



**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**

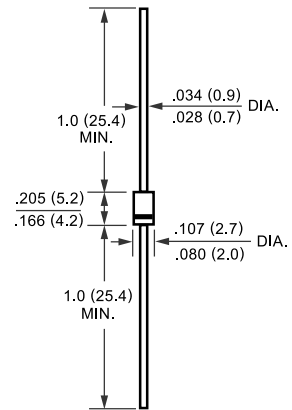
- \* Low cost
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability

**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	VRRM	1300	1600	1800	2000	Volts
Maximum RMS Voltage	VRMS	910	1100	1560	1400	Volts
Maximum DC Blocking Voltage	VDC	1300	1600	1800	2000	Volts
Maximum Average Forward Rectified Current at TA = 75°C	Io	1.0				Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	IFSM	30				Amps
Maximum Instantaneous Forward Voltage at 1.0A DC	VF	1.1				Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	IR	@TA = 25°C	5.0			uAmps
		@TA = 100°C	500			
Maximum Full Load Reverse Current Average, Full Cycle .375*(9.5mm) lead length at TL = 75°C		30				uAmps
Typical Junction Capacitance (Note)	CJ	15				pF
Typical Thermal Resistance	RθJA	50				°C/W
Operating and Storage Temperature Range	TJ, TSTG	-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

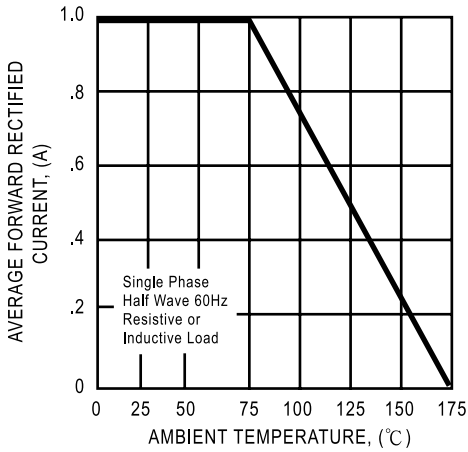


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

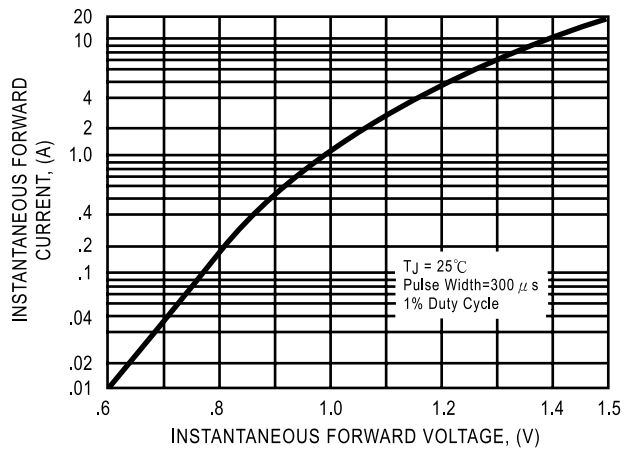


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

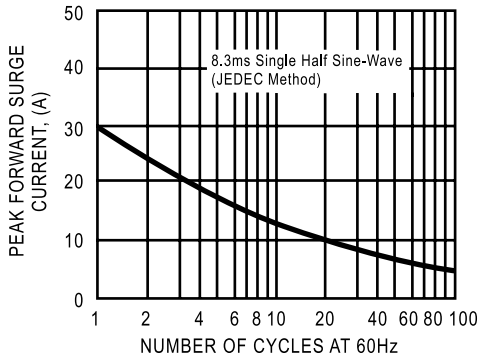


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

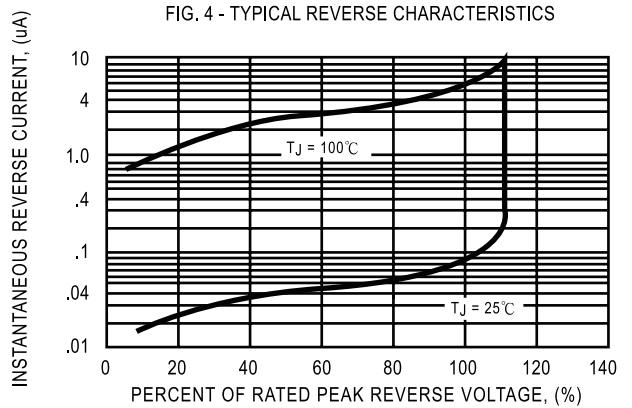
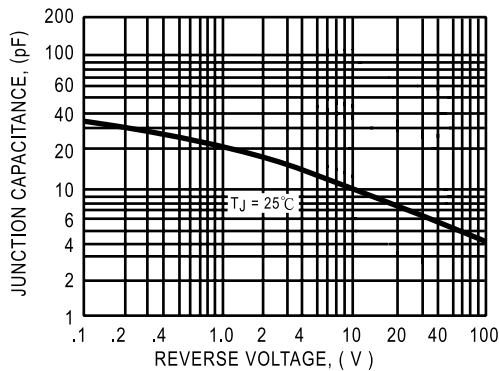


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



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