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

DO-214AA (SMB)

Pb-Free

RoHS COMPLIANT

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)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

PARAMETER	SYMBOL	MUR 105S	MUR 110S	MUR 115S	MUR 120S	MUR 140S	MUR 160S	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	400	600	V
Maximum average forward rectified current	$I_{F(AV)}$	1						A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40				35		A
Maximum instantaneous forward voltage (Note 1) @ 1 A, T_J=25℃ @ 1 A, T_J=150℃	V_F	0.875 0.710				1.25 1.05		V
Maximum reverse current @ rated VR T_J=25 ℃ T_J=150 ℃	I_R	2 50				5 150		μA
Maximum reverse recovery time (Note 2)	Trr	25				50		ns
Typical thermal resistance	$R_{\theta jL}$	17						^{O}C/W
Operating junction temperature range	T_J	- 55 to +175						^{O}C
Storage temperature range	T_{STG}	- 55 to +175						^{O}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

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℃ unless otherwise noted)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

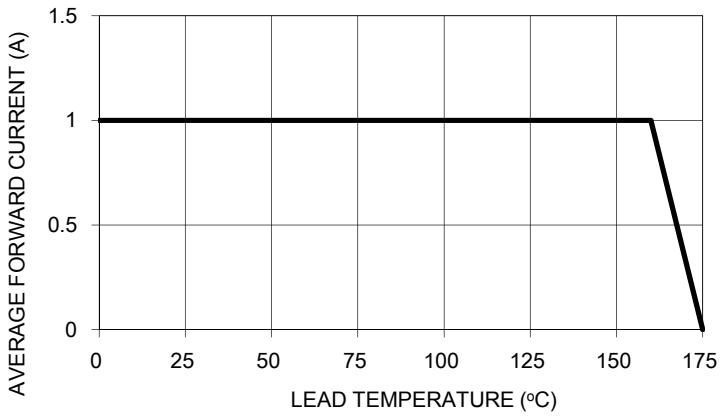


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

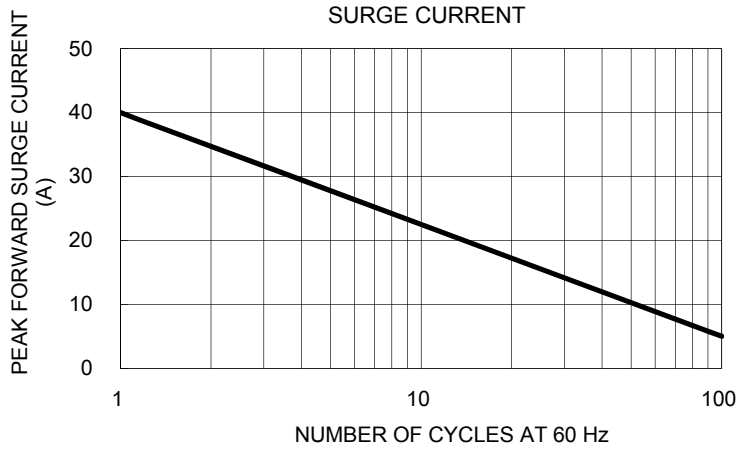


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

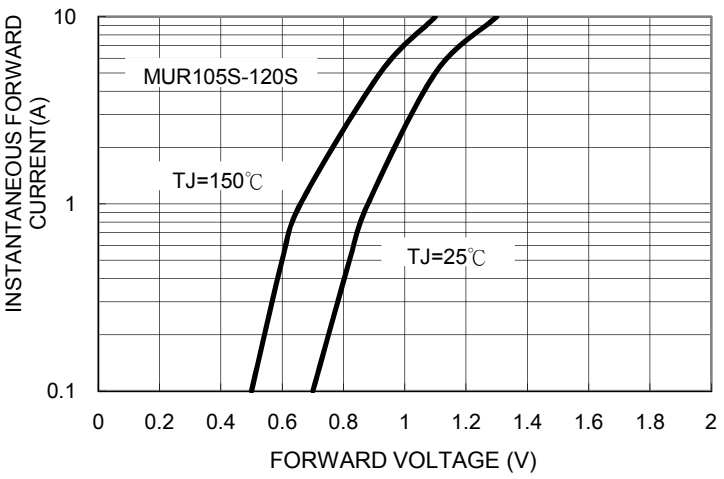


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

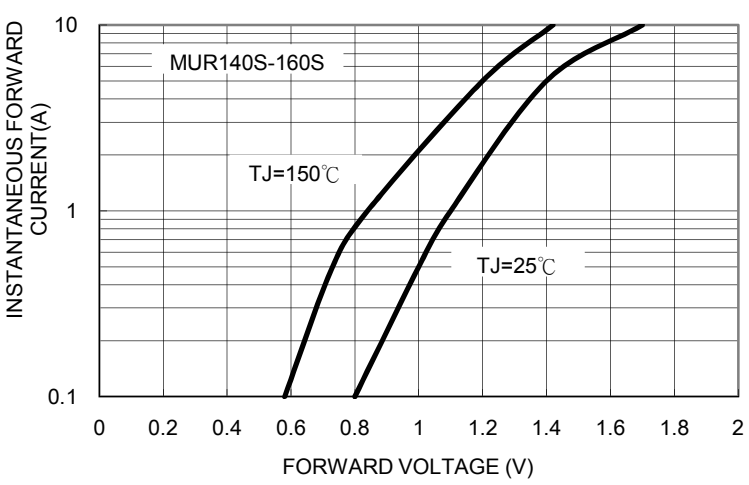


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

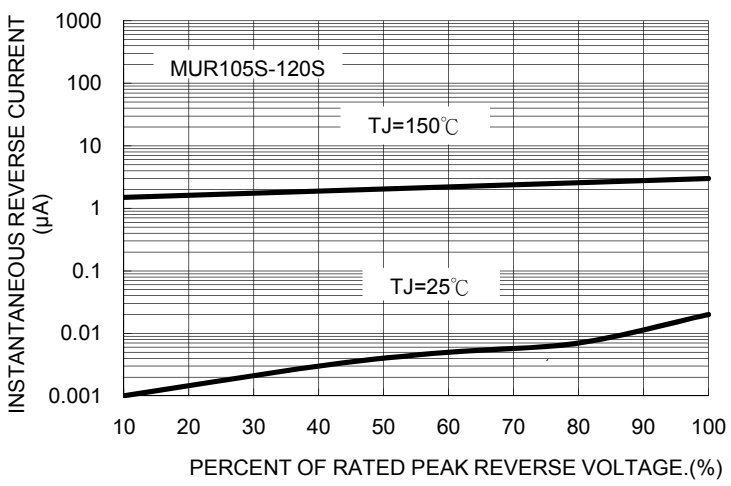


FIG. 6 TYPICAL REVERSE CHARACTERISTICS

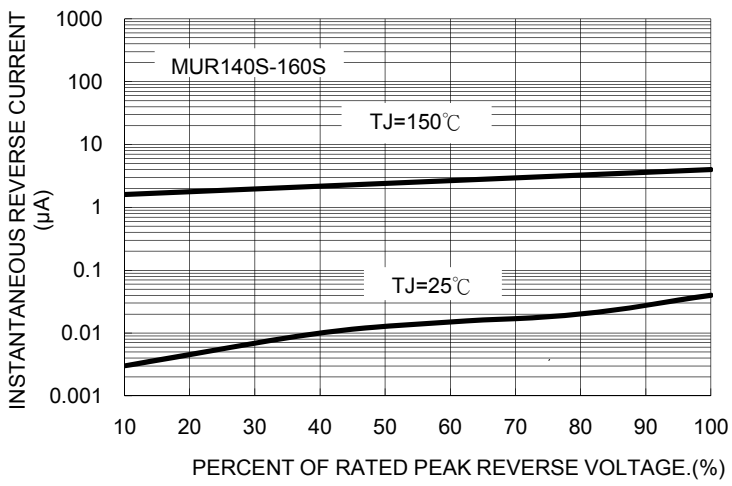
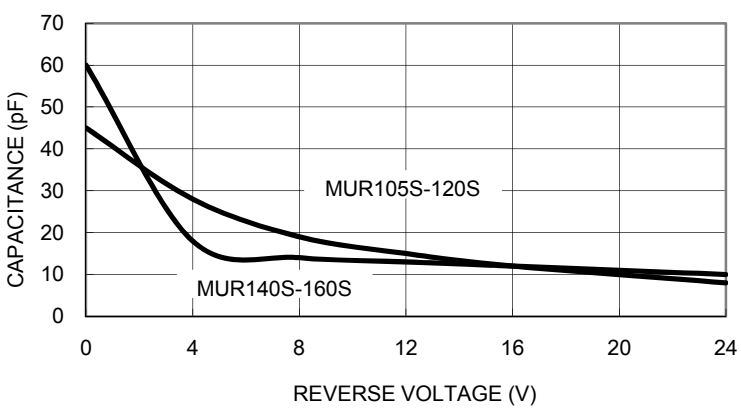
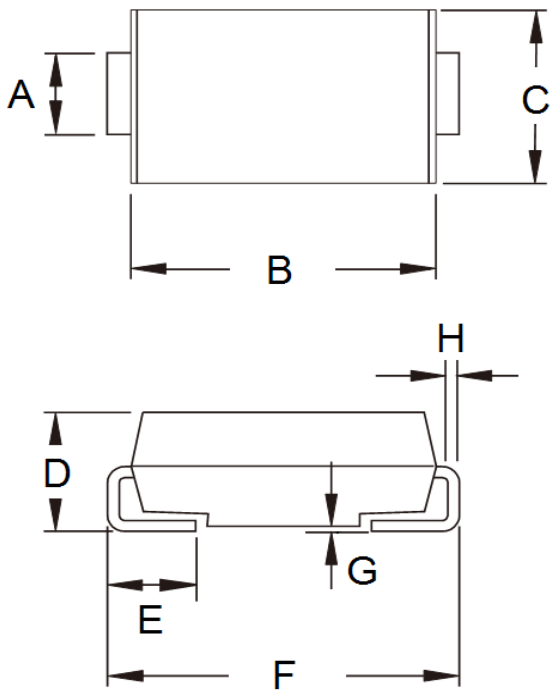


FIG. 7 TYPICAL JUNCTION CAPACITANCE

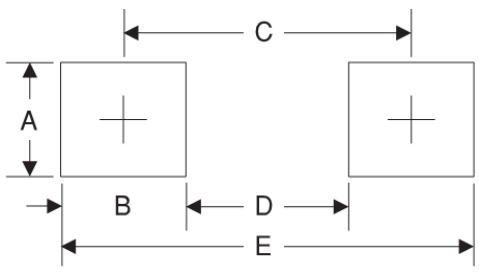


PACKAGE OUTLINE DIMENSIONS



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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied,to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or seling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taiwan Semiconductor:

MUR160S MUR160S R5 MUR105S R5G MUR140S R4G MUR105S R4 MUR160S R4 MUR160SHR4 MUR160S R5G MUR105SHR4 MUR110S R4G MUR105SHR5 MUR110S R4 MUR140S R4 MUR140S R5G MUR110SHR4 MUR140SHR4 MUR115SHR5 MUR120SHR4 MUR120S R5G MUR115S R5 MUR115S R4G MUR115SHR4 MUR160SHR5 MUR110SHR5 MUR120S R4G MUR110S R5G MUR140SHR5 MUR115S R5G MUR160S R4G MUR140S R5 MUR120SHR5 MUR115S R4 MUR120S R4 MUR105S R5 MUR105S R4G MUR110S R5 MUR105S M4G MUR110S M4G MUR115S M4G MUR120S M4G MUR140S M4G MUR160S M4G