1A, 50V - 600V Ultra Fast Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Ultra Fast recovery time for high efficiency
- Low forward voltage, low power loss
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	50 - 600	V
I_{FSM}	40, 35	A
$T_{J\ MAX}$	175	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- Freewheeling application

MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.090g (approximately)

DO-214AA (SMB)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)								
PARAMETER	**SYMBOL**	**MUR 105SH**	**MUR 110SH**	**MUR 115SH**	**MUR 120SH**	**MUR 140SH**	**MUR 160SH**	**UNIT**
Marking code on the device		MUR 105S	MUR 110S	MUR 115S	MUR 120S	MUR 140S	MUR 160S	
Repetitive peak reverse voltage	V_{RRM}	50	100	150	200	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	105	140	280	420	V
Forward current	I_F	1						A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	40				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-lead thermal resistance	$R_{\Theta JL}$	17	°C/W

ELECTRICAL SPECIFICATIONS (TA = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	MUR105SH	I_F = 1A, T_J = 25°C	V_F	-	0.875	V
	MUR110SH					V
	MUR115SH					V
	MUR120SH					V
	MUR140SH			-	1.250	V
	MUR160SH					V
	MUR105SH	I_F = 1A, T_J = 150°C		-	0.710	V
	MUR110SH					V
	MUR115SH					V
	MUR120SH					V
	MUR140SH			-	1.050	V
	MUR160SH					V
Reverse current @ rated V_R[2]	MUR105SH	T_J = 25°C	I_R	-	2	µA
	MUR110SH					µA
	MUR115SH					µA
	MUR120SH					µA
	MUR140SH			-	5	µA
	MUR160SH					µA
	MUR105SH	T_J = 150°C		-	50	µA
	MUR110SH					µA
	MUR115SH					µA
	MUR120SH					µA
	MUR140SH			-	150	µA
	MUR160SH					µA
Reverse recovery time	MUR105SH	I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	25	ns
	MUR110SH					ns
	MUR115SH					ns
	MUR120SH					ns
	MUR140SH			-	50	ns
	MUR160SH					ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE[1]	**PACKAGE**	**PACKING**
MUR1xSH	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(MUR105SH) to 600V(MUR160SH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

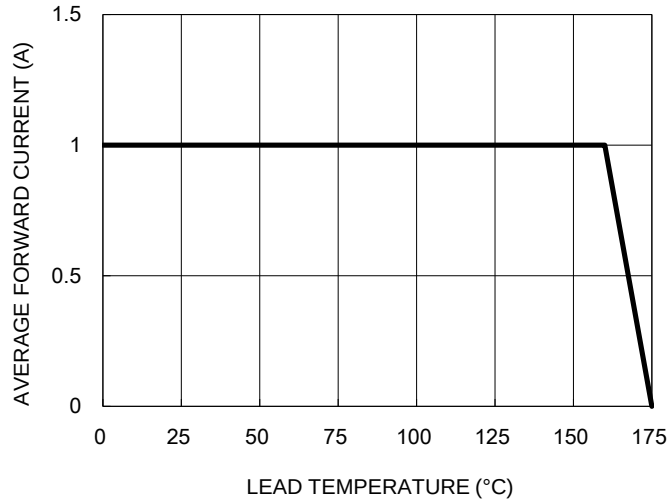


Fig.2 Typical Junction Capacitance

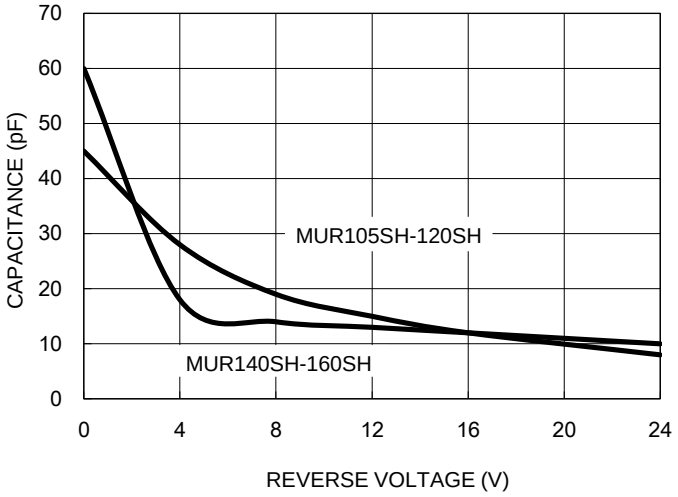


Fig.3 Typical Reverse Characteristics

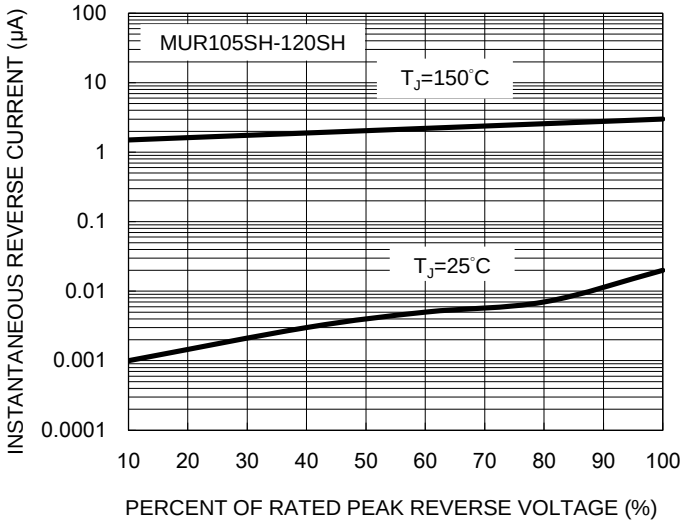
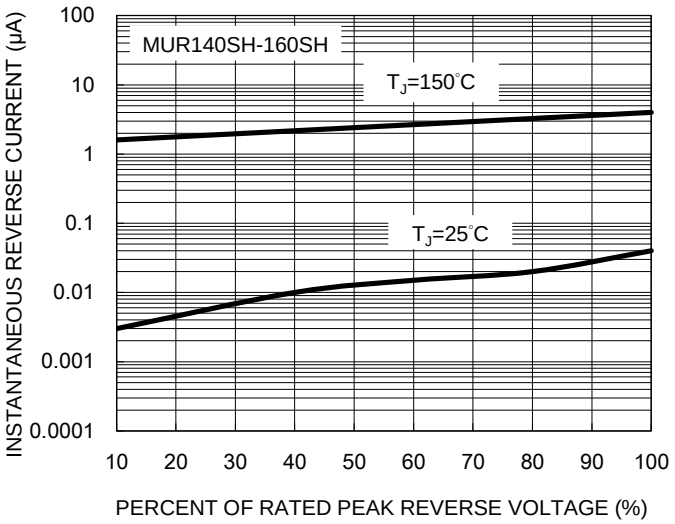


Fig.4 Typical Reverse Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Typical Forward Characteristics

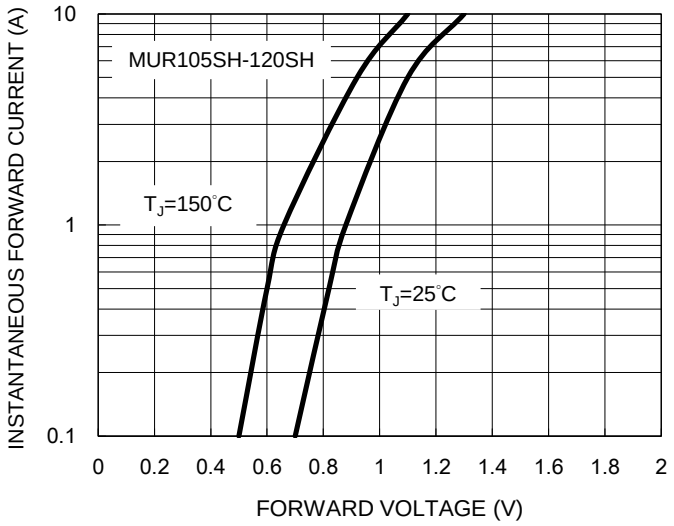


Fig.6 Typical Forward Characteristics

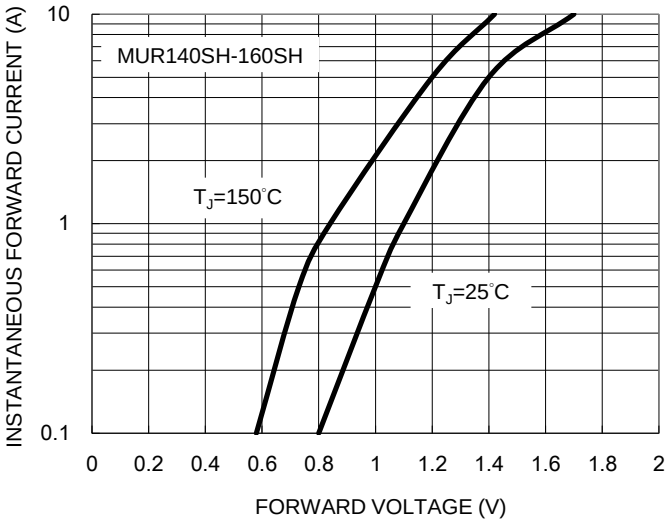
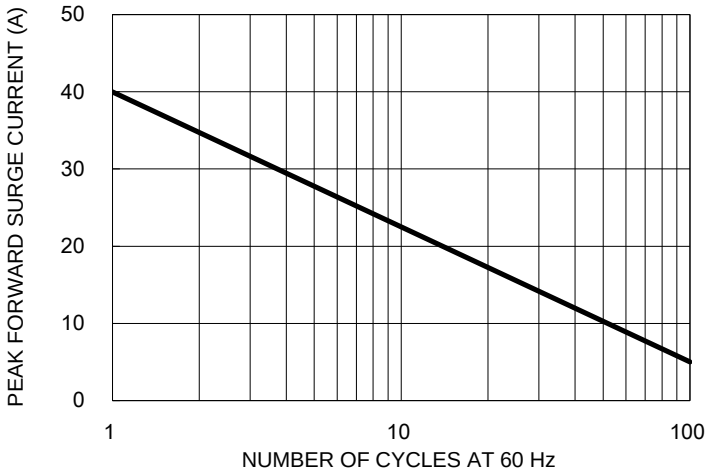
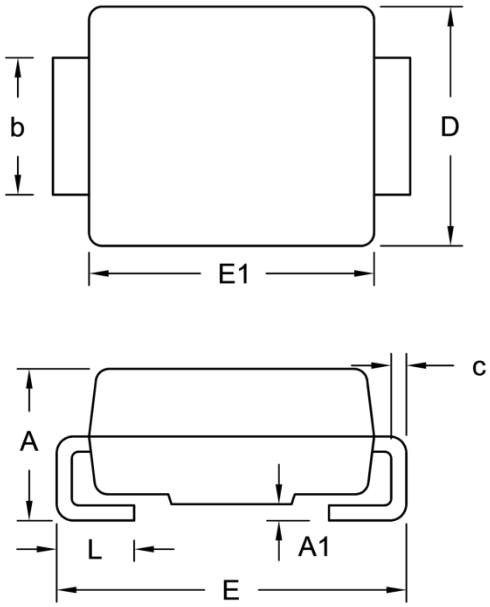


Fig.7 Maximum Non-repetitive Forward Surge Current



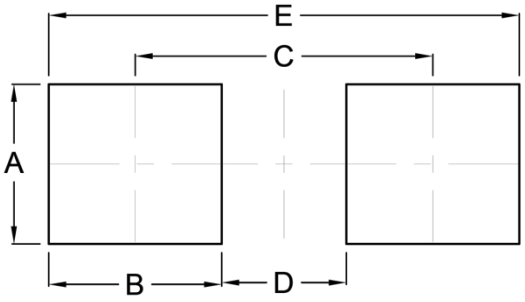
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YW = Date Code
F = Factory Code

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