

## 1A, 20V - 40V Schottky Barrier Rectifiers

### FEATURES

- Low forward voltage drop
- Guardring for overvoltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### MECHANICAL DATA

**Case:** DO-204AL (DO-41)

Molding compound, UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Pure tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.33 gram (approximately)



**DO-204AL (DO-41)**



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                                      |              |        |        |      |
|----------------------------------------------------------------------------------------------|--------------------------------------|--------------|--------|--------|------|
| PARAMETER                                                                                    | SYMBOL                               | 1N5817       | 1N5818 | 1N5819 | UNIT |
| Maximum repetitive peak reverse voltage                                                      | V <sub>RRM</sub>                     | 20           | 30     | 40     | V    |
| Maximum RMS voltage                                                                          | V <sub>RMS</sub>                     | 14           | 21     | 28     | V    |
| Maximum DC blocking voltage                                                                  | V <sub>DC</sub>                      | 20           | 30     | 40     | V    |
| Maximum average forward rectified current                                                    | I <sub>F(AV)</sub>                   | 1            |        |        | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load          | I <sub>FSM</sub>                     | 30           |        |        | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 1 A                                      | V <sub>F</sub>                       | 0.45         | 0.55   | 0.60   | V    |
| Maximum reverse current @ rated VR<br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =100°C          | I <sub>R</sub>                       | 1<br>10      |        |        | mA   |
| Typical junction capacitance (Note 2)                                                        | C <sub>J</sub>                       | 55           |        |        | pF   |
| Voltage rate of change (Rated V <sub>R</sub> )                                               | dV/dt                                | 10000        |        |        | V/μs |
| Typical thermal resistance                                                                   | R <sub>θJC</sub><br>R <sub>θJA</sub> | 45<br>100    |        |        | °C/W |
| Operating junction temperature range                                                         | T <sub>J</sub>                       | - 55 to +125 |        |        | °C   |
| Storage temperature range                                                                    | T <sub>STG</sub>                     | - 55 to +125 |        |        | °C   |

Note 1: Pulse test with PW=300 μs, 1% duty cycle

Note 2: Measure at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

| ORDERING INFORMATION |                 |              |                         |         |                                  |
|----------------------|-----------------|--------------|-------------------------|---------|----------------------------------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING                          |
| 1N581x<br>(Note 1)   | H               | A0           | G                       | DO-41   | 3,000 / Ammo box (52mm taping)   |
|                      |                 | R0           |                         | DO-41   | 5,000 / 13" Paper reel           |
|                      |                 | R1           |                         | DO-41   | 5,000 / 13" Paper reel (Reverse) |
|                      |                 | B0           |                         | DO-41   | 1,000 / Bulk packing             |

Note 1: "x" defines voltage from 20V (1N5817) to 40V (1N5819)

\*: Optional available

| EXAMPLE       |          |                 |              |                     |                                      |
|---------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| 1N5817HA0G    | 1N5817   | H               | A0           | G                   | AEC-Q101 qualified<br>Green compound |

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub>=25°C unless otherwise noted)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

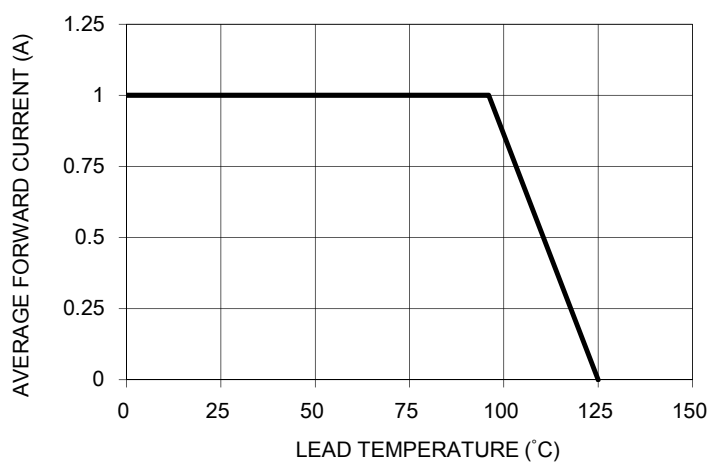


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

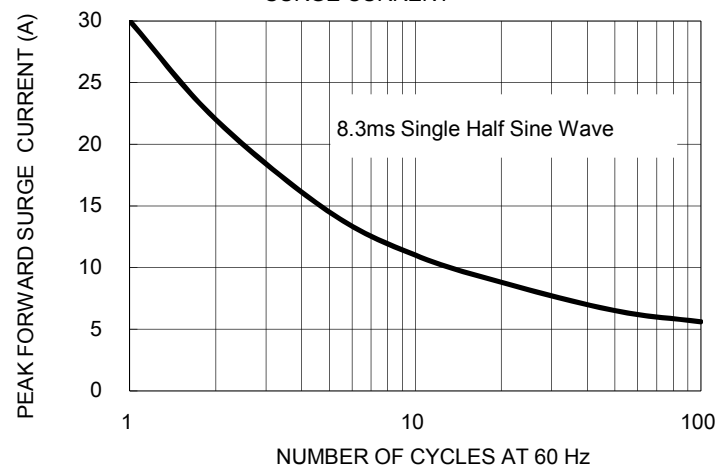


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

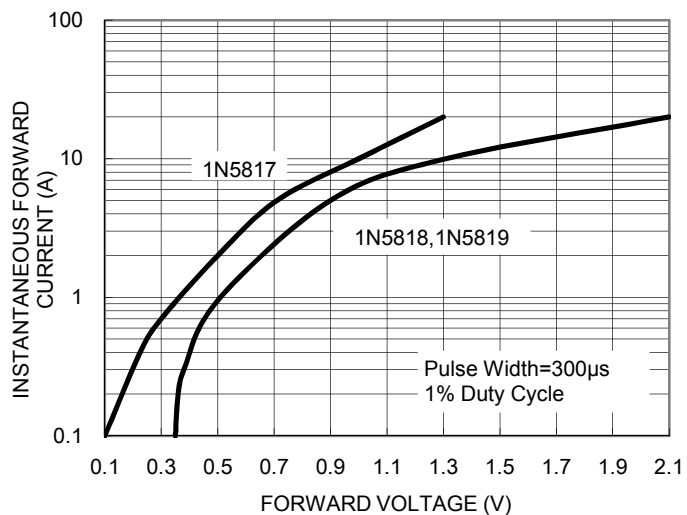


FIG. 4 TYPICAL REVERSE LEAKAGE CHARACTERISTICS

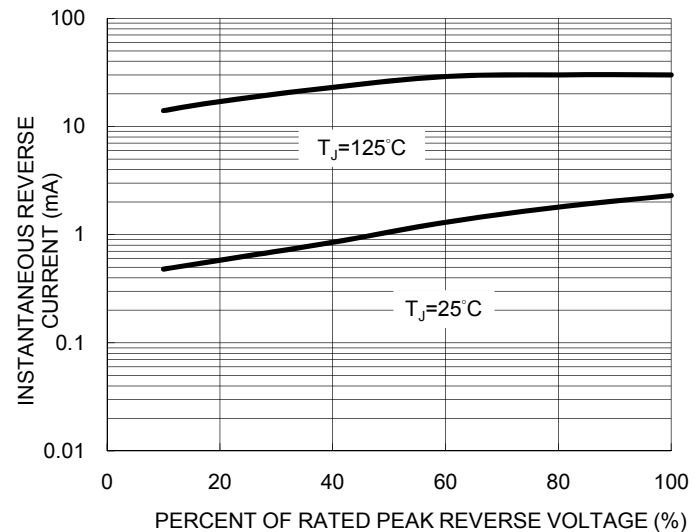


FIG. 5 TYPICAL JUNCTION CAPACITANCE

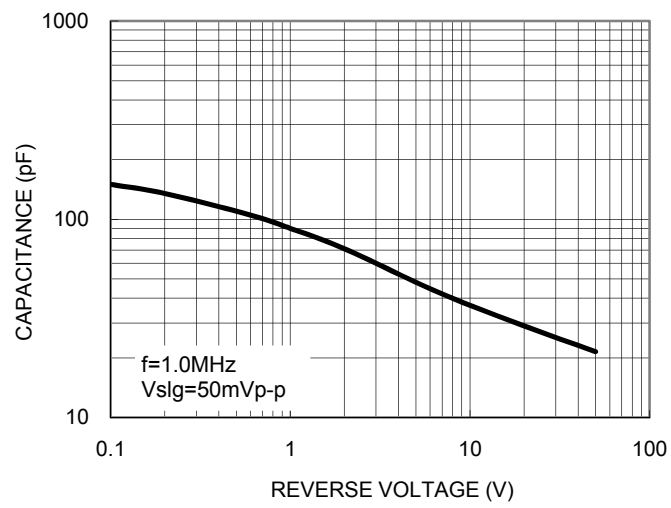
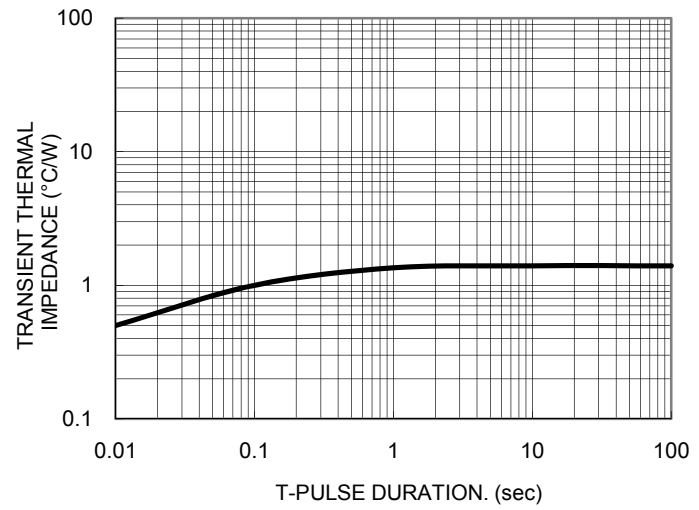
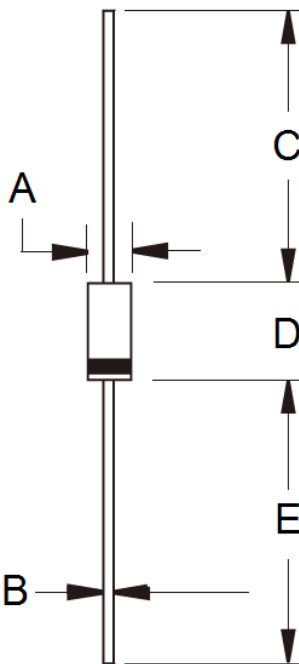


FIG. 6 TYPICAL TRANSIENT THERMAL CHARACTERISTICS



DIMENSIONS

DO-204AL (DO-41)



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 2.00      | 2.70 | 0.079       | 0.106 |
| B    | 0.71      | 0.86 | 0.028       | 0.034 |
| C    | 25.40     | -    | 1.000       | -     |
| D    | 4.20      | 5.20 | 0.165       | 0.205 |
| E    | 25.40     | -    | 1.000       | -     |

MARKING DIAGRAM



P/N = Specific Device Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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