

# BY127, BY133, EM513, EM516

## GENERAL PURPOSE PLASTIC RECTIFIER

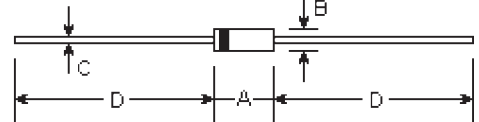
Reverse Voltage - 1250 to 1800 Volts

Forward Current - 1.0 Ampere

### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Construction utilizes void-free molded plastic technique
- Low reverse leakage
- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability

### DO-41



### Mechanical Data

- **Case:** Molded plastic, DO-41
- **Lead:** Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.012 ounce, 0.33 gram

DIMENSIONS					
DIM	inches		mm		Note
	Min.	Max.	Min.	Max.	
A	0.165	0.205	4.2	5.2	
B	0.079	0.106	2.0	2.7	ϕ
C	0.028	0.034	0.71	0.86	ϕ
D	1.000	-	25.40	-	

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

	Symbols	BY127	BY133	EM513	EM516	Units
Maximum repetitive peak reverse voltage	$V_{RRM}$	1250	1300	1600	1800	Volts
Maximum RMS voltage	$V_{RMS}$	875	910	1120	1270	Volts
Maximum DC blocking voltage	$V_{DC}$	1250	1300	1600	1800	Volts
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$	$I_{(AV)}$	1.0				Amp
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method)	$I_{FSM}$	30.0				Amps
Maximum forward voltage at 1.0A DC and 25°C	$V_F$	1.1				Volts
Maximum full load reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	$I_R$	5.0 200.0				μ A
Typical junction capacitance (Note 1)	$C_J$	15.0				p F
Typical thermal resistance (Note 2)	$R_{\theta JA}$ $R_{\theta JL}$	50.0 25.0				°C/W
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150				°C

#### Notes:

(1) Measured at 1.0MHz and applied reverse voltage of 4.0 VDC

(2) Thermal resistance junction to ambient and from junction to lead at 0.375" (9.5mm) lead length, P.C.B. mounted

## RATINGS AND CHARACTERISTIC CURVES

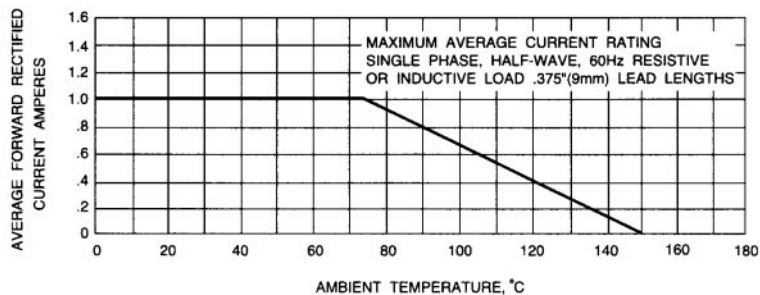


Fig. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

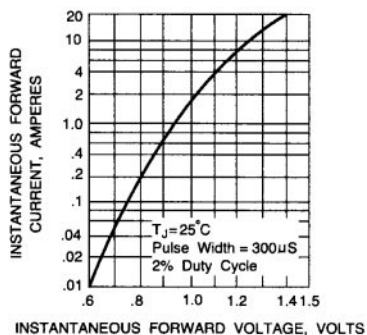


Fig. 2 - TYPICAL FORWARD CHARACTERISTICS

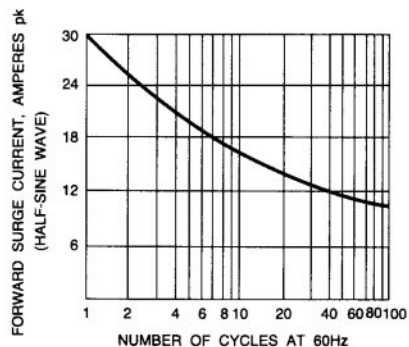


Fig. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

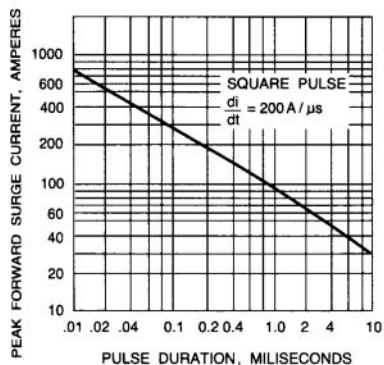


Fig. 4 - TYPICAL JUNCTION CAPACITANCE

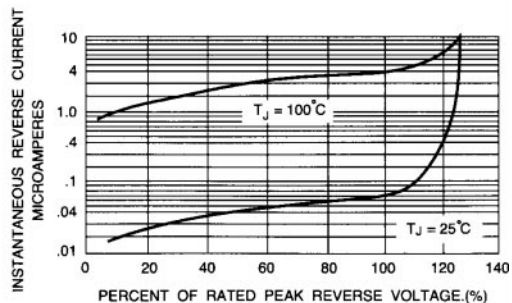


Fig. 5 - TYPICAL REVERSE CHARACTERISTICS