

# 3A, 60V Trench Schottky Surface Mount Rectifier

#### **FEATURES**

- AEC-Q101 qualified
- Patented Trench Schottky technology
- Low power loss, high efficiency
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

#### **APPLICATIONS**

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

### **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 <sub>F</sub>	3	Α	
$V_{RRM}$	60	٧	
I <sub>FSM</sub>	60	Α	
T <sub>J MAX</sub>	150	°C	
Package	DO-214AC (SMA)		
Configuration	Single die		









DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)			
PARAMETER	SYMBOL	TSSA3U60H	UNIT
Marking code on the device		3U60	
Repetitive peak reverse voltage	$V_{RRM}$	60	V
Reverse voltage, total rms value	V <sub>R(RMS)</sub>	42	V
Forward current	I <sub>F</sub>	3	Α
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	60	Α
Junction temperature	T <sub>J</sub>	- 55 to +150	°C
Storage temperature	T <sub>STG</sub>	- 55 to +150	°C

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THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	R <sub>eJL</sub>	27	°C/W
Junction-to-ambient thermal resistance	R <sub>eJA</sub>	70	°C/W
Junction-to-case thermal resistance	R <sub>eJC</sub>	20	°C/W

**Thermal Performance Note:** Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T <sub>A</sub> = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	$I_{F} = 3A, T_{J} = 25^{\circ}C$	V	0.48	0.54	V
Forward Voltage	I <sub>F</sub> = 3A, T <sub>J</sub> = 125°C	V <sub>F</sub>	0.41	0.50	V
Reverse current @ rated V <sub>R</sub> <sup>(2)</sup>	T <sub>J</sub> = 25°C	I <sub>R</sub>	-	500	μΑ
	T <sub>J</sub> = 125°C		12	30	mA
Junction capacitance	1MHz, V <sub>R</sub> = 4.0V	CJ	450	610	pF
Reverse recovery time	$I_F = 0.5A, I_R = 1.0A,$ $I_{rr} = 0.25A$	t <sub>rr</sub>	20	25	ns

### Notes:

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

ORDERING INFORMATION			
ORDERING CODE	PACKAGE	PACKING	
TSSA3U60H	DO-214AC (SMA)	7,500 / Tape & Reel	



### **CHARACTERISTICS CURVES**

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

**Fig.1 Forward Current Derating Curve** 

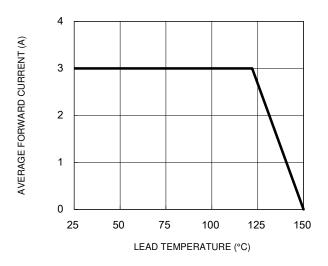


Fig.3 Typical Reverse Characteristics

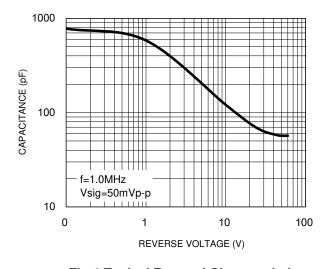
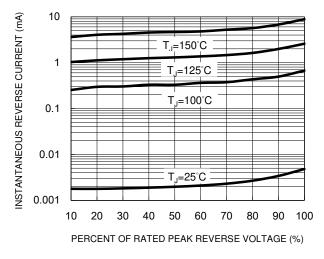


Fig.2 Typical Junction Capacitance

Fig.4 Typical Forward Characteristics



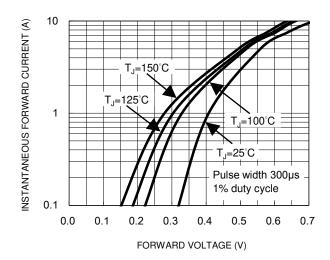
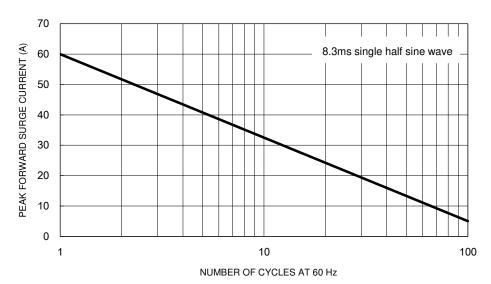


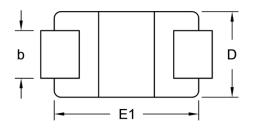
Fig.5 Maximum Non-Repetitive Forward Surge Current

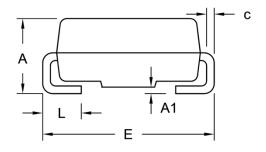




## **PACKAGE OUTLINE DIMENSIONS**

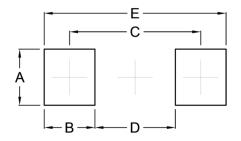
# DO-214AC (SMA)





DIM.	Unit (mm)		Unit	Init (inch)	
Dilvi.	Min.	Max.	Min.	Max.	
Α	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	
С	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)
Α	1.68	0.066
В	1.52	0.060
С	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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