

10A, 60V Trench Schottky Rectifier

FEATURES

- AEC-Q101 qualified
- Patented Trench Schottky technology
- Low power loss, high efficiency
- Ideal for automated placement
- Wettable flank
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter
- Automotive

MECHANICAL DATA

- Case: TO-277A (SMPC4.6U)
- 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: 0.104g (approximately)

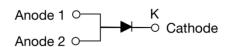
KEY PARAMETERS			
PARAMETER	VALUE	UNIT	
I _F	10	Α	
V_{RRM}	60	V	
I _{FSM}	220	Α	
T_{JMAX}	175	°C	
Package	TO-277A (SMPC4.6U)		
Configuration	Single die		







TO-277A (SMPC4.6U)



PARAMETER		SYMBOL	TSUP10M60SH	UNIT
Marking code on the device			10M60	
Repetitive peak reverse voltage		V_{RRM}	60	V
Reverse voltage, total rms value		V _{R(RMS)}	42	V
Forward current		I _F	10	А
Surge peak forward current single half	t = 8.3ms		220	
sine-wave superimposed on rated load	t = 1.0ms	I _{FSM}	330	A
Junction temperature		TJ	-55 to +175	°C
Storage temperature		T _{STG}	-55 to +175	°C



THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	6	°C/W
Junction-to-ambient thermal resistance	R _{OJA}	45	°C/W
Junction-to-case thermal resistance	R _{eJC}	9	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	I _F = 5A, T _J = 25°C		0.53	-	V
	$I_F = 10A, T_J = 25^{\circ}C$	\	0.61	0.64	V
	I _F = 5A, T _J = 125°C	V _F	0.45	-	V
	I _F = 10A, T _J = 125°C		0.56	0.60	V
Reverse current @ rated V _R ⁽²⁾	T _J = 25°C		-	250	μΑ
	T _J = 125°C	I _R	-	15	mA
Junction capacitance	1MHz, V _R = 4.0V	CJ	658	-	pF

Notes:

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

ORDERING INFORMATION			
ORDERING CODE	PACKAGE	PACKING	
TSUP10M60SH	TO-277A (SMPC4.6U)	6,000 / Tape & Reel	



CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

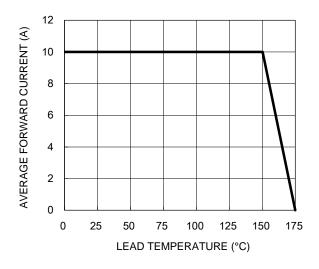


Fig.2 Typical Junction Capacitance

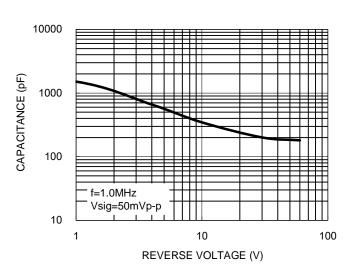


Fig.3 Typical Reverse Characteristics

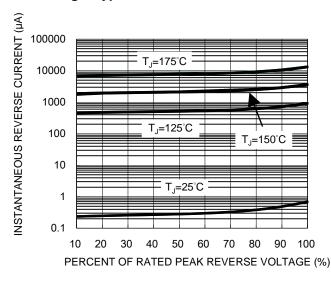


Fig.4 Typical Forward Characteristics

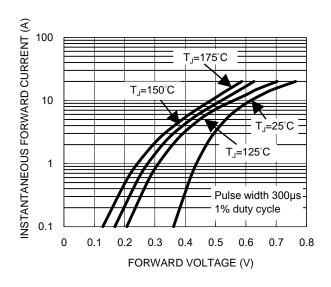
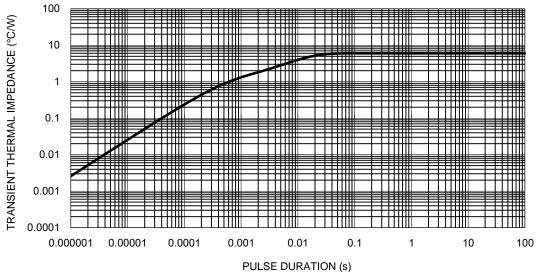


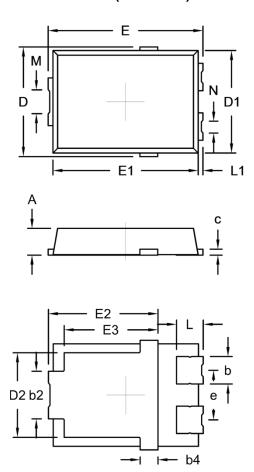
Fig.5 Typical Transient Thermal Impedance





PACKAGE OUTLINE DIMENSIONS

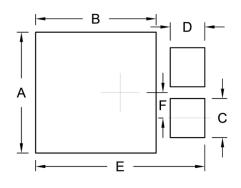
TO-277A (SMPC4.6U)



DIM	DIM. Unit (mm)		Unit ((inch)
DIIVI.	Min.	Max.	Min.	Max.
А	1.00	1.20	0.039	0.047
b	1.05	1.35	0.041	0.053
b2	1.90	2.20	0.075	0.087
b4	0.75 (NOM.)		0.030 (NOM.)	
С	0.15	0.40	0.006	0.016
D	4.45	4.75	0.175	0.187
D1	4.25	4.35	0.167	0.171
D2	3.40	3.70	0.134	0.146
E	6.35	6.65	0.250	0.262
E1	6.05	6.15	0.238	0.242
E2	4.40	4.80	0.173	0.189
E3	3.94 (NOM.)		0.155	(NOM.)
е	2.08 (NOM.)		0.082	(NOM.)
L	0.94	1.24	0.037	0.049
L1	0.05	0.35	0.002	0.014
М	0.65	1.15	0.026	0.045
N	0.25	0.75	0.010	0.030

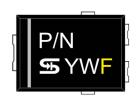
Package body size D1 and E1 do not include mold flash Mold flash shall not exceed 0.1mm per side

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
Α	4.95	0.195
В	4.95	0.195
С	1.60	0.063
D	1.42	0.056
E	6.95	0.274
F	1.04	0.041

MARKING DIAGRAM



P/N = Marking Code YW = Date Code F = Factory Code



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