

## 1A, 600V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- High efficiency, low  $V_F$
- High reliability
- 175°C operating junction temperature
- RoHS Compliant
- Halogen-free

### APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

### MECHANICAL DATA

- Case: DO-204AL (DO-41)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.330g (approximately)

| KEY PARAMETERS |                  |      |
|----------------|------------------|------|
| PARAMETER      | VALUE            | UNIT |
| $I_F$          | 1                | A    |
| $V_{RRM}$      | 600              | V    |
| $I_{FSM}$      | 35               | A    |
| $T_{J\ MAX}$   | 175              | °C   |
| Package        | DO-204AL (DO-41) |      |
| Configuration  | Single die       |      |



DO-204AL (DO-41)



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)        |              |             |      |
|------------------------------------------------------------------------------------|--------------|-------------|------|
| PARAMETER                                                                          | SYMBOL       | MUR160A     | UNIT |
| Marking code on the device                                                         |              | MUR160A     |      |
| Repetitive peak reverse voltage                                                    | $V_{RRM}$    | 600         | V    |
| Reverse voltage, total rms value                                                   | $V_{R(RMS)}$ | 420         | V    |
| Forward current                                                                    | $I_F$        | 1           | A    |
| Surge peak forward current, 8.3ms single half sine wave superimposed on rated load | $I_{FSM}$    | 35          | A    |
| Junction temperature                                                               | $T_J$        | -55 to +175 | °C   |
| Storage temperature                                                                | $T_{STG}$    | -55 to +175 | °C   |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | TYP | UNIT |
|----------------------------------------|-----------------|-----|------|
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 50  | °C/W |

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| PARAMETER                                    | CONDITIONS                                                    | SYMBOL   | TYP | MAX  | UNIT          |
|----------------------------------------------|---------------------------------------------------------------|----------|-----|------|---------------|
| Forward voltage <sup>(1)</sup>               | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$                     | $V_F$    | -   | 1.25 | V             |
|                                              | $I_F = 1\text{A}, T_J = 125^\circ\text{C}$                    |          | -   | 1.05 | V             |
| Reverse current @ rated $V_R$ <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                                      | $I_R$    | -   | 5    | $\mu\text{A}$ |
|                                              | $T_J = 125^\circ\text{C}$                                     |          | -   | 150  | $\mu\text{A}$ |
| Junction capacitance                         | 1MHz, $V_R = 4.0\text{V}$                                     | $C_J$    | 27  | -    | pF            |
| Reverse recovery time                        | $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$ | $t_{rr}$ | -   | 50   | ns            |

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

**ORDERING INFORMATION**

| ORDERING CODE <sup>(1)</sup> | PACKAGE          | PACKING             |
|------------------------------|------------------|---------------------|
| MUR160A                      | DO-204AL (DO-41) | 5,000 / Tape & Reel |
| MUR160A A0G                  | DO-204AL (DO-41) | 3,000 / Ammo box    |
| MUR160AH                     | DO-204AL (DO-41) | 5,000 / Tape & Reel |
| MUR160AHA0G                  | DO-204AL (DO-41) | 3,000 / Ammo box    |

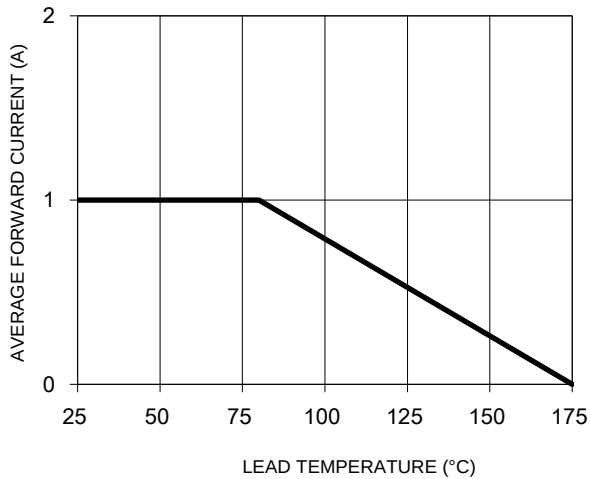
**Notes:**

1. "H" means AEC-Q101 qualified

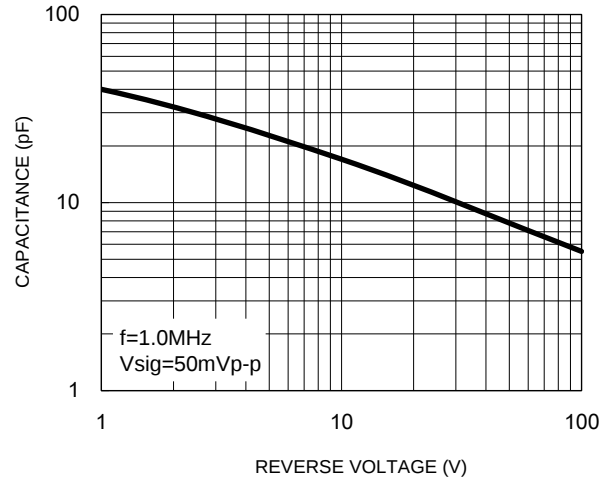
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

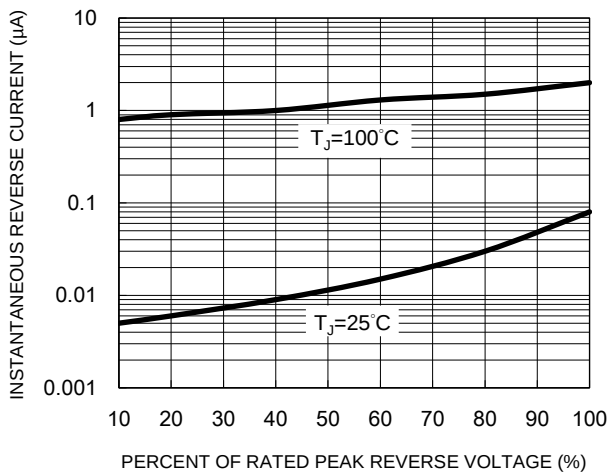
**Fig.1 Forward Current Derating Curve**



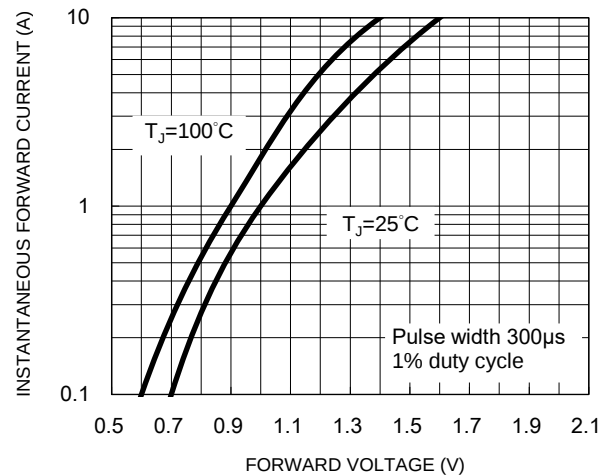
**Fig.2 Typical Junction Capacitance**



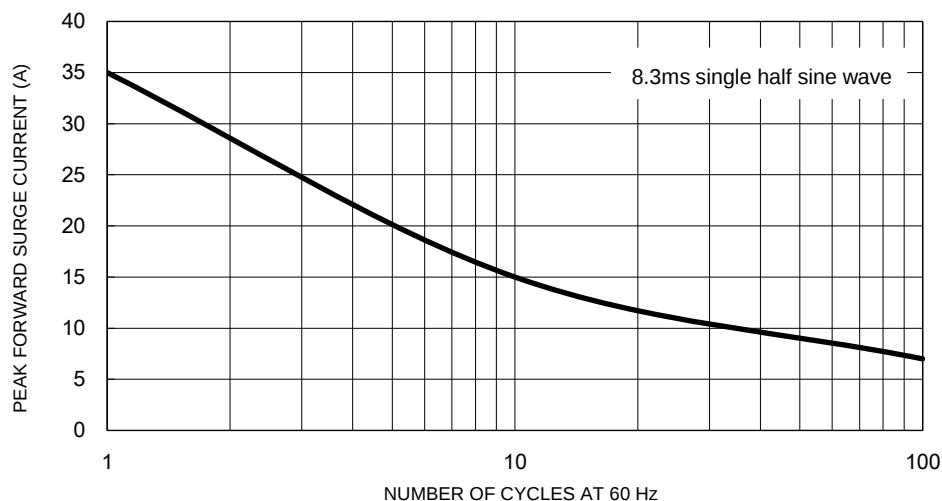
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



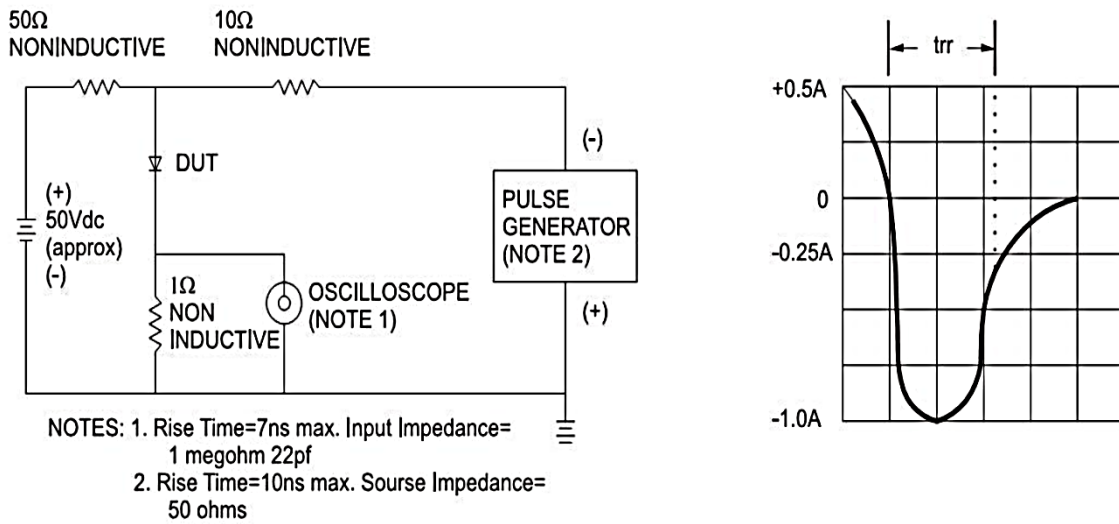
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



## CHARACTERISTICS CURVES

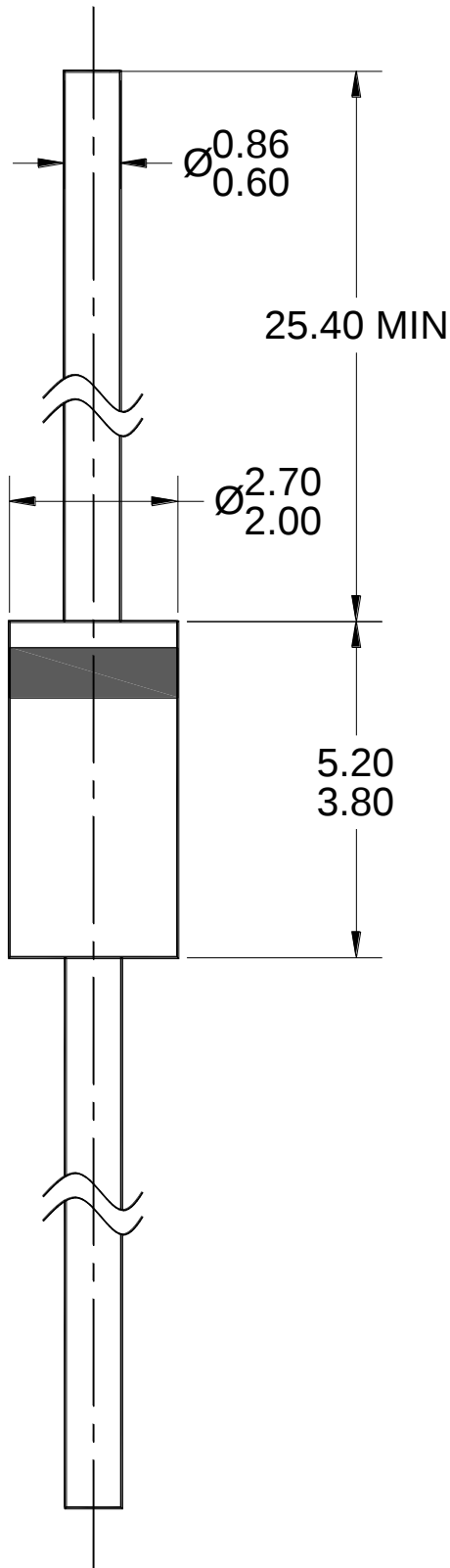
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



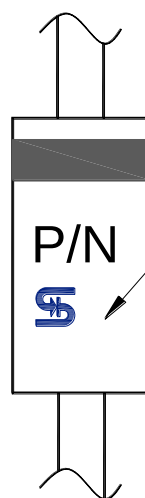
## PACKAGE OUTLINE DIMENSIONS

DO-204AL (DO-41)



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-DO41-059 REV A.



**GYWWF**

**P/N** = MARKING CODE  
**G** = GREEN COMPOUND  
**YWW** = DATE CODE  
**F** = FACTORY CODE

MARKING DIAGRAM

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