



**DC COMPONENTS CO., LTD.**

RECTIFIER SPECIALISTS

**BY133  
THRU  
EM520**

**TECHNICAL SPECIFICATIONS OF SILICON RECTIFIER**  
VOLTAGE RANGE - 1300 to 2000 Volts CURRENT - 1.0 Ampere

**FEATURES**

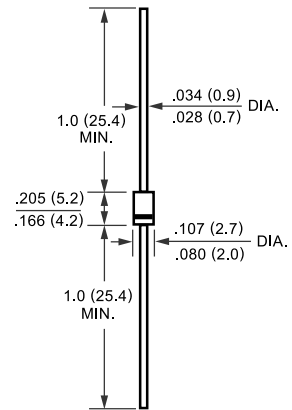
- \* Low cost
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability

**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



DO-41



Dimensions in inches and (millimeters)

**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 <sub>RRM</sub>	1300	1600	1800	2000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	910	1100	1560	1400	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	1300	1600	1800	2000	Volts
Maximum Average Forward Rectified Current at T <sub>A</sub> = 75°C	I <sub>O</sub>	1.0				Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	30				Amps
Maximum Instantaneous Forward Voltage at 1.0A DC	V <sub>F</sub>	1.1				Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	@T <sub>A</sub> = 25°C	5.0			uAmps
		@T <sub>A</sub> = 100°C	500			
Maximum Full Load Reverse Current Average, Full Cycle .375*(9.5mm) lead length at T <sub>L</sub> = 75°C		30				uAmps
Typical Junction Capacitance (Note)	C <sub>J</sub>	15				pF
Typical Thermal Resistance	R <sub>θJA</sub>	50				°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to + 175				°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

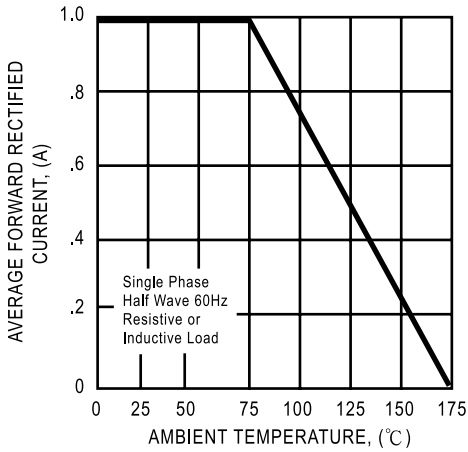


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

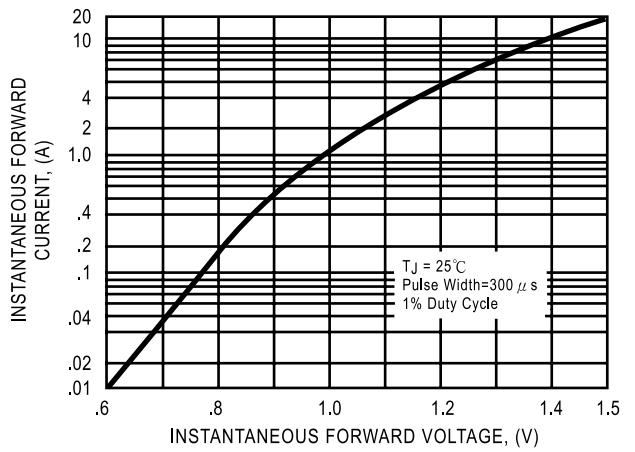


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

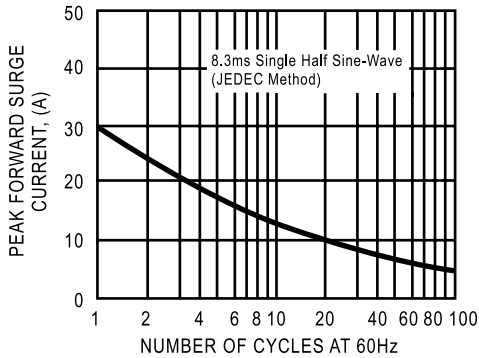


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

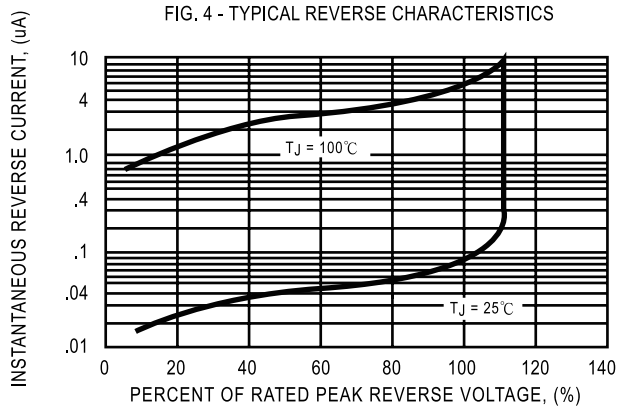
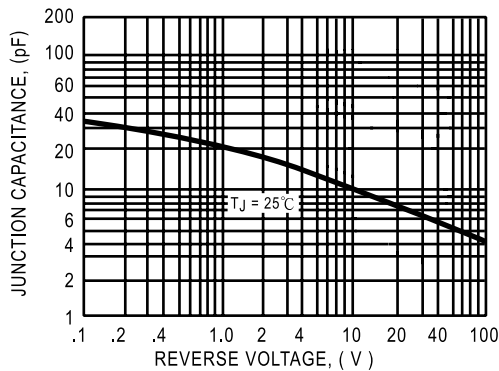


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



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