

## Surface Mount Ultrafast Power Rectifiers

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Ultrafast recovery time for high efficiency
- Low forward voltage, low power loss
- 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



### MECHANICAL DATA

**Case:** DO-214AA (SMB)

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.09 g (approximately)

**DO-214AA (SMB)**

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)								
PARAMETER	SYMBOL	MUR 105S	MUR 110S	MUR 115S	MUR 120S	MUR 140S	MUR 160S	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	400	600	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	280	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	400	600	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>	40				35		A
Maximum instantaneous forward voltage (Note 1) @ 1 A, T <sub>J</sub> =25°C @ 1 A, T <sub>J</sub> =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>	2 50				5 150		μA
Maximum reverse recovery time (Note 2)	T <sub>rr</sub>	25				50		ns
Typical thermal resistance	R <sub>θJL</sub>	17						°C/W
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

ORDERING INFORMATION					
PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
MUR1xxS (Note 1)	Prefix "H"	R5	Suffix "G"	SMB	850 / 7" Plastic reel
		R4		SMB	3,000 / 13" Paper reel
		M4		SMB	3,000 / 13" Plastic reel

Note 1: "xx" defines voltage from 50V (MUR105S) to 600V (MUR160S)

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
MUR160S R5	MUR160S		R5		
MUR160S R5G	MUR160S		R5	G	Green compound
MUR160SHR5	MUR160S	H	R5		AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

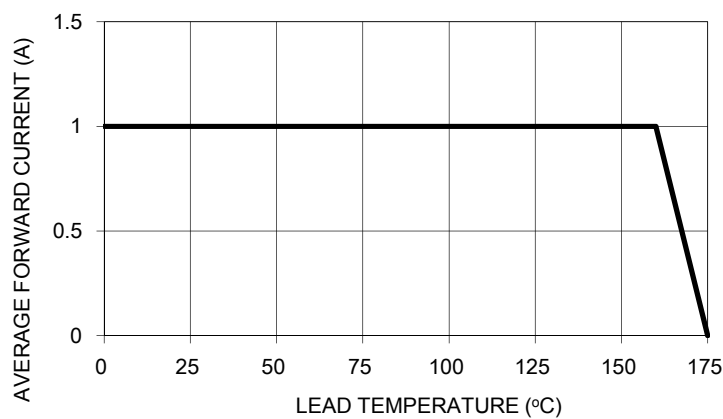


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

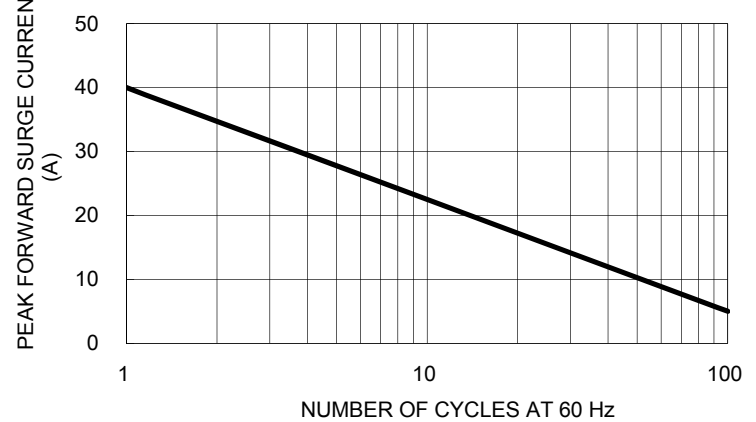


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

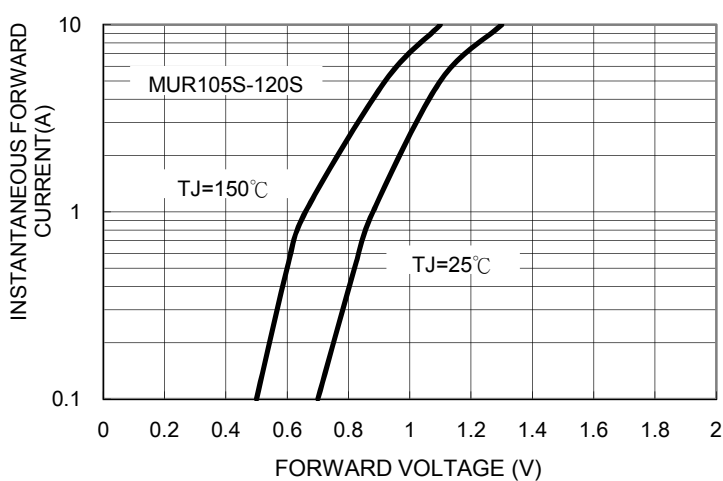


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

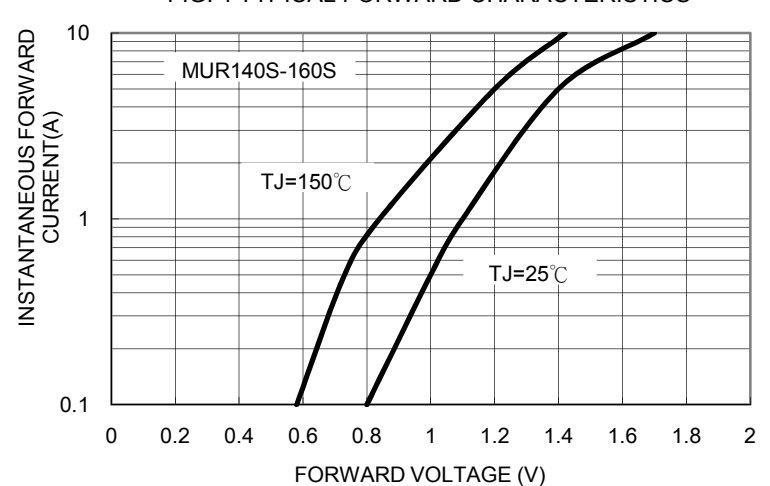


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

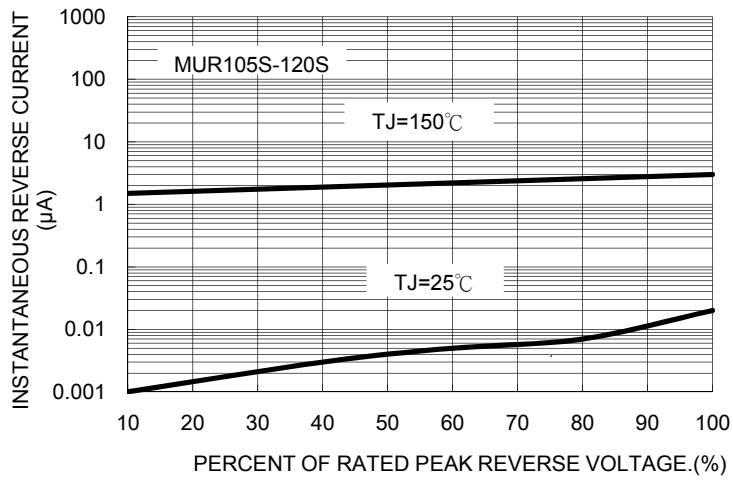


FIG. 6 TYPICAL REVERSE CHARACTERISTICS

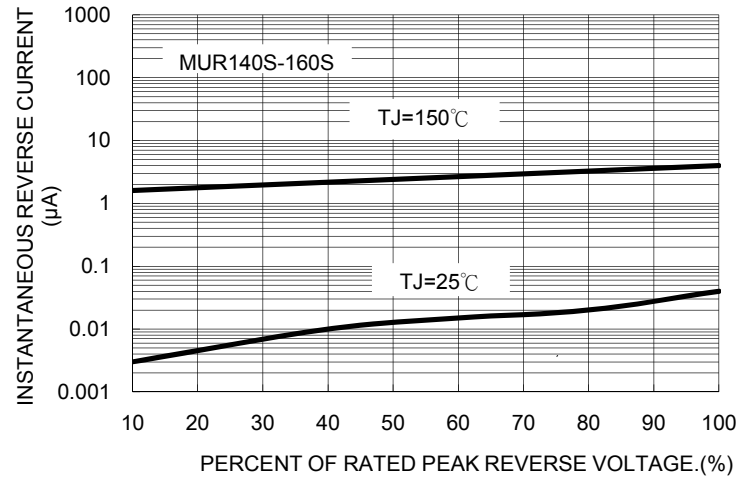
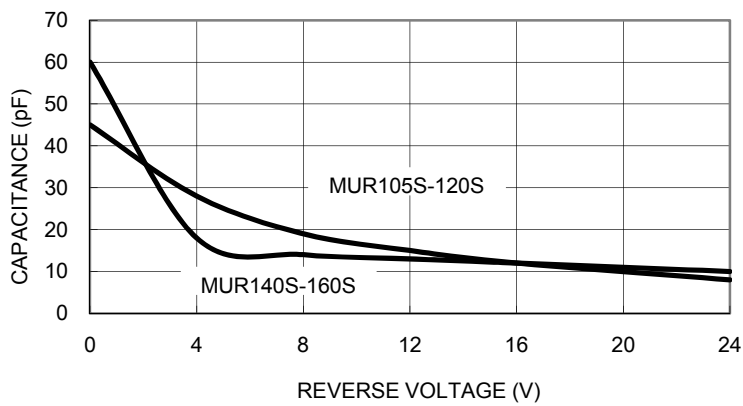
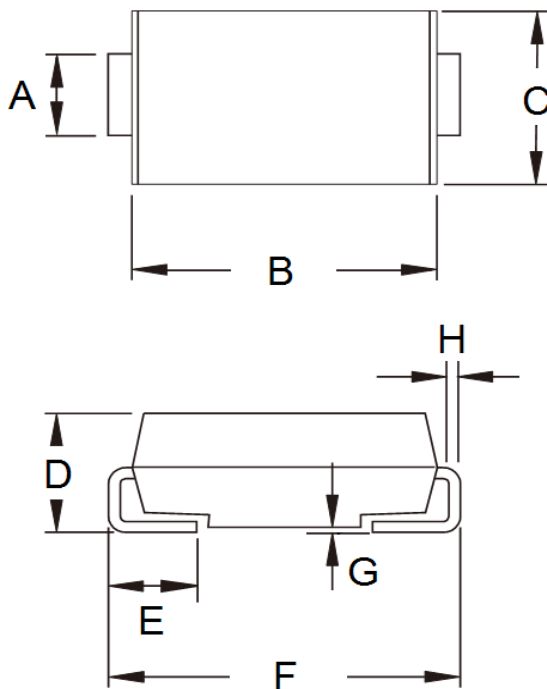


FIG. 7 TYPICAL JUNCTION CAPACITANCE

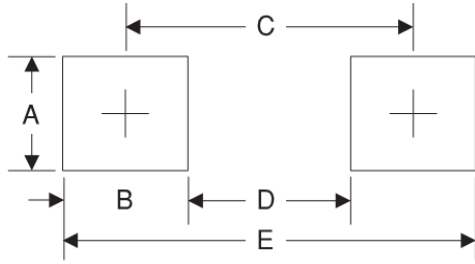


PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.95	2.10	0.077	0.083
B	4.25	4.75	0.167	0.187
C	3.48	3.73	0.137	0.147
D	1.99	2.61	0.078	0.103
E	0.90	1.41	0.035	0.056
F	5.10	5.30	0.201	0.209
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	2.3	0.091
B	2.5	0.098
C	4.3	0.169
D	1.8	0.071
E	6.8	0.268

MARKING DIAGRAM



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

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