

## 5A, 50V - 60V Trench Schottky Surface Mount Rectifier

### FEATURES

- Patented Trench Schottky technology
- Low power loss, high efficiency
- Ideal for automated placement
- High forward surge capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Trench Schottky barrier rectifier is designed for high frequency miniature switched mode power supplies such as adapters, lighting and on-board DC/DC converters.

### MECHANICAL DATA

- Case: DO-214AC (SMA)
- 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: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	5	A
$V_{RRM}$	50 - 60	V
$I_{FSM}$	75	A
$T_{JMAX}$	150	°C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	TSSA5U50	TSSA5U60	UNIT
Marking code on the device		5U50	5U60	
Repetitive peak reverse voltage	$V_{RRM}$	50	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	42	V
Forward current	$I_F$	5		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 +150		°C
Storage temperature	$T_{STG}$	- 55 to +150		°C

<b>THERMAL PERFORMANCE</b>				
<b>PARAMETER</b>		<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	TSSA5U50	$R_{\theta JL}$	25	°C/W
	TSSA5U60		28	°C/W
Junction-to-ambient thermal resistance		$R_{\theta JA}$	70	°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>	TSSA5U50	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.44	0.54	V
	TSSA5U60			0.48	0.56	V
	TSSA5U50	$I_F = 5\text{A}, T_J = 125^\circ\text{C}$		0.39	0.49	V
	TSSA5U60			0.44	0.52	V
Reverse current @ rated $V_R$ <sup>(2)</sup>		$T_J = 25^\circ\text{C}$	$I_R$	-	300	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		-	50	mA

**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</b> <sup>(1)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
TSSA5Ux	DO-214AC (SMA)	7,500 / Tape & Reel

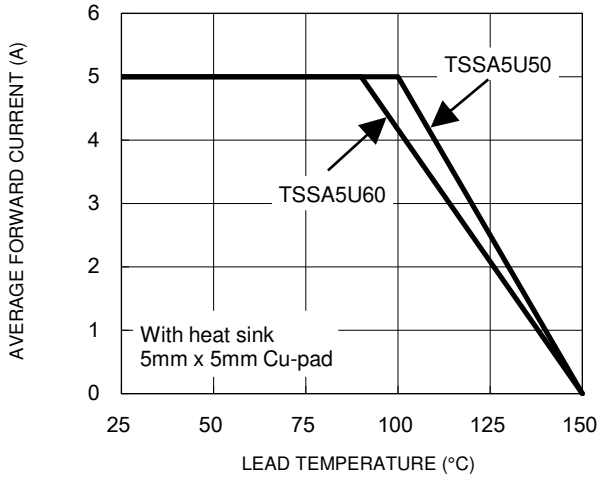
**Notes:**

1. "x" defines voltage from 50V(TSSA5U50) to 60V(TSSA5U60)

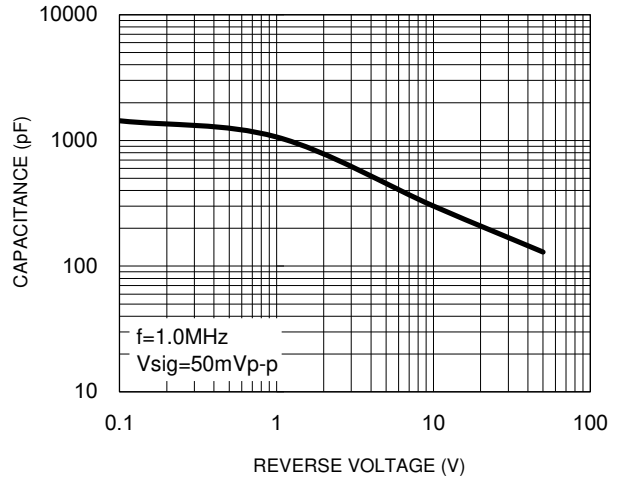
**CHARACTERISTICS CURVES**

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

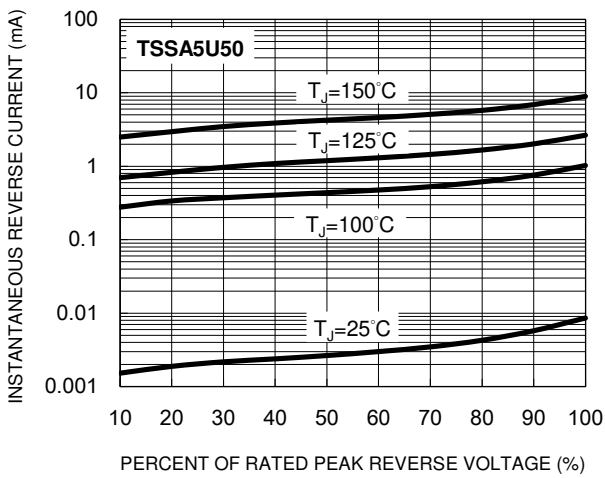
**Fig.1 Forward Current Derating Curve**



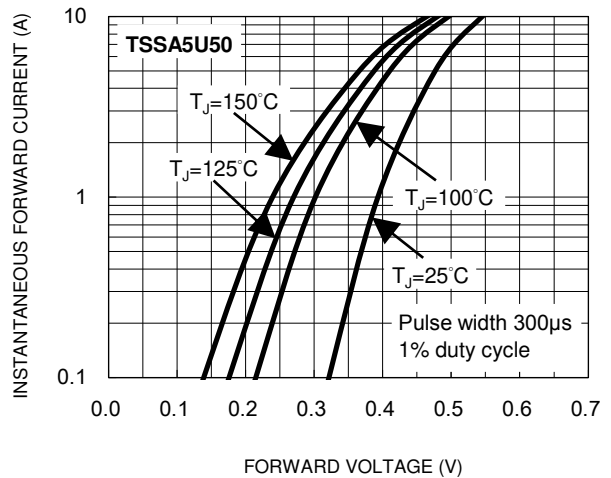
**Fig.2 Typical Junction Capacitance**



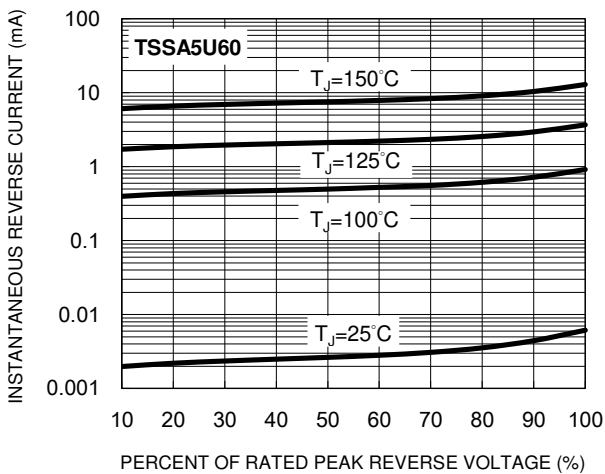
**Fig.3 Typical Reverse Characteristics**



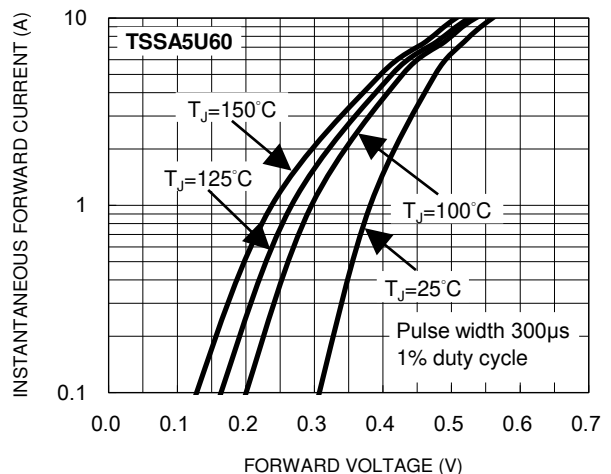
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Reverse Characteristics**



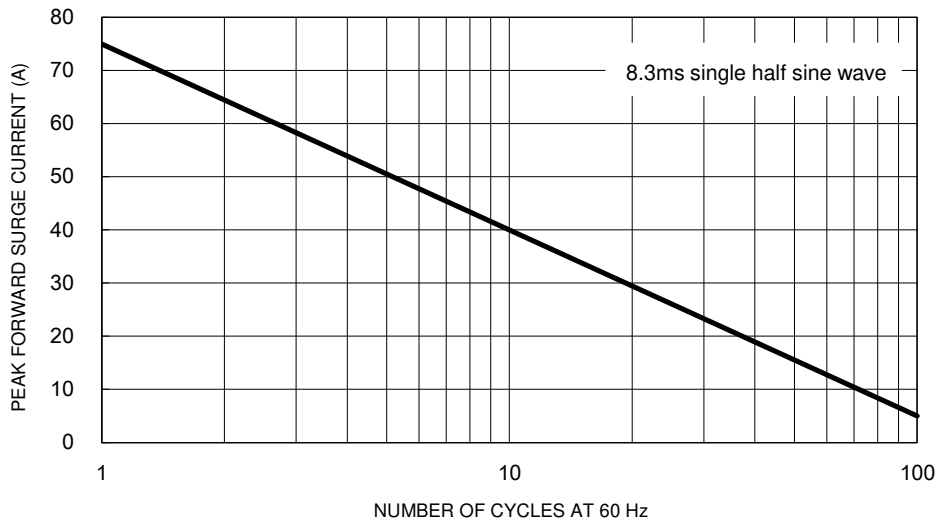
**Fig.6 Typical Forward Characteristics**



**CHARACTERISTICS CURVES**

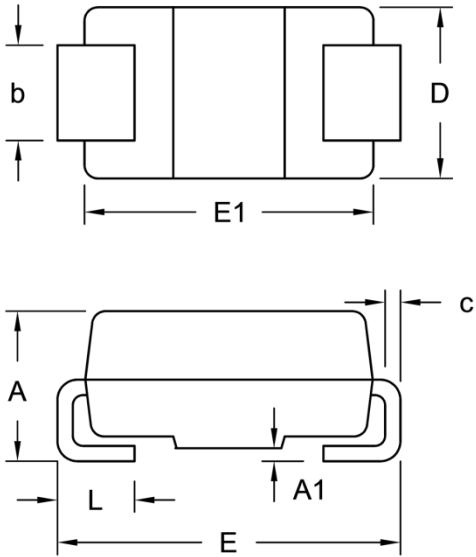
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

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



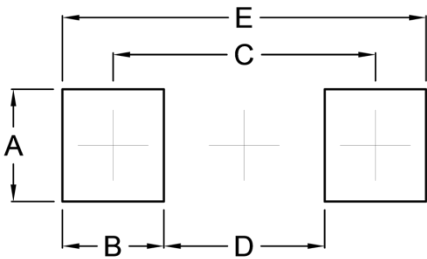
**PACKAGE OUTLINE DIMENSIONS**

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

**MARKING DIAGRAM**



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

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