

20A, 60V Trench Schottky Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ high efficiency
- High forward surge capability
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

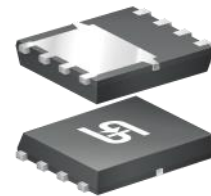
APPLICATIONS

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

MECHANICAL DATA

- Case: PDFN56
- 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: As marked
- Weight: 0.096g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	20	A
V_{RRM}	60	V
I_{FSM}	200	A
T_{JMAX}	150	°C
Package	PDFN56	
Configuration	Single die	



PDFN56



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	TSN520M60H	UNIT
Marking code on the device		520M60	
Repetitive peak reverse voltage	V_{RRM}	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	42	V
Forward current	I_F	20	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	200	A
Junction temperature	T_J	- 55 to +150	°C
Storage temperature	T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	7	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	V_F	0.43	-	V
	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$		0.48	0.58	V
	$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.33	-	V
	$I_F = 20\text{A}, T_J = 125^\circ\text{C}$		0.42	0.52	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	500	μA
	$T_J = 125^\circ\text{C}$		-	100	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
TSN520M60H	PDFN56	6,000 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

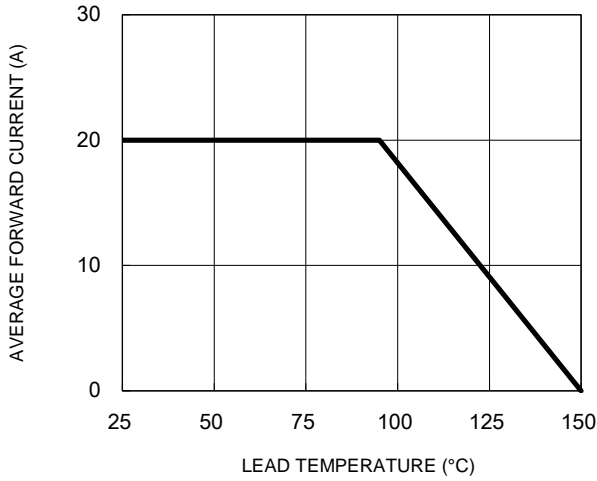


Fig.2 Typical Junction Capacitance

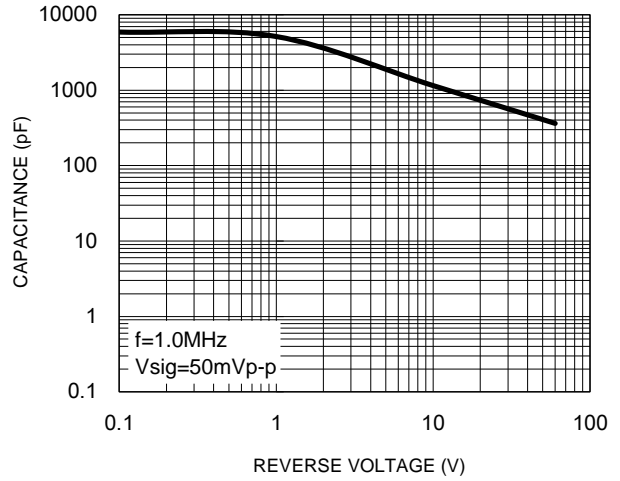


Fig.3 Typical Reverse Characteristics

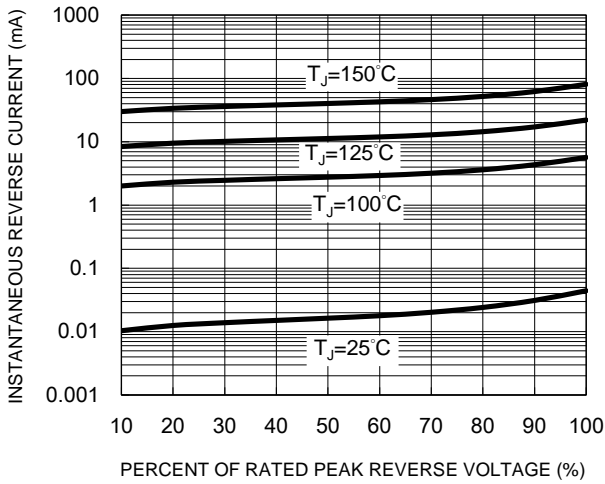
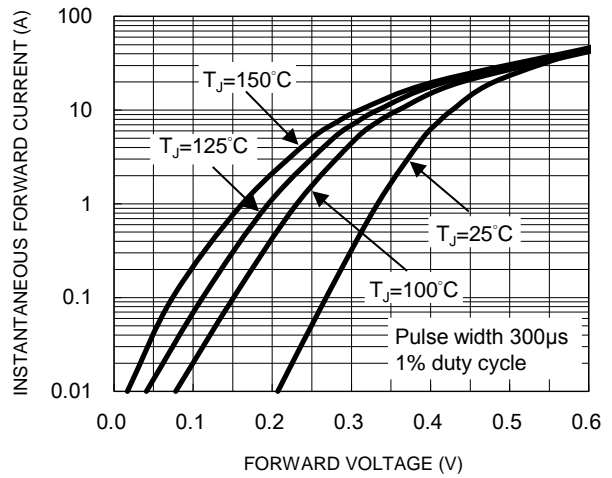
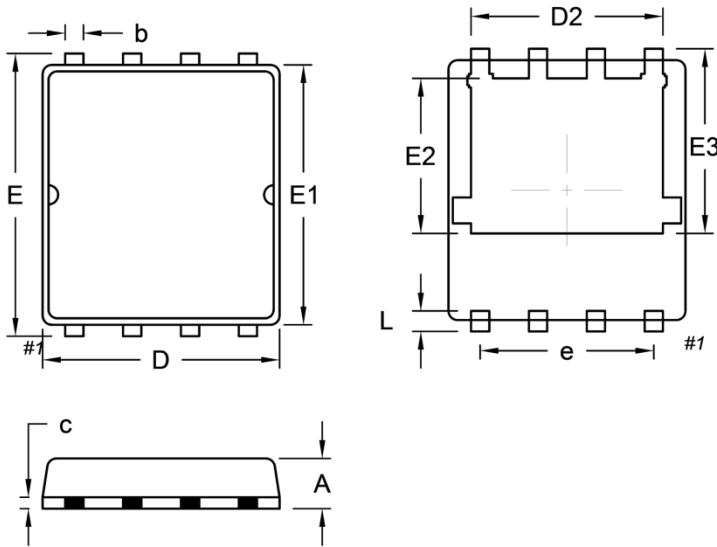


Fig.4 Typical Forward Characteristics



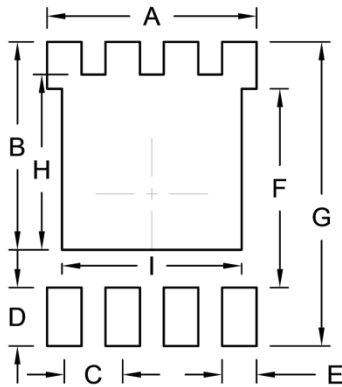
PACKAGE OUTLINE DIMENSIONS

PDFN56



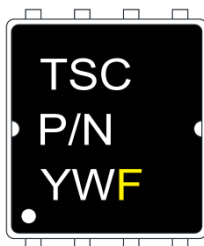
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.95	1.25	0.037	0.049
b	0.25	0.55	0.010	0.022
c	0.10	0.40	0.004	0.016
D	5.05	5.35	0.199	0.211
D2	4.06	4.36	0.160	0.172
E	6.00	6.40	0.236	0.252
E1	5.55	5.85	0.219	0.230
E2	3.25	3.55	0.128	0.140
E3	3.90	4.20	0.154	0.165
e	3.81(TYP.)		0.150(TYP.)	
L	0.30	0.60	0.012	0.024

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	4.56	0.180
B	4.52	0.178
C	1.27	0.050
D	1.27	0.050
E	0.75	0.030
F	4.32	0.170
G	6.61	0.260
H	3.81	0.150
I	3.91	0.154

MARKING DIAGRAM



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

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