

### 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<sub>A</sub> = 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	V
Average Rectified Output Current (Note 1) @ T <sub>L</sub> = 90°C	I <sub>o</sub>	1.0			A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	25			A
Forward Voltage (Note 2) @ I <sub>F</sub> = 1.0A @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>	0.450 0.750	0.550 0.875	0.60 0.90	V
Peak Reverse Leakage Current at Rated DC Blocking Voltage (Note 2) @ T <sub>A</sub> = 25°C @ T <sub>A</sub> = 100°C	I <sub>RM</sub>	1.0 10			mA
Typical Total Capacitance (Note 3)	C <sub>T</sub>	110			pF
Typical Thermal Resistance Junction to Lead (Note 4)	R <sub>θJL</sub>	15			°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	50			
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +125			°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

Notes: 6. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.