

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

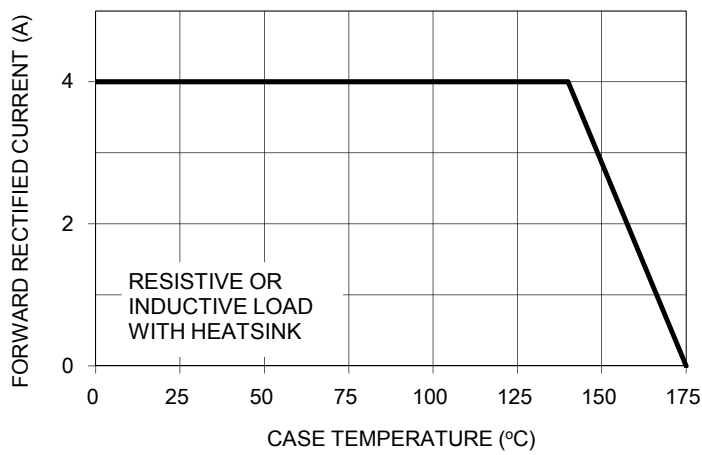


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

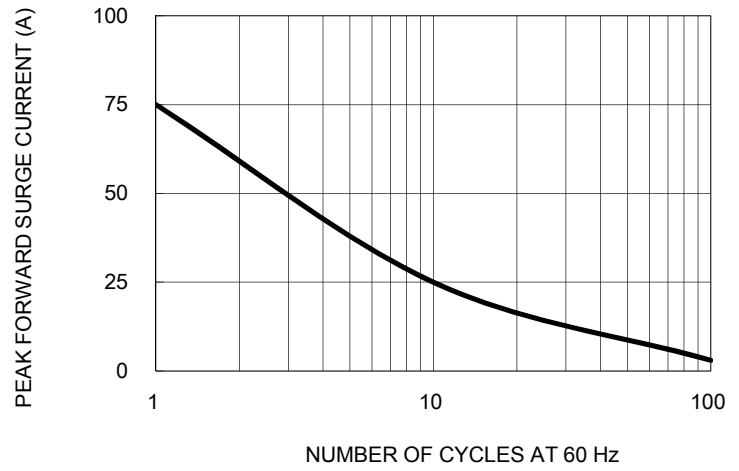


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

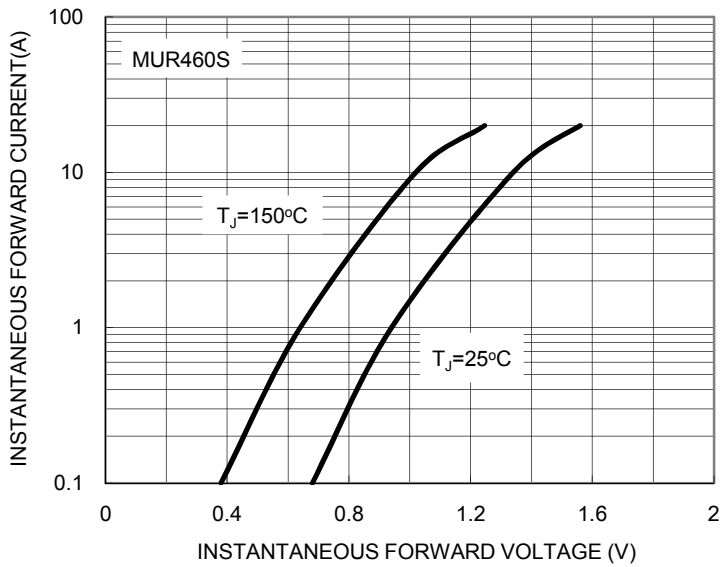


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

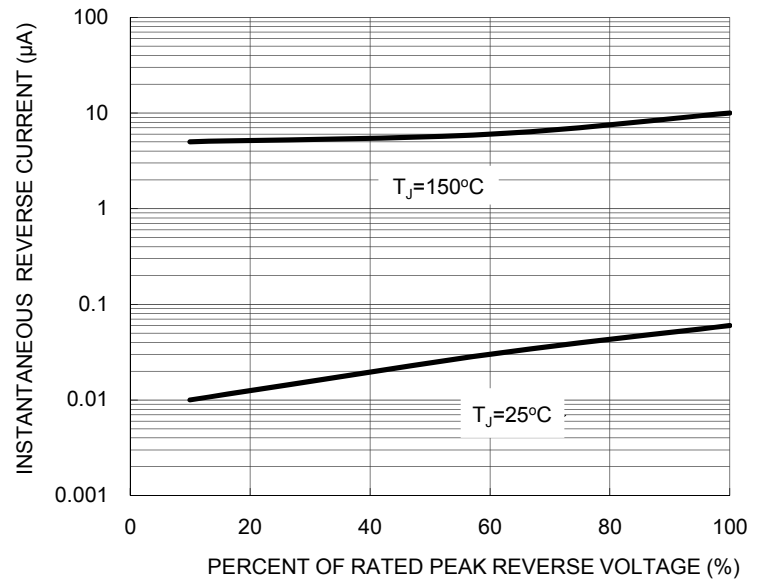


FIG. 5 TYPICAL JUNCTION CAPACITANCE

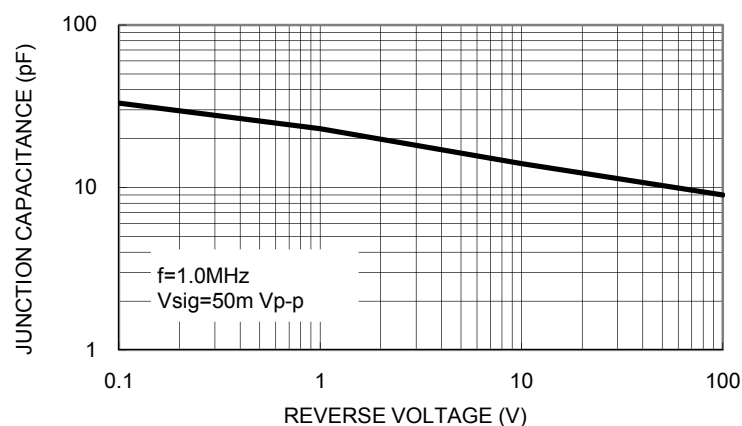
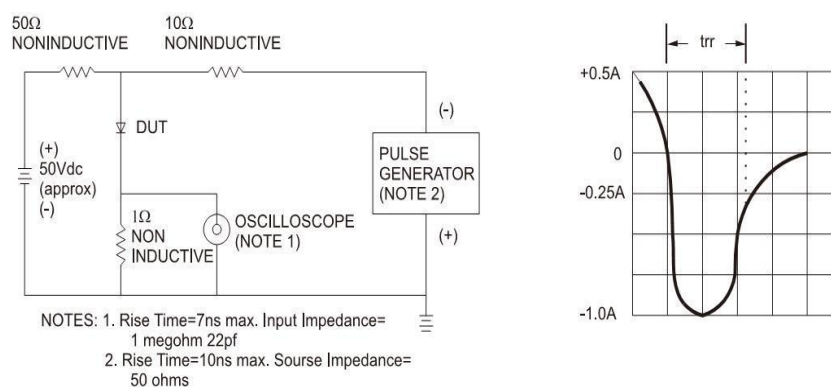
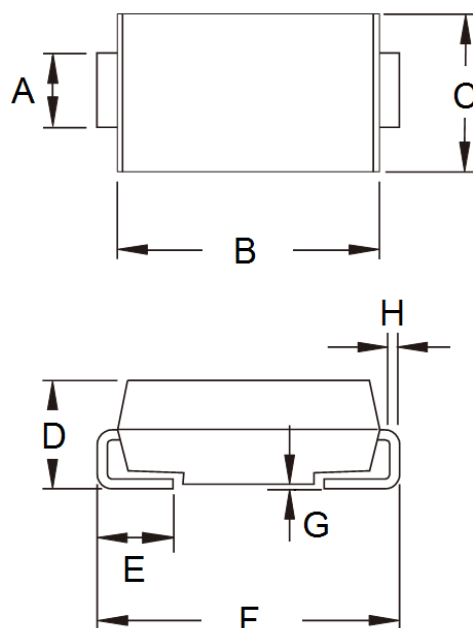


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



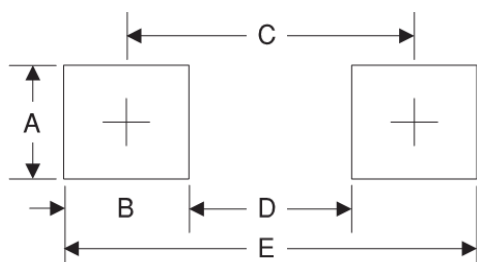
PACKAGE OUTLINE DIMENSIONS

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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