

## 1A, 50V - 1000V Glass Passivated Fast Recovery Rectifiers

### FEATURES

- Glass passivated chip junction
- High current capability, Low VF
- High reliability
- High surge current capability
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



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



### 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

**Weight:** 0.34 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                    |              |         |         |         |         |         |         |      |
|--|--------------------|--------------|---------|---------|---------|---------|---------|---------|------|
| PARAMETER  | SYMBOL             | FR 101G      | FR 102G | FR 103G | FR 104G | FR 105G | FR 106G | FR 107G | UNIT |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 35           | 70      | 140     | 280     | 420     | 560     | 700     | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | 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) @ 1 A   | V <sub>F</sub>     | 1.3          |         |         |         |         |         |         | V    |
| Maximum reverse current @ rated VR<br>T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C        | I <sub>R</sub>     | 5<br>100     |         |         |         |         |         |         | μA   |
| Maximum reverse recovery time (Note 2)   | trr                | 150          |         |         | 250     |         | 500     |         | ns   |
| Typical junction capacitance (Note 3)  | C <sub>J</sub>     | 10           |         |         |         |         |         |         | pF   |
| Typical thermal resistance   | R <sub>θJA</sub>   | 70           |         |         |         |         |         |         | °C/W |
| Operating junction temperature range   | T <sub>J</sub>     | - 55 to +150 |         |         |         |         |         |         | °C   |
| Storage temperature range  | T <sub>STG</sub>   | - 55 to +150 |         |         |         |         |         |         | °C   |

Note 1: Pulse Test with PW=300μs, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

| ORDERING INFORMATION |                 |              |                     |         |                                  |
|----------------------|-----------------|--------------|---------------------|---------|----------------------------------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING                          |
| FR10xG<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 50V (FR101G) to 1000V (FR107G)

| EXAMPLE            |          |                 |              |                     |                                   |
|--------------------|----------|-----------------|--------------|---------------------|-----------------------------------|
| PREFERRED PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                       |
| FR107GHA0G         | FR107G   | H               | A0           | G                   | AEC-Q101 qualified Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

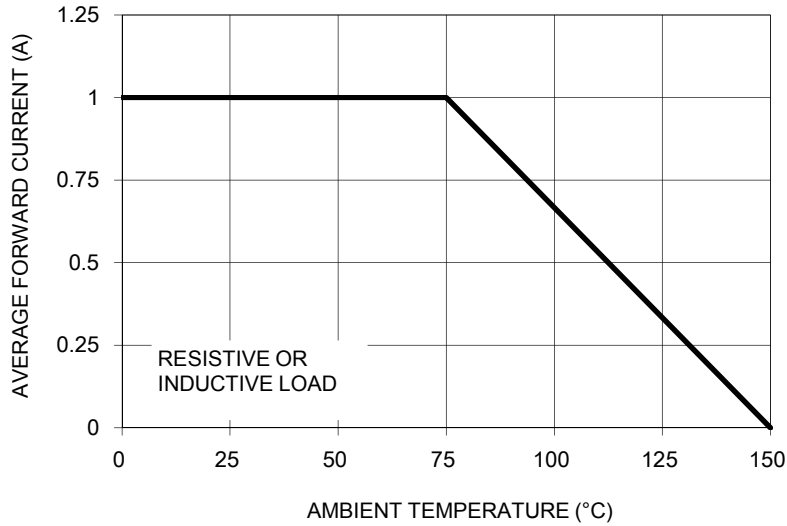


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

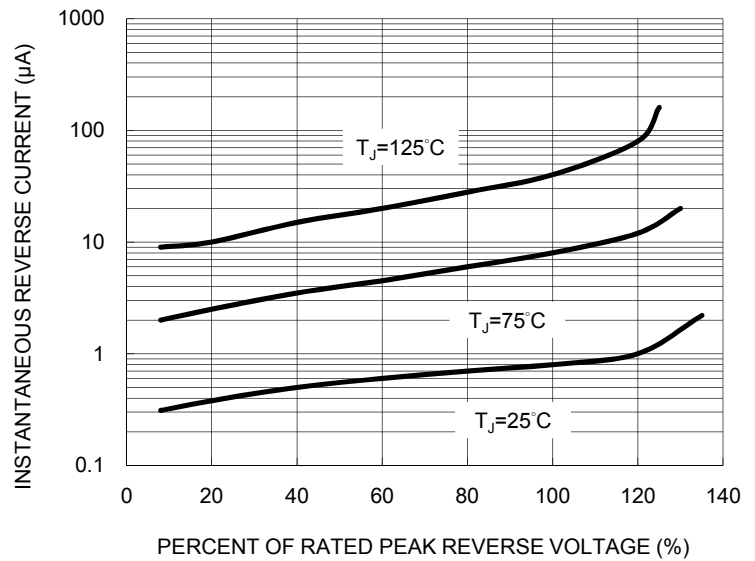


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

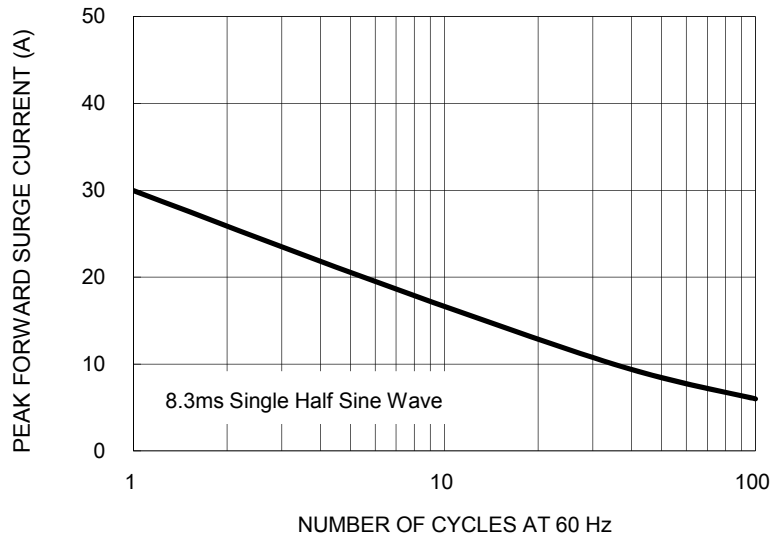


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

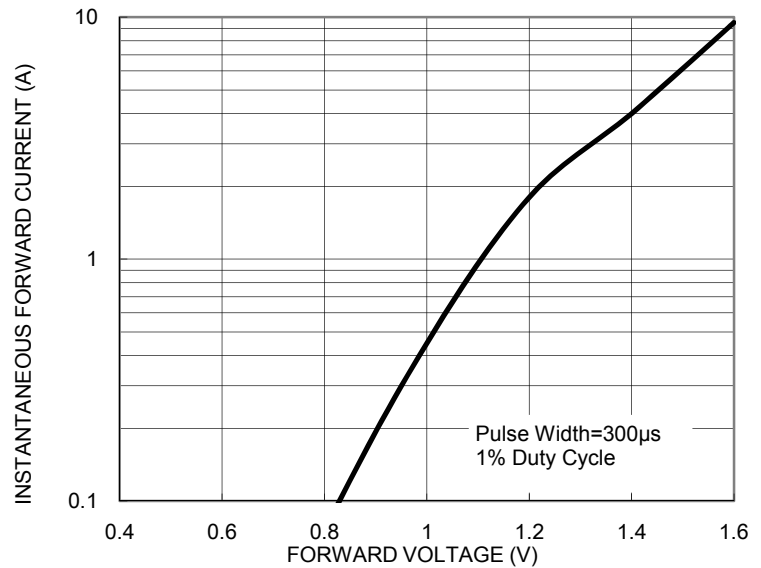


FIG. 4- TYPICAL JUNCTION CAPACITANCE

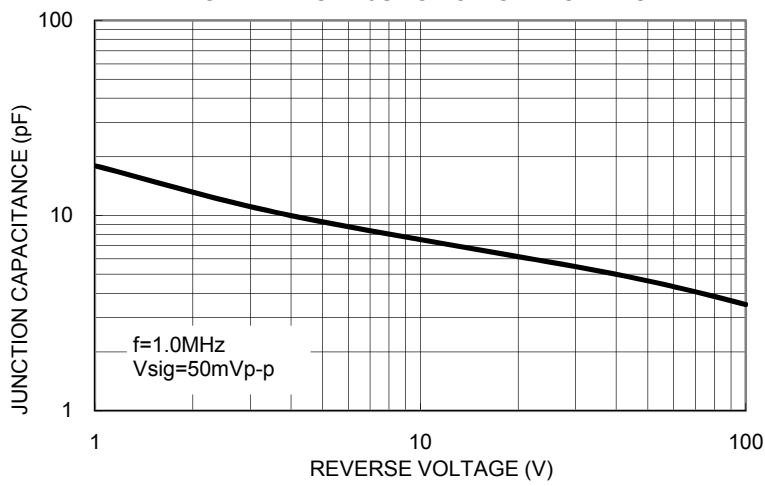
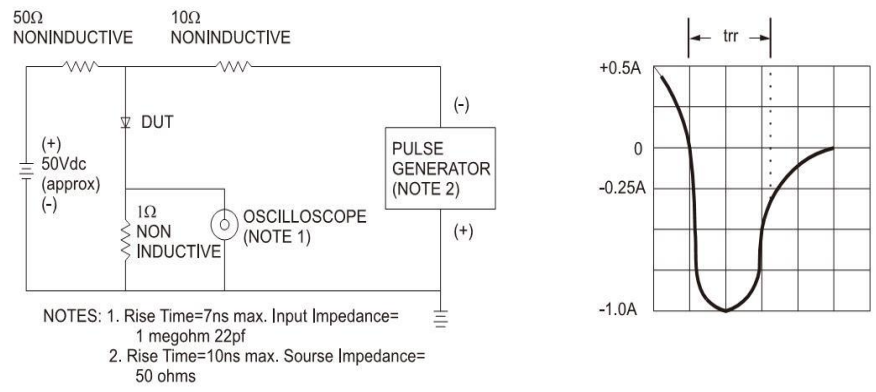
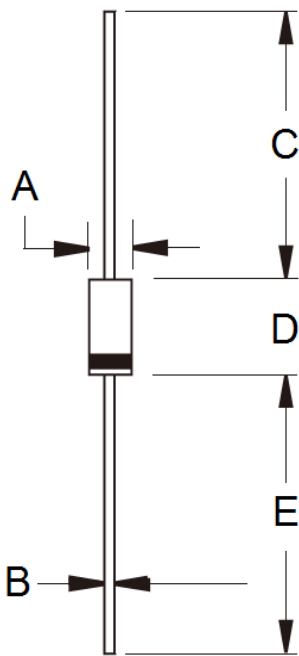


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



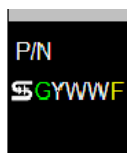
PACKAGE OUTLINE DIMENSIONS

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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