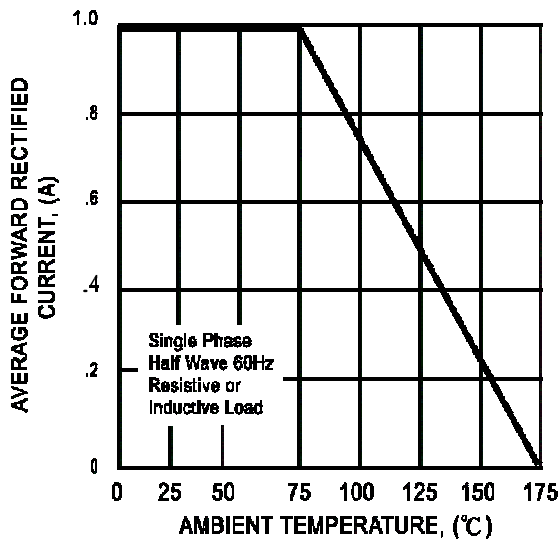


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

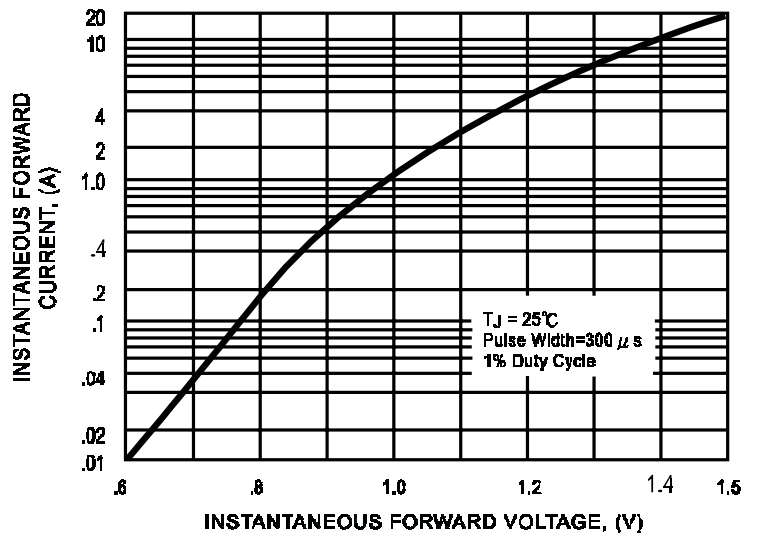


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

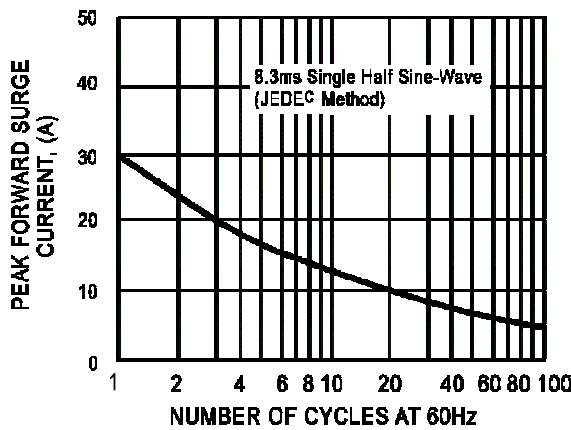


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

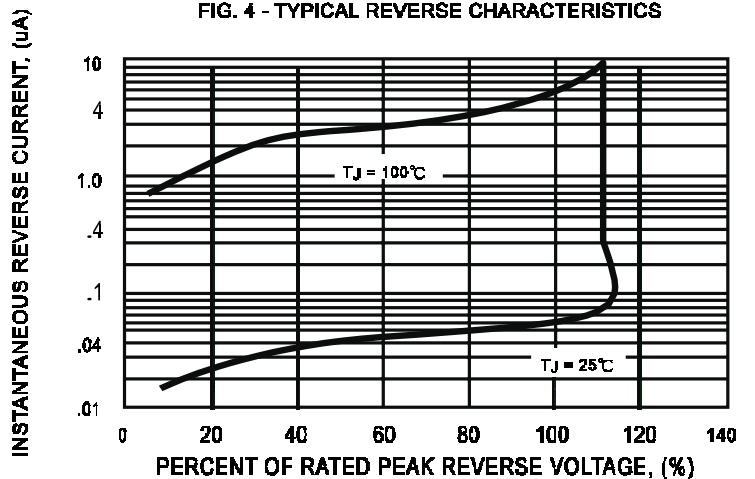


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

