

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

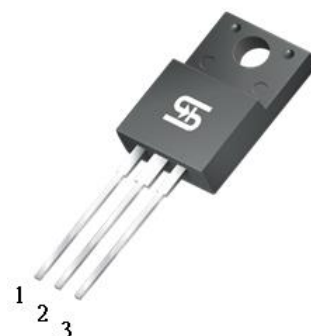
APPLICATIONS

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

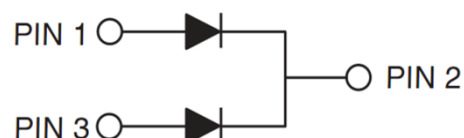
MECHANICAL DATA

- 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	A
V_{RRM}	45	V
I_{FSM}	250	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AB	
Configuration	Dual dies	



ITO-220AB



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise 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	I_F	30	A
	per diode		15	A
Surge peak forward current single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	I_{FSM}	250	A
	$t = 1.0\text{ms}$		830	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 per diode	$R_{\theta JL}$	3.4	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	14.8	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	3.0	°C/W

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

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 7.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.42	-	V
	$I_F = 15\text{A}, T_J = 25^\circ\text{C}$		0.48	0.61	V
	$I_F = 7.5\text{A}, T_J = 125^\circ\text{C}$		0.32	-	V
	$I_F = 15\text{A}, T_J = 125^\circ\text{C}$		0.40	0.47	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	112	μA
	$T_J = 125^\circ\text{C}$		-	70	mA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	C_J	1954	-	pF

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

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

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

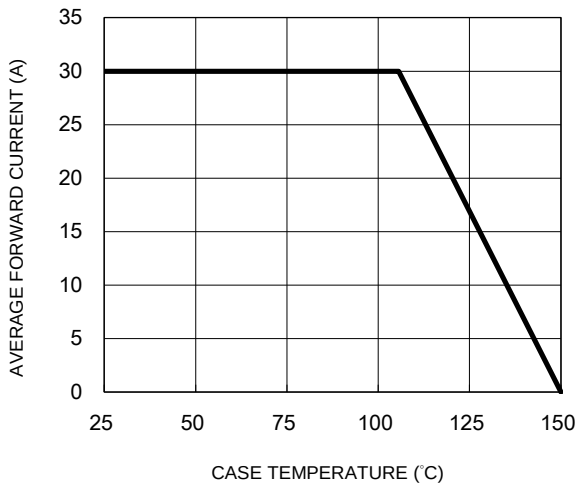


Fig.2 Typical Junction Capacitance

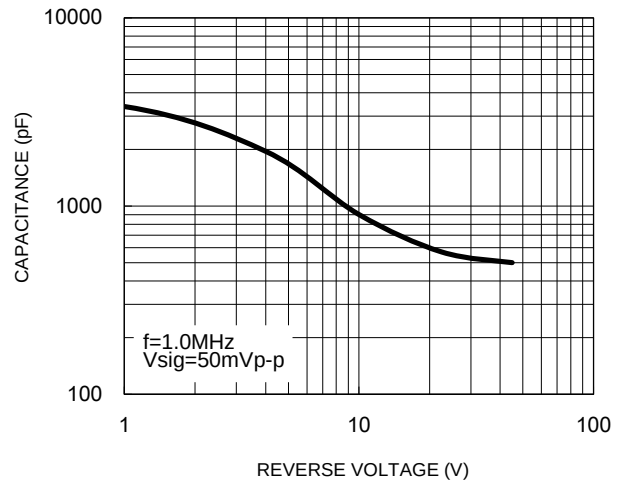


Fig.3 Typical Reverse Characteristics

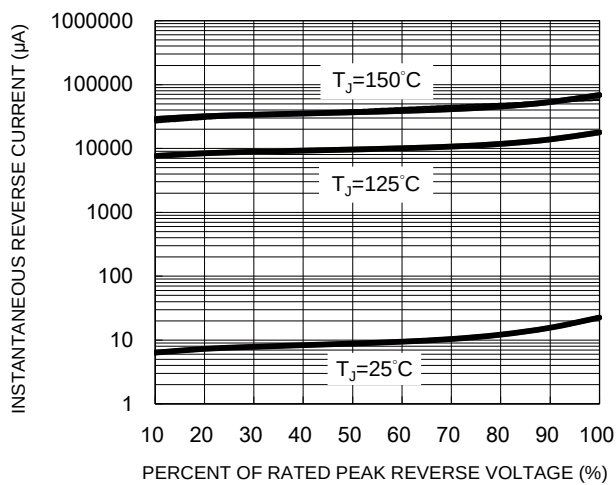


Fig.4 Typical Forward Characteristics

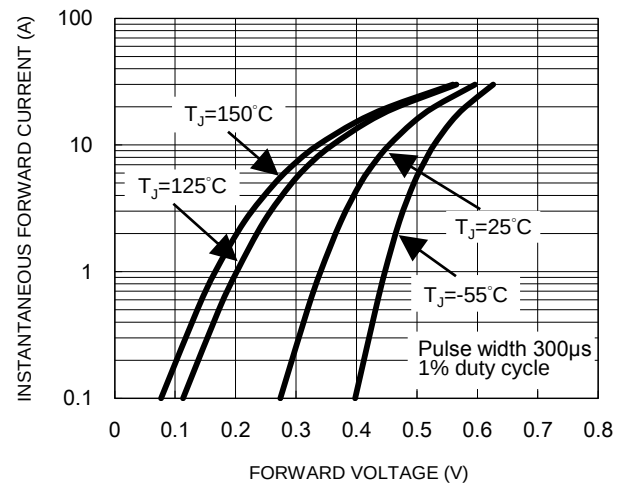
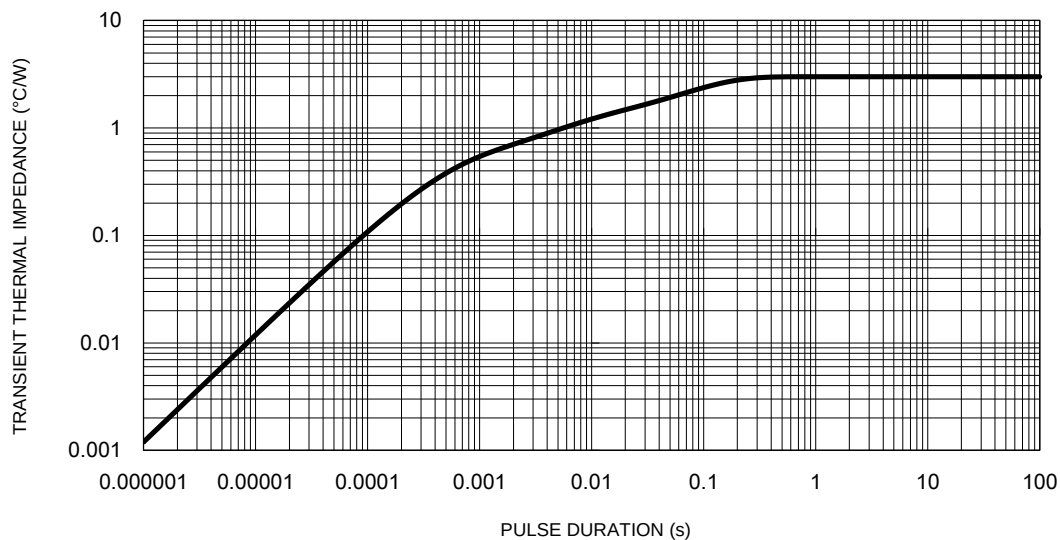
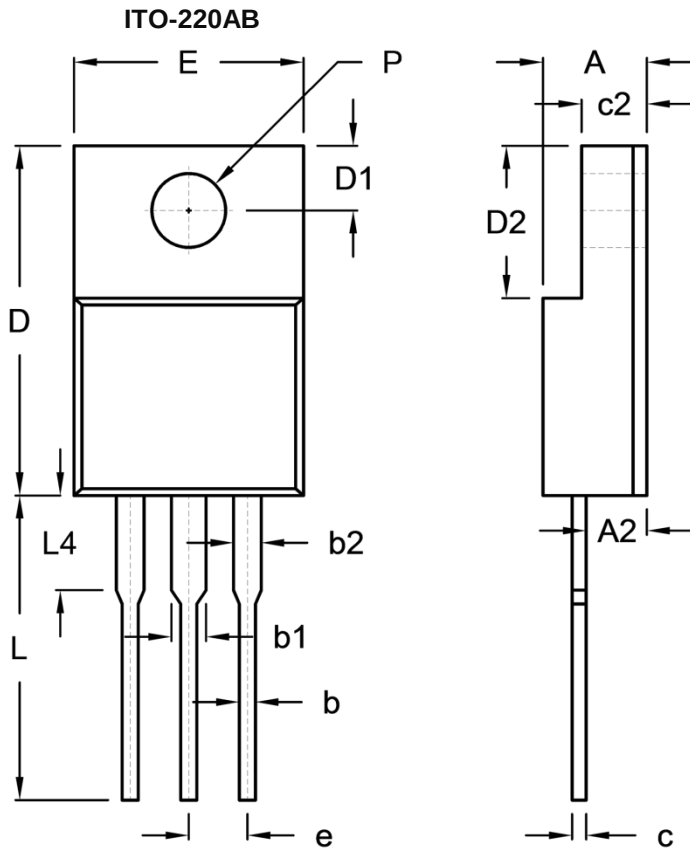


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	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
c	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
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

MARKING DIAGRAM



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

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