

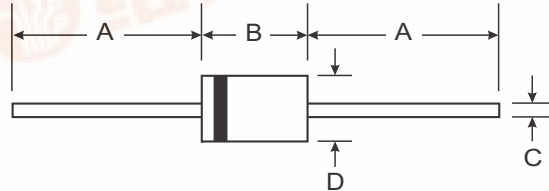


# 1N5817 - 1N5819

## 1.0A SCHOTTKY BARRIER RECTIFIER

### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead Free Finish, RoHS Compliant (Note 5)**



### Mechanical Data

- Case: DO-41
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Tin. Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Ordering Information: See Page 2
- Marking: Type Number and Date Code
- Weight: 0.3 grams (approximate)

| DO-41 Plastic        |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 25.40 | —     |
| B                    | 4.06  | 5.21  |
| C                    | 0.71  | 0.864 |
| D                    | 2.00  | 2.72  |
| All Dimensions in mm |       |       |

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic   | Symbol                          | 1N5817         | 1N5818         | 1N5819       | Unit                 |
|--|---------------------------------|----------------|----------------|--------------|----------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage   | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 20             | 30             | 40           | V                    |
| RMS Reverse Voltage  | $V_{R(RMS)}$                    | 14             | 21             | 28           | V                    |
| Average Rectified Output Current<br>(Note 1) @ $T_L = 90^{\circ}\text{C}$  | $I_O$                           | 1.0            |                |              | A                    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>single half sine-wave superimposed on rated load                              | $I_{FSM}$                       | 25             |                |              | A                    |
| Forward Voltage (Note 2) @ $I_F = 1.0\text{A}$<br>@ $I_F = 3.0\text{A}$  | $V_{FM}$                        | 0.450<br>0.750 | 0.550<br>0.875 | 0.60<br>0.90 | V                    |
| Peak Reverse Leakage Current @ $T_A = 25^{\circ}\text{C}$<br>at Rated DC Blocking Voltage (Note 2) @ $T_A = 100^{\circ}\text{C}$ | $I_{RM}$                        | 1.0<br>10      |                |              | mA                   |
| Typical Total Capacitance (Note 3)   | $C_T$                           | 110            |                |              | pF                   |
| Typical Thermal Resistance Junction to Lead (Note 4)   | $R_{\theta JL}$                 | 15             |                |              | $^{\circ}\text{C/W}$ |
| Typical Thermal Resistance Junction to Ambient   | $R_{\theta JA}$                 | 50             |                |              |                      |
| Operating and Storage Temperature Range  | $T_j, T_{STG}$                  | -65 to +125    |                |              | $^{\circ}\text{C}$   |

- Notes:
1. Measured at ambient temperature at a distance of 9.5mm from the case.
  2. Short duration test pulse used to minimize self-heating effect.
  3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  4. Thermal resistance from junction to lead vertical P.C.B. mounted, 0.375" (9.5mm) lead length with 1.5 x 1.5" (38 x 38mm) copper pads.
  5. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.



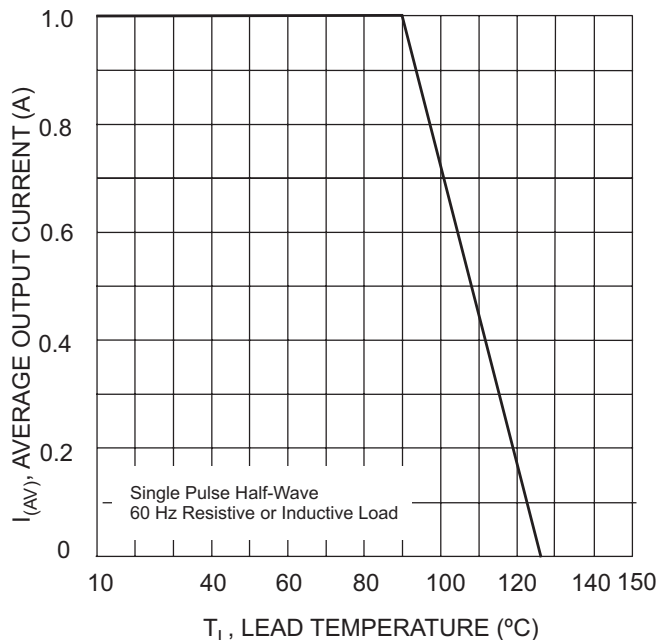


Fig. 1 Forward Current Derating Curve

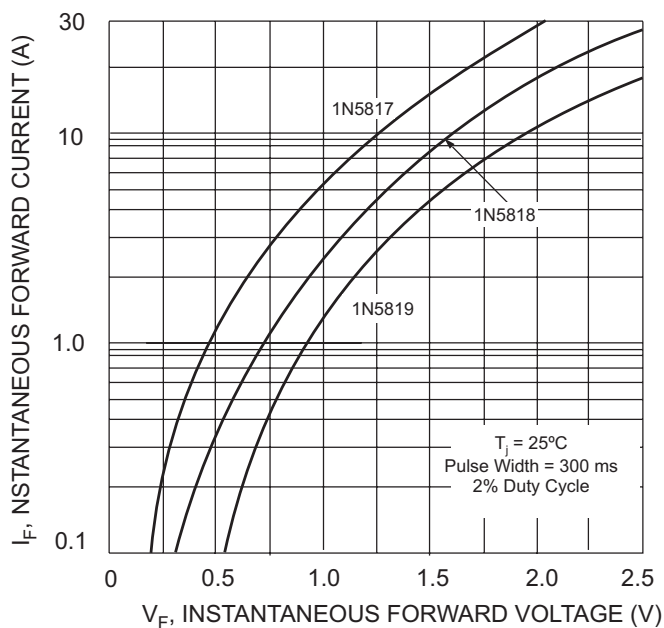


Fig. 2 Typical Forward Characteristics

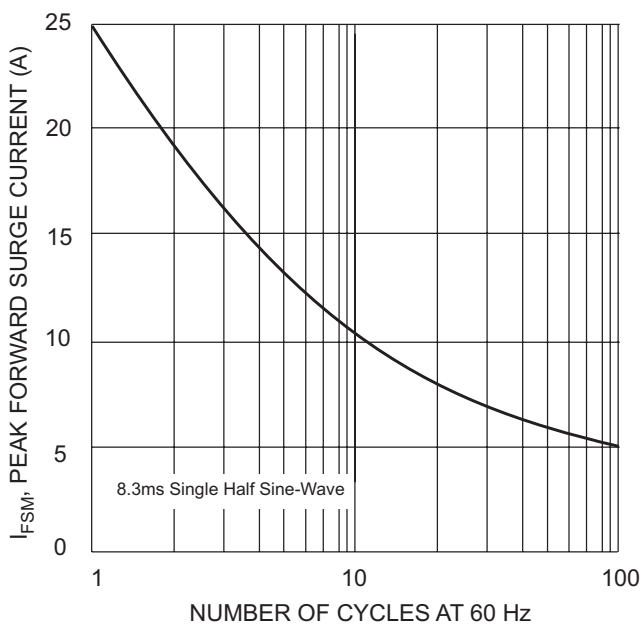


Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

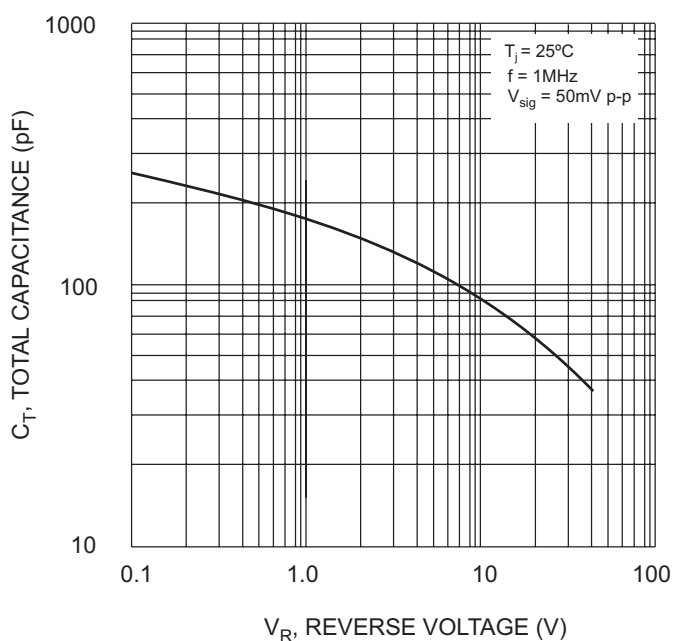


Fig. 4 Typical Total Capacitance

## Ordering Information (Note 6)

| Device   | Packaging | Shipping                |
|----------|-----------|-------------------------|
| 1N5817-B | DO-41     | 1K/Bulk                 |
| 1N5817-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5818-B | DO-41     | 1K/Bulk                 |
| 1N5818-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5819-B | DO-41     | 1K/Bulk                 |
| 1N5819-T | DO-41     | 5K/Tape & Reel, 13-inch |



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