

HIGH EFFICIENCY RECTIFIERS

VOLTAGE RANGE: 50 -- 1000 V
CURRENT: 3.0 A

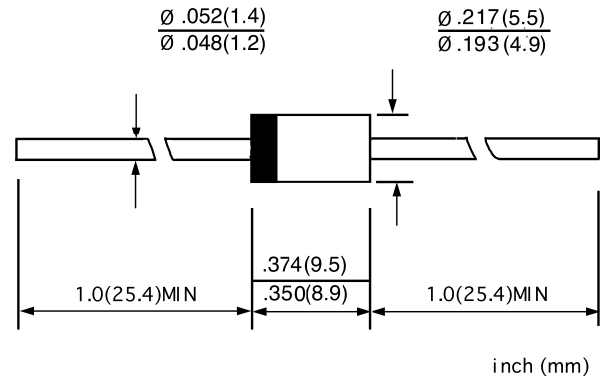
FEATURES

- ◇ Fast recovery times
- ◇ UI 90V0 flame retardant epoxy molding compound
- ◇ Diffused junction
- ◇ Low cost
- ◇ High surge current capability
- ◇ Bevel round chip, avalanche operation

MECHANICAL DATA

- ◇ Case: JEDEC DO-27, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.041 ounces, 1.15 grams
- ◇ Mounting position: Any

DO - 27



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 by 20%.

| | | BYT 56A | BYT 56B | BYT 56D | BYT 56G | BYT 56J | BYT 56K | BYT 56M | UNITS |
|-------------------------------------------------------------------------------------------------------------|-----------------|-----------------|------------|------------|------------|------------|------------|------------|--------------|
| Maximum recurrent peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$ | $I_{F(AV)}$ | 3.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ C$ | I_{FSM} | 150.0 | | | | | | | A |
| Maximum instantaneous forward voltage @ 3.0A | V_F | 1.4 | | | | | | | V |
| Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$ | I_R | 10.0 150.0 | | | | | | | μA |
| Maximum reverse recovery time (Note1) | t_{rr} | 100 | | | | | | | ns |
| Typical junction capacitance (Note2) | C_J | 75 | | | | 50 | | | pF |
| Typical thermal resistance (Note3) | $R_{\theta JA}$ | 30 | | | | | | | $^\circ C/W$ |
| Operating junction temperature range | T_J | - 55 ---- + 150 | | | | | | | $^\circ C$ |
| Storage temperature range | T_{STG} | - 55 ---- + 150 | | | | | | | $^\circ C$ |

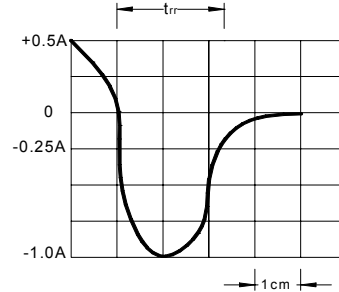
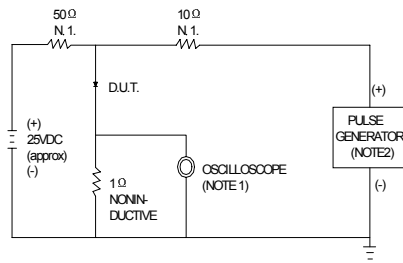
NOTE: 1. Measured with $I_F=0.5A$, $I_R=1A$, $I_{rr}=0.25A$.

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance from junction to ambient.

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FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1MΩ.22pF
 2. RISE TIME=10ns MAX. SOURCE IMPEDANCE=50Ω.

SET TIME BASE FOR 20/30 ns/cm

FIG.2 – TYPICAL JUNCTION CAPTANCE

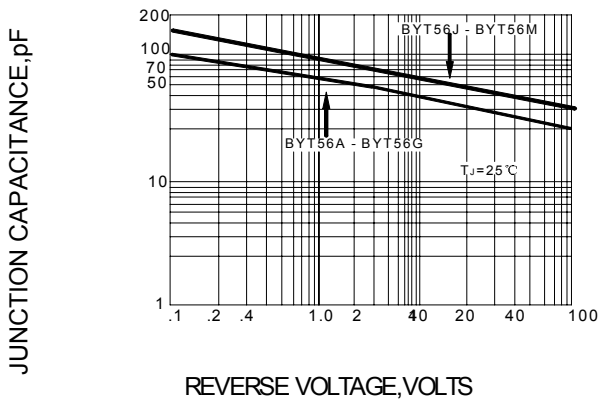


FIG.3 – PEAK FORWARD SURGE CURRENT

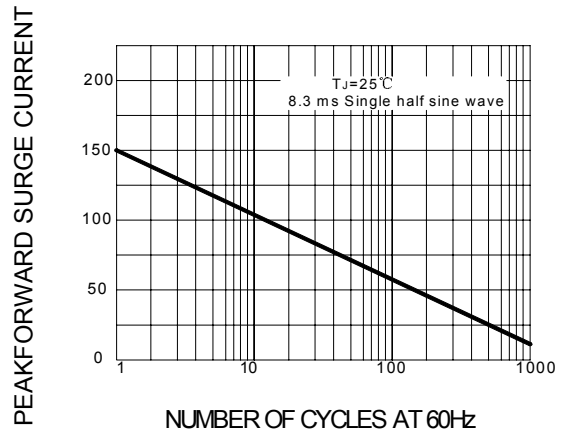


FIG.4 – TYPICAL FORWARD CURRENT DERATING CURVE

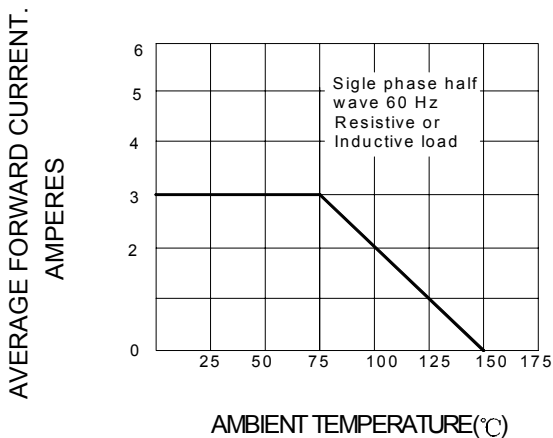


FIG.5 – TYPICAL FORWARD CHARACTERISTIC

