# 1.0A SCHOTTKY BARRIER RECTIFIER

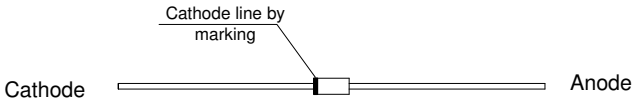
## Features

- 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 (Notes 1 & 2)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

## Mechanical Data

- Package: DO-41
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Tin. Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.3 grams (Approximate)

DO-41 (Plastic)



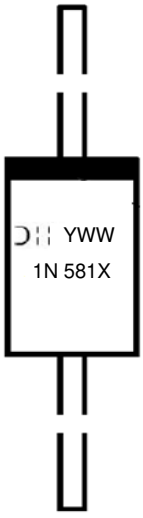

## Ordering Information (Note 3)

| Part Number | Package | Packing | |
|---|---|---|---|
| | | Qty. | Carrier |
| 1N5817-T | DO-41 (Plastic) | 5K | 13" Tape & Reel |
| 1N5818-T | DO-41 (Plastic) | 5K | 13" Tape & Reel |
| 1N5819-T | DO-41 (Plastic) | 5K | 13" Tape & Reel |

Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

## Marking Information

**(Top View)**




= Manufacturer's Marking
YWW = Date Code Marking
Y = Year (ex: 23 = 2023)
WW = Week (01 to 53)
1N581X = Product Type Marking Code
X = 7, 8, 9

## Maximum Ratings and Electrical Characteristics (@$T_A$ = +25°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 (Note 4) @ $T_L$ = +90°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 5) @ $I_F$ = 1.0A<br>@ $I_F$ = 3.0A | $V_{FM}$ | 0.450<br>0.750 | 0.550<br>0.875 | 0.60<br>0.90 | V |
| Peak Reverse Leakage Current @ $T_A$ = +25°C<br>at Rated DC Blocking Voltage (Note 5) @ $T_A$ = +100°C | $I_{RM}$ | 1.0<br>10 | | | mA |
| Typical Total Capacitance (Note 6) | $C_T$ | 110 | | | pF |
| Typical Thermal Resistance Junction to Lead (Note 7) | $R_{\theta JL}$ | 15 | | | °C/W |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 50 | | | |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +125 | | | °C |

Notes: 4. Measured at ambient temperature at a distance of 9.5mm from the case.
5. Short duration test pulse used to minimize self-heating effect.
6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
7. Thermal resistance from junction to lead vertical P.C.B. mounted, 0.375" (9.5mm) lead length with 1.5 x 1.5" (38mm x 38mm) copper pads.

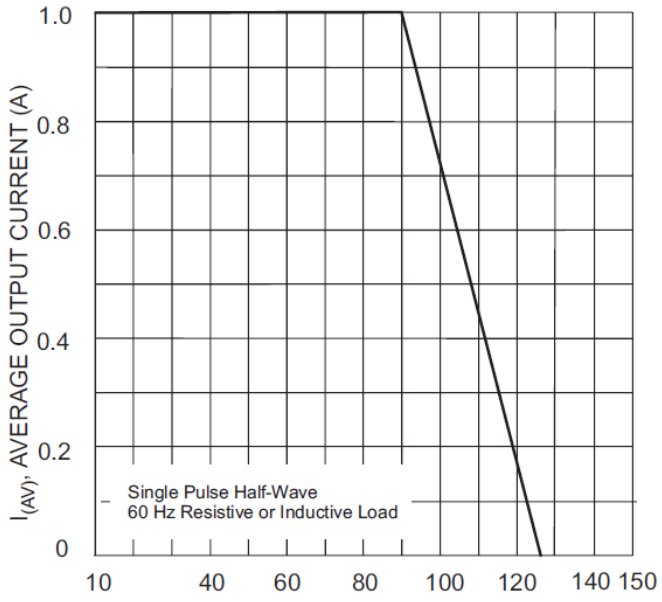



Fig. 1 Forward Current Derating Curve

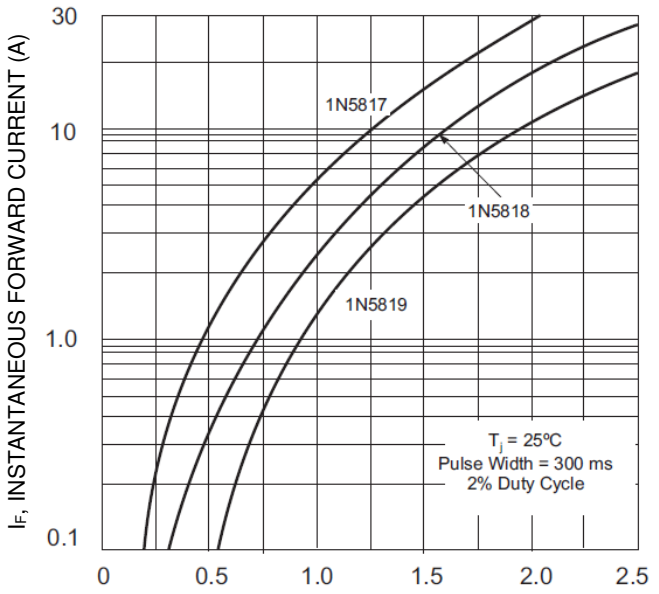



Fig. 2 Typical Forward Characteristics

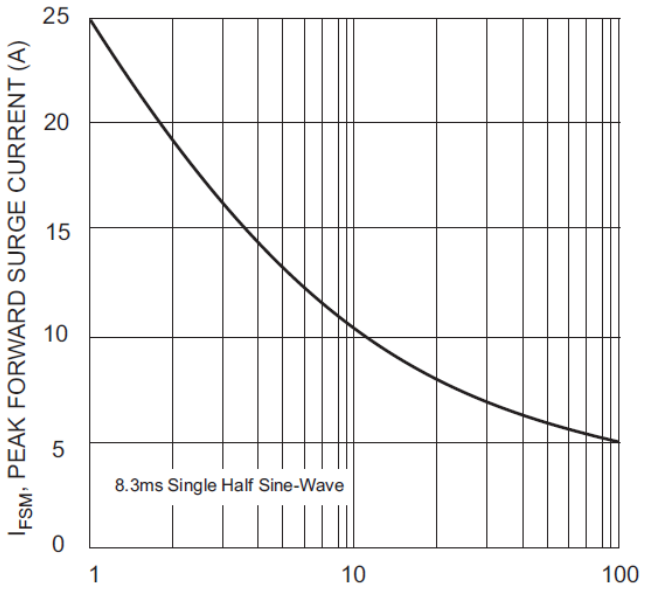



Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

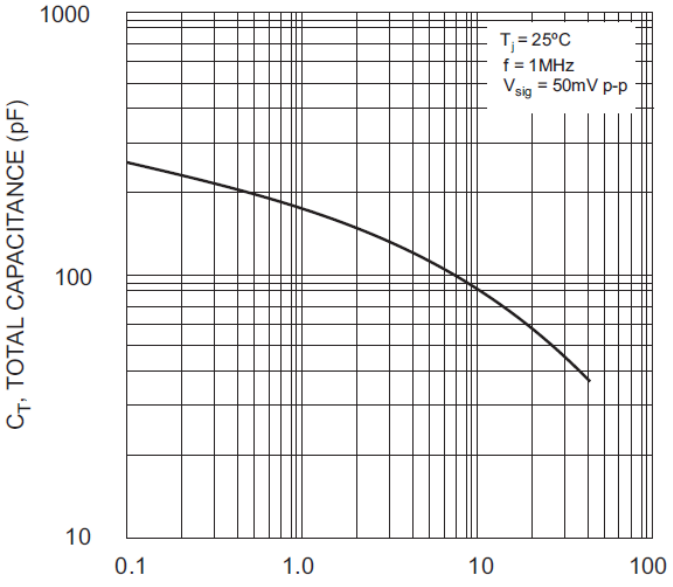
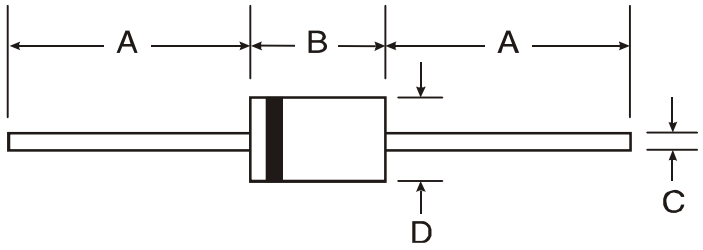



Fig. 4 Typical Total Capacitance

## Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

**DO-41 (Plastic)**




| 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** | | |

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