

Surface Mount Ultrafast Power Rectifiers

FEATURES

- Glass passivated junction
- Ideal for automated placement
- Built-in strain relief
- Ultrafast recovery time for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition
- AEC-Q101 qualified



MECHANICAL DATA

Case: DO-214AB (SMC)

Molding compound, UL flammability classification rating 94V-0

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

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

Weight: 0.25 g (approximately)

DO-214AB (SMC)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | |
|--|--------------------|----------------|--------------|---------|------|
| PARAMETER | SYMBOL | MUR420S | MUR440S | MUR460S | UNIT |
| Maximum repetitive peak reverse voltage | V _{RRM} | 200 | 400 | 600 | V |
| Maximum RMS voltage | V _{RMS} | 140 | 280 | 420 | V |
| Maximum DC blocking voltage | V _{DC} | 200 | 400 | 600 | V |
| Maximum average forward rectified current | I _{F(AV)} | 4 | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 75 | | | A |
| Maximum instantaneous forward voltage (Note 1) @ 4 A, 25°C @ 4 A, 150°C | V _F | 0.875 0.710 | 1.25 1.05 | | V |
| Maximum reverse current @ rated VR T _J =25 °C T _J =150 °C | I _R | 5 150 | 10 250 | | μA |
| Maximum reverse recovery time (Note 2) | t _{rr} | 25 | 50 | | ns |
| Typical junction capacitance (Note 3) | C _J | 65 | | | pF |
| Typical thermal resistance | R _{θJC} | 8.5 | | | °C/W |
| | R _{θJA} | 45 | | | |
| Operating junction temperature range | T _J | - 55 to +175 | | | °C |
| Storage temperature range | T _{STG} | - 55 to +175 | | | °C |

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

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V DC

| ORDERING INFORMATION | | | | |
|----------------------|--------------|---------------------|---------|--------------------------|
| PART NO. | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING |
| MUR4x0S (Note 1) | R7 | G | SMC | 850 / 7" Plastic reel |
| | R6 | | SMC | 3,000 / 13" Paper reel |
| | M6 | | SMC | 3,000 / 13" Plastic reel |

Note 1: "x" defines voltage from 200V (MUR420S) to 600V (MUR460S)

| EXAMPLE | | | | |
|--------------------|----------|--------------|---------------------|--------------------------------------|
| PREFERRED PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| MUR460S R7 | MUR460S | R7 | | AEC-Q101 qualified |
| MUR460S R7G | MUR460S | R7 | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

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

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

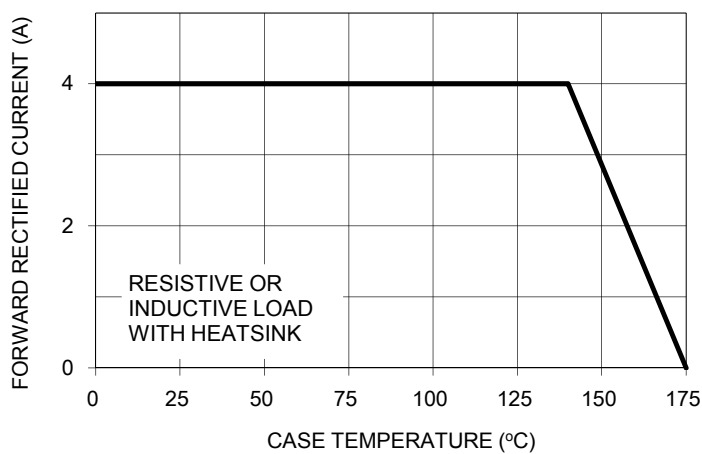


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

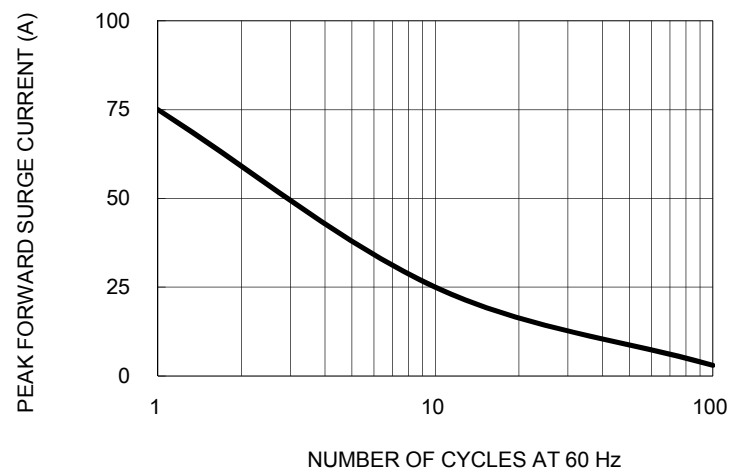


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

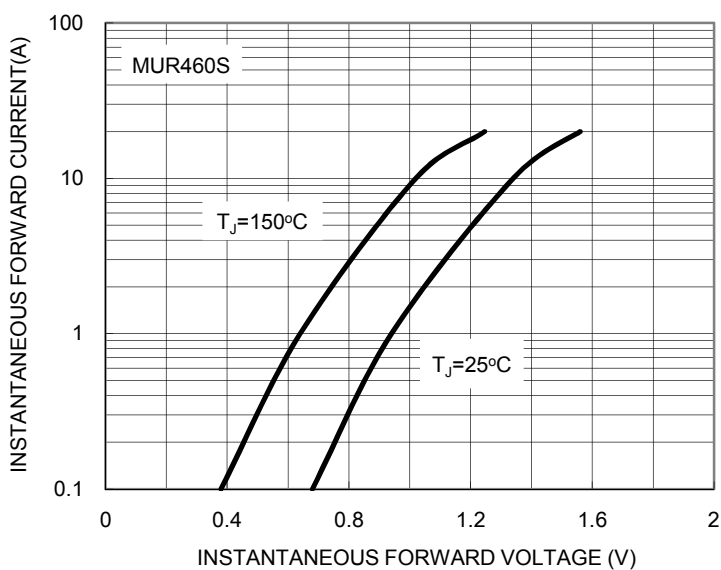


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

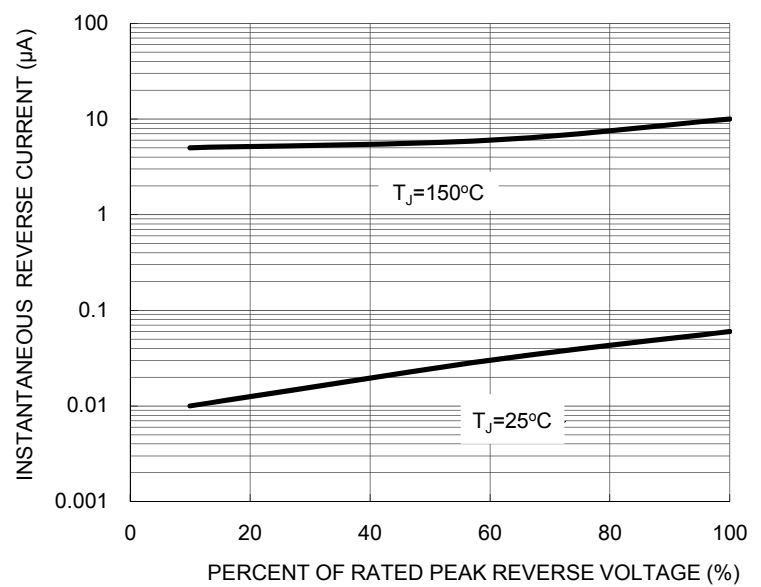


FIG. 5 TYPICAL JUNCTION CAPACITANCE

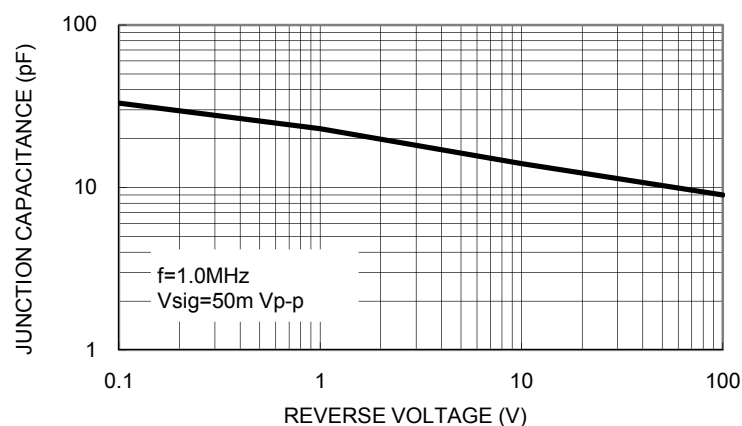
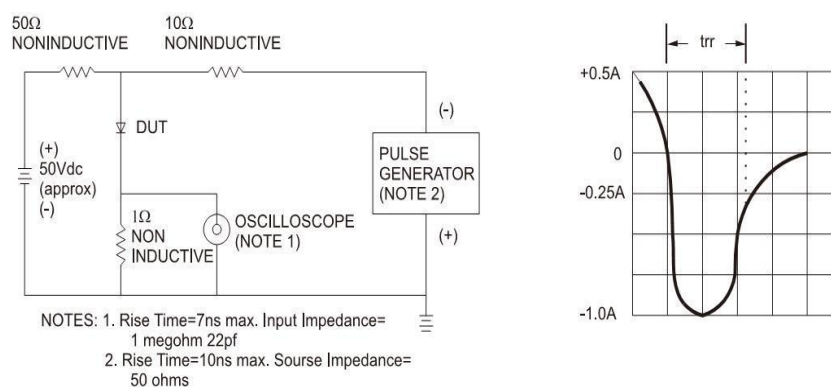
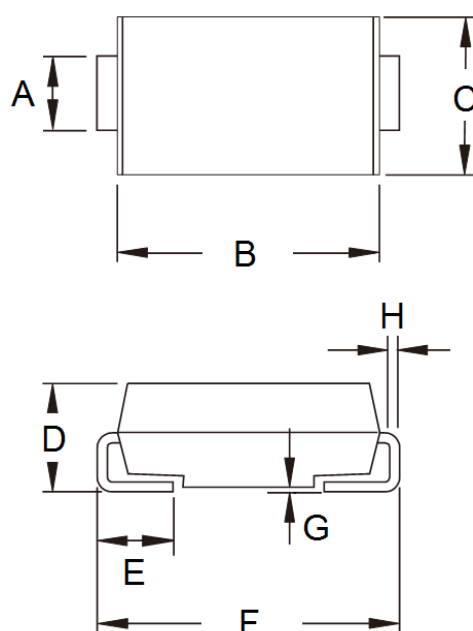


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



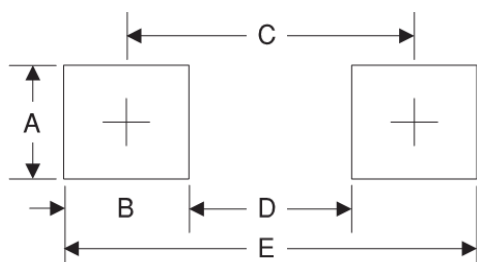
PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 2.90 | 3.20 | 0.114 | 0.126 |
| B | 6.60 | 7.11 | 0.260 | 0.280 |
| C | 5.59 | 6.22 | 0.220 | 0.245 |
| D | 2.00 | 2.62 | 0.079 | 0.103 |
| E | 1.00 | 1.60 | 0.039 | 0.063 |
| F | 7.75 | 8.13 | 0.305 | 0.320 |
| G | 0.10 | 0.20 | 0.004 | 0.008 |
| H | 0.15 | 0.31 | 0.006 | 0.012 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 3.3 | 0.130 |
| B | 2.5 | 0.098 |
| C | 6.8 | 0.268 |
| D | 4.4 | 0.173 |
| E | 9.4 | 0.370 |

MARKING DIAGRAM



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

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