



BY127, BY133, EM513, EM516

GENERAL PURPOSE PLASTIC RECTIFIER

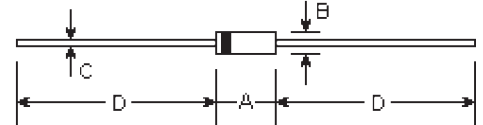
Reverse Voltage - 1250 to 1800 Volts

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 | | | | μA |
| Typical junction capacitance (Note 1) | C_J | 15.0 | | | | μF |
| Typical thermal resistance (Note 2) | $R_{\theta JA}$ $R_{\theta JL}$ | 50.0 25.0 | | | | $^\circ\text{C/W}$ |
| Operating and storage temperature range | T_J, T_{STG} | -55 to +150 | | | | $^\circ\text{C}$ |

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

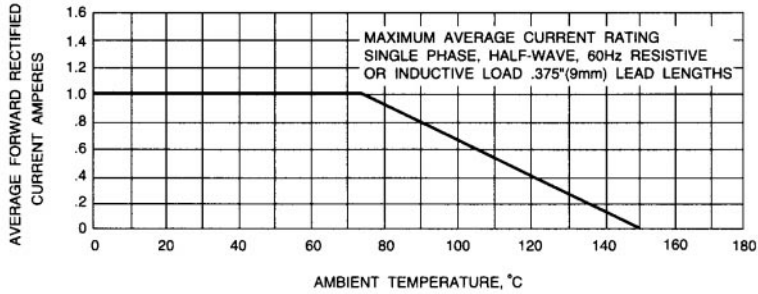


Fig. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

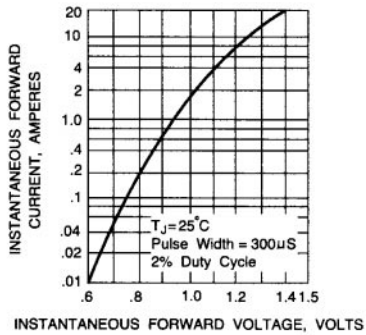


Fig. 2 - TYPICAL FORWARD CHARACTERISTICS

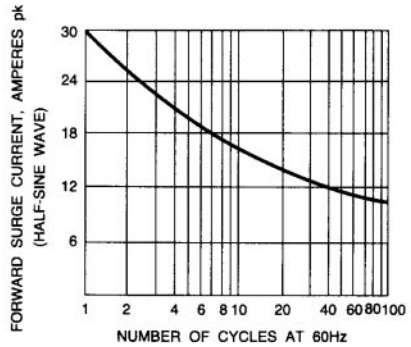


Fig. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

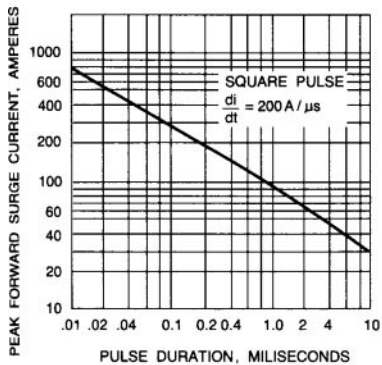


Fig. 4 - TYPICAL JUNCTION CAPACITANCE

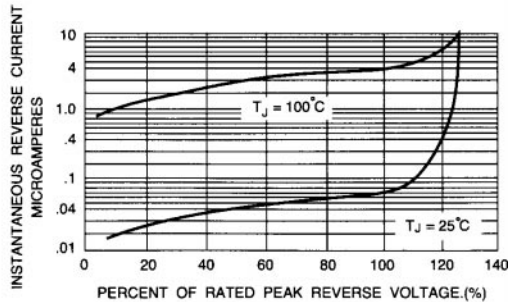


Fig. 5 - TYPICAL REVERSE CHARACTERISTICS