TSF30H45C Taiwan Semiconductor

30A, 45V Trench Schottky Rectifier

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low power loss, high efficiency
- High forward surge capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: ITO-220AB
- 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
- Mounting torque: 0.56 N·m maximum
- Polarity: As marked
- Weight: 1.75g (approximately)

KEY PARAMETERS				
PARAMETER	VALUE	UNIT		
I _F	2 x 15	А		
V _{RRM}	45	V		
I _{FSM}	250	А		
T _{J MAX}	150	°C		
Package	ITO-220AB			
Configuration	Dual dies			

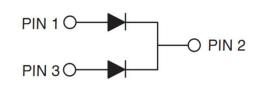


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ABSOLUTE MAXIMUM RATING	S (T _A = 25°C	unless otherwis	se noted)	
PARAMETER		SYMBOL	TSF30H45C	UNIT
Marking code on the device			TSF30H45C	
Repetitive peak reverse voltage		V _{RRM}	45	V
Reverse voltage, total rms value		V _{R(RMS)}	31	V
Forward current	per device		30	А
	per diode		15	А
Surge peak forward current single half sine- wave superimposed on rated load per diode	t = 8.3ms		250	А
	t = 1.0ms	FSM	830	А
Junction temperature		TJ	-55 to +150	°C
Storage temperature		T _{STG}	-55 to +150	°C





THERMAL PERFORMANCE			
PARAMETER	SYMBOL	ТҮР	UNIT
Junction-to-lead thermal resistance per diode	R _{ejl}	3.4	°C/W
Junction-to-ambient thermal resistance per diode	R _{eja}	14.8	°C/W
Junction-to-case thermal resistance per diode	R _{eJC}	3.0	°C/W

Thermal Performance Note: Mounted on Heat sink with 2" x 3" x 0.25" Al-Plate.

ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	ТҮР	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 7.5A, T_J = 25^{\circ}C$	V _F	0.42	-	V
	$I_F = 15A, T_J = 25^{\circ}C$		0.48	0.61	V
	$I_F = 7.5A, T_J = 125^{\circ}C$		0.32	-	V
	$I_F = 15A, T_J = 125^{\circ}C$		0.40	0.47	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^{\circ}C$	- I _R	-	112	μA
	T _J = 125°C		-	70	mA
Junction capacitance per diode	$1 MHz, V_R = 4.0 V$	CJ	1954	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
TSF30H45C	ITO-220AB	50 / Tube



CHARACTERISTICS CURVES

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

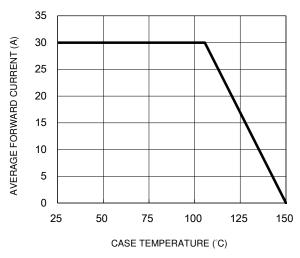


Fig.1 Forward Current Derating Curve

Fig.3 Typical Reverse Characteristics

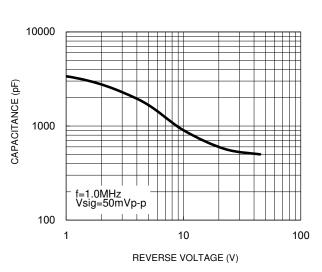
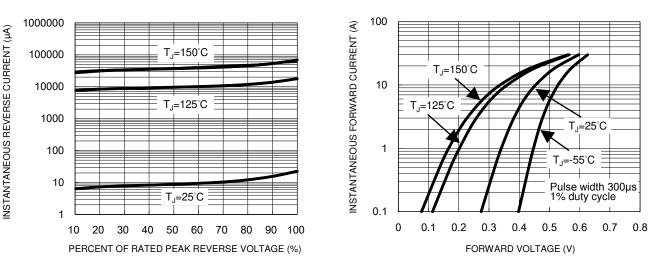


Fig.2 Typical Junction Capacitance

Fig.4 Typical Forward Characteristics



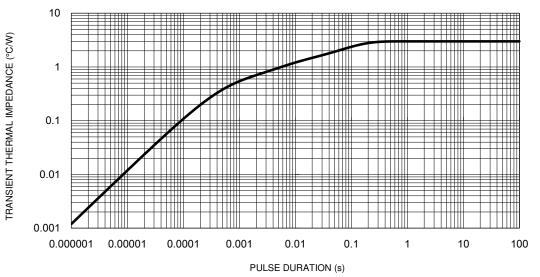
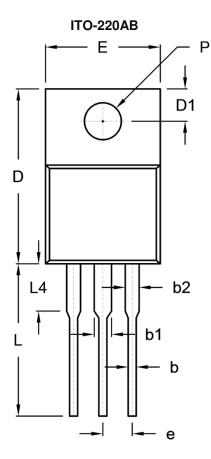


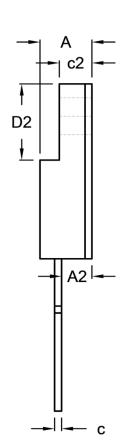
Fig.5 Typical Transient Thermal Impedance

Version: D2102



PACKAGE OUTLINE DIMENSIONS





DIM.	Unit (mm)		Unit	(inch)
DIN.	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.96	0.091	0.117
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
с	0.46	0.76	0.018	0.030
c2	2.50	3.16	0.098	0.124
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
е	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
L4	-	4.10	-	0.161
Р	3.00	3.40	0.118	0.134

MARKING DIAGRAM



= Marking Code
= Green Compound
= Date Code
= Factory Code



Taiwan Semiconductor

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