

## 3A, 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
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

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

### MECHANICAL DATA

- Case: DO-214AB (SMC)
- 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: 0.210g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	50 - 600	V
$I_{FSM}$	75	A
$T_{JMAX}$	175	°C
Package	DO-214AB (SMC)	
Configuration	Single die	


**DO-214AB (SMC)**


ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	MUR 305SH	MUR 310SH	MUR 315SH	MUR 320SH	MUR 340SH	MUR 360SH	UNIT
Marking code on the device		MUR 305S	MUR 310S	MUR 315S	MUR 320S	MUR 340S	MUR 360S	
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	$I_F$	3						A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	75						A
Junction temperature	$T_J$	- 55 to +175						°C
Storage temperature	$T_{STG}$	- 55 to +175						°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	11	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	MUR305SH MUR310SH MUR315SH MUR320SH	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.875	V
	MUR340SH MUR360SH			-	1.250	V
	MUR305SH MUR310SH MUR315SH MUR320SH	$I_F = 3\text{A}, T_J = 150^\circ\text{C}$	$V_F$	-	0.710	V
	MUR340SH MUR360SH			-	1.050	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	MUR305SH MUR310SH MUR315SH MUR320SH	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	MUR340SH MUR360SH			-	10	$\mu\text{A}$
	MUR305SH MUR310SH MUR315SH MUR320SH	$T_J = 150^\circ\text{C}$	$I_R$	-	150	$\mu\text{A}$
	MUR340SH MUR360SH			-	250	$\mu\text{A}$
Reverse recovery time	MUR305SH MUR310SH MUR315SH MUR320SH	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	25	ns
	MUR340SH MUR360SH			-	50	ns

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
MUR3xSH	DO-214AB (SMC)	3,000 / Tape & Reel

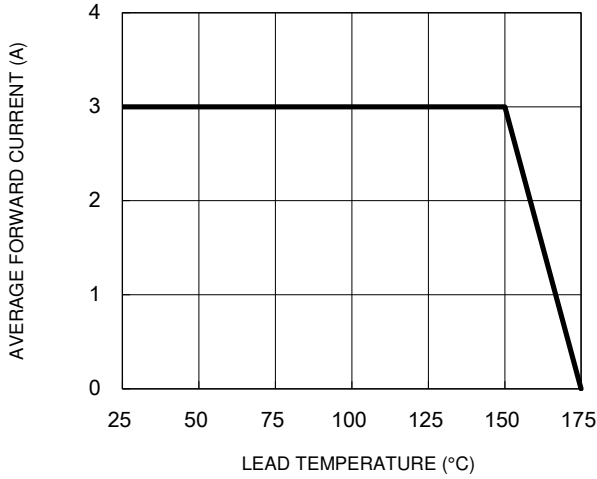
**Notes:**

1. "x" defines voltage from 50V(MUR305SH) to 600V(MUR360SH)

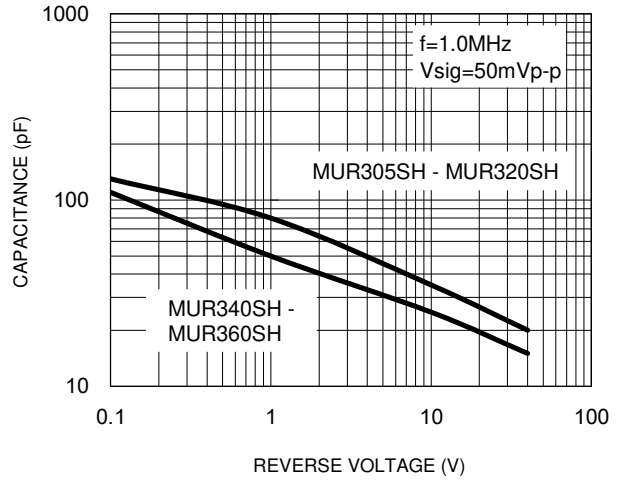
**CHARACTERISTICS CURVES**

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

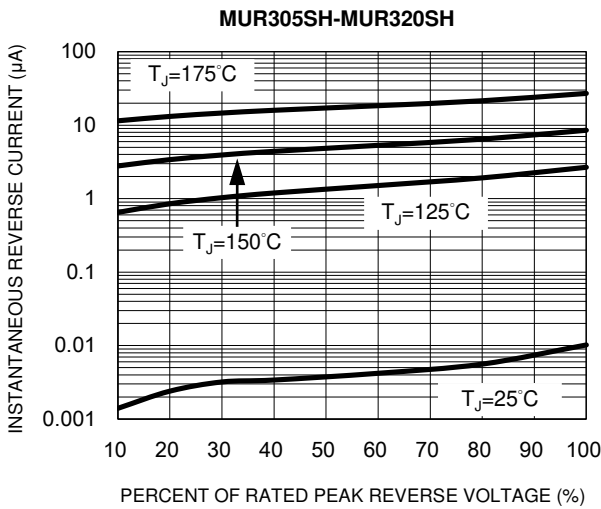
**Fig.1 Forward Current Derating Curve**



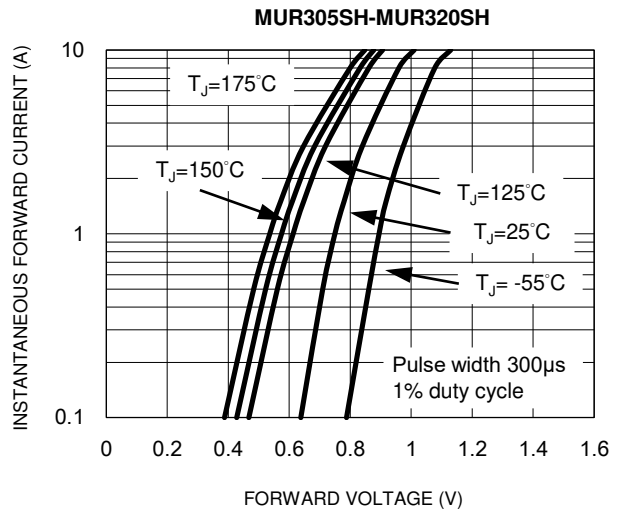
**Fig.2 Typical Junction Capacitance**



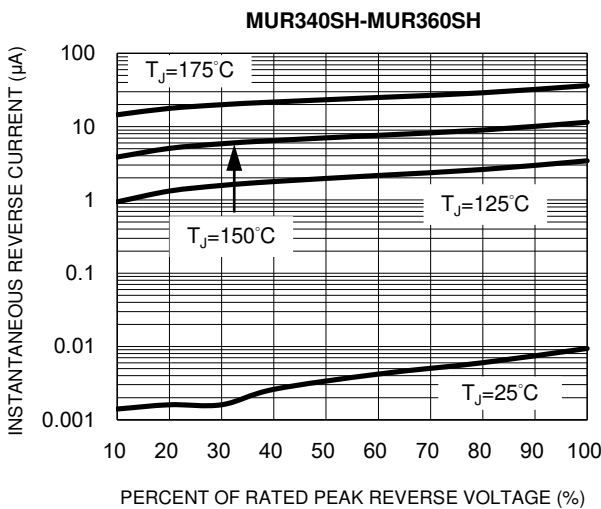
**Fig.3 Typical Reverse Characteristics**



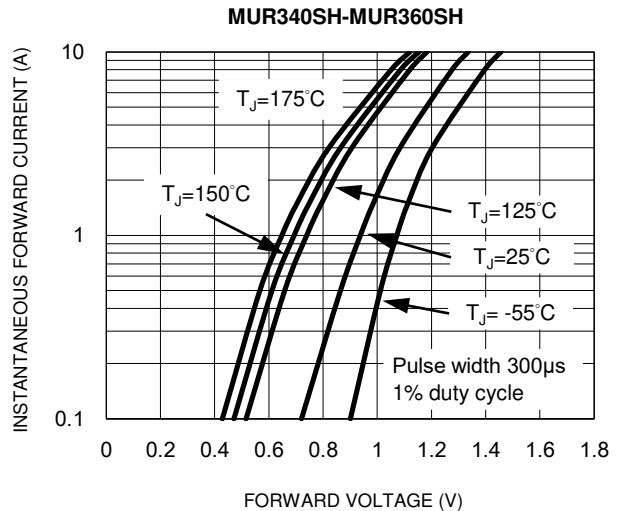
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Reverse Characteristics**



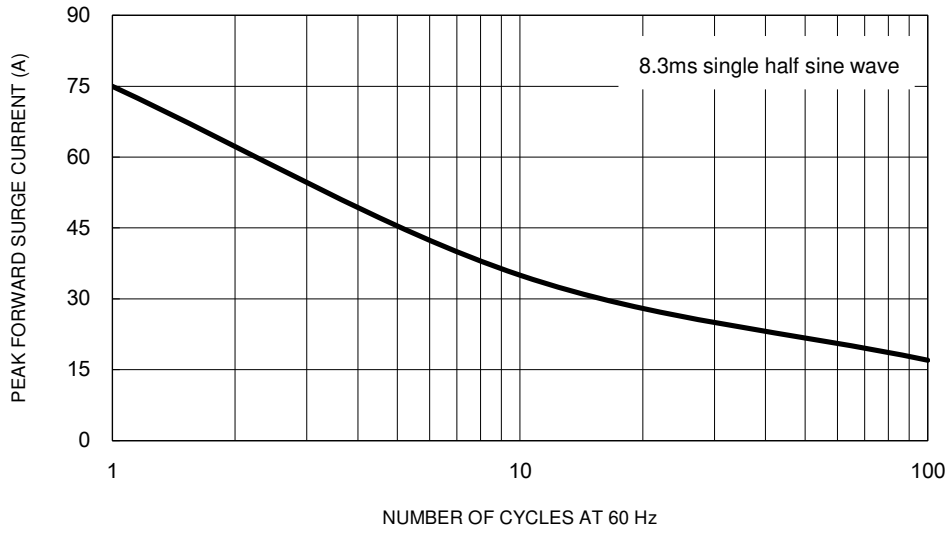
**Fig.6 Typical Forward Characteristics**



**CHARACTERISTICS CURVES**

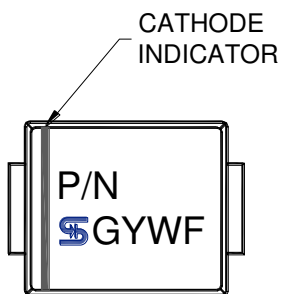
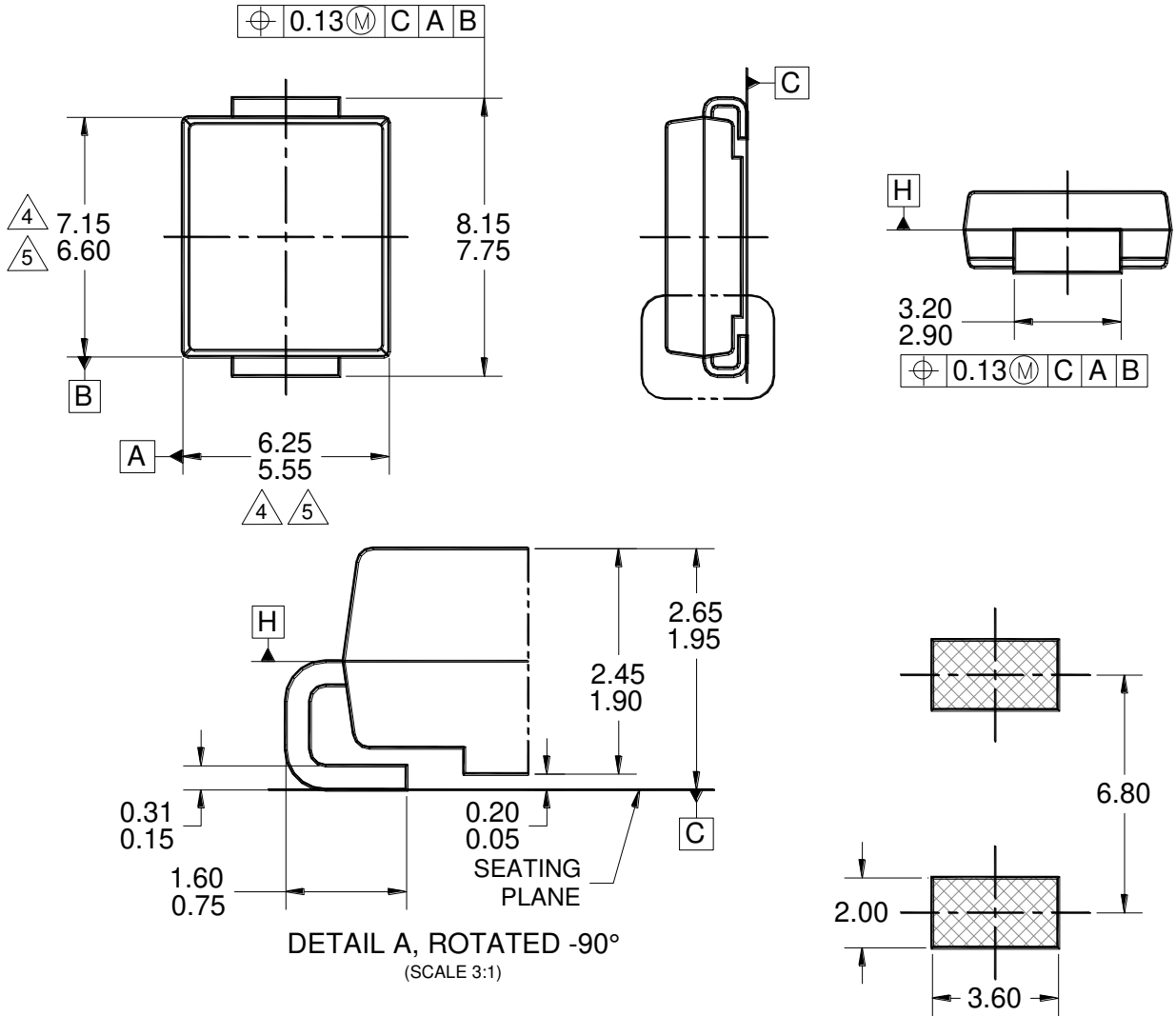
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.7 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**

**DO-214AB (SMC)**



**MARKING DIAGRAM**

P/N = MARKING CODE  
G = GREEN COMPOUND  
YW = DATE CODE  
F = FACTORY CODE

**SUGGESTED PAD LAYOUT**

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AB, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMC-036 REV A.

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