

10A, 45V Trench Schottky Rectifier

FEATURES

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

APPLICATIONS

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

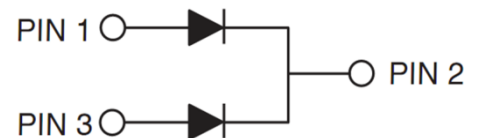
MECHANICAL DATA

- 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: 1.72g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	2 x 5	A
V_{RRM}	45	V
I_{FSM}	110	A
T_{JMAX}	150	°C
Package	ITO-220AB	
Configuration	Dual dies	



ITO-220AB



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	TSF10H45C	UNIT
Marking code on the device		TSF10H45C	
Repetitive peak reverse voltage	V_{RRM}	45	V
Reverse voltage, total rms value	$V_{R(RMS)}$	31	V
Forward current	per device	I_F	10 A
	per diode		5 A
Surge peak forward current single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	I_{FSM}	110 A
	$t = 1.0\text{ms}$		380 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	$R_{\theta JL}$	4.1	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	15.6	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	4.2	°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⁾	$I_F = 2.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.42	-	V
	$I_F = 5.0\text{A}, T_J = 25^\circ\text{C}$		0.47	0.58	V
	$I_F = 2.5\text{A}, T_J = 125^\circ\text{C}$		0.31	-	V
	$I_F = 5.0\text{A}, T_J = 125^\circ\text{C}$		0.39	0.46	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	20	μA
	$T_J = 125^\circ\text{C}$		-	15	mA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	C_J	610	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
TSF10H45C	ITO-220AB	50 / Tube

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

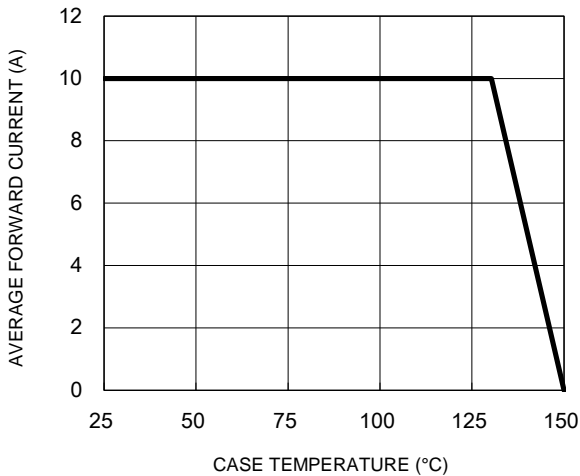


Fig.2 Typical Junction Capacitance

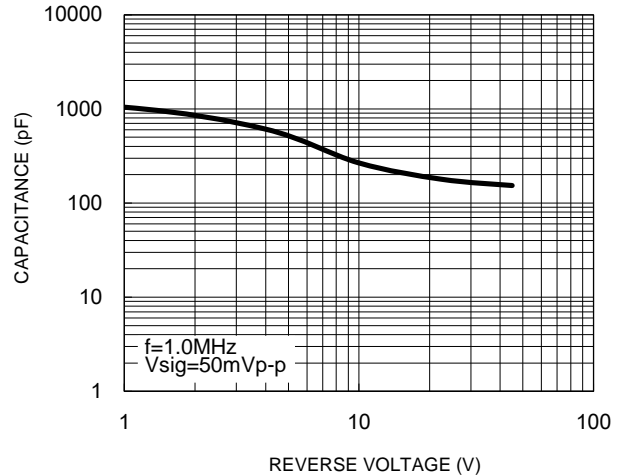


Fig.3 Typical Reverse Characteristics

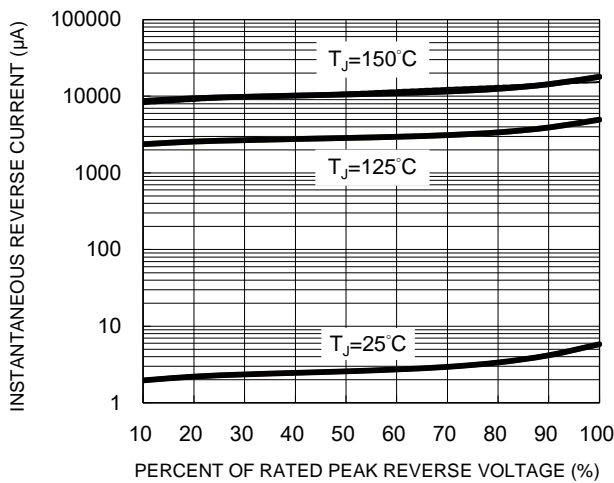


Fig.4 Typical Forward Characteristics

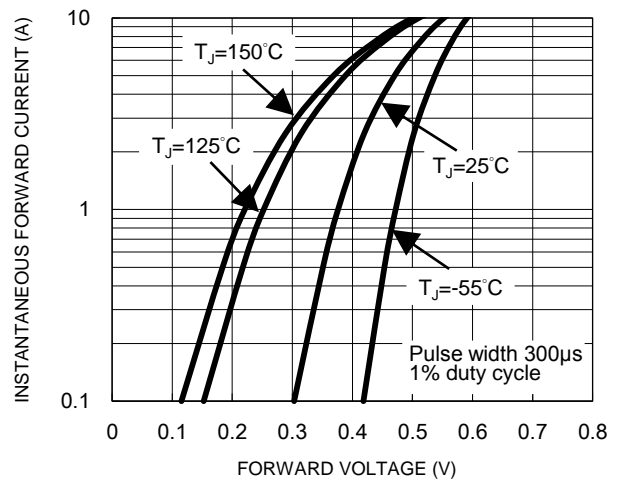
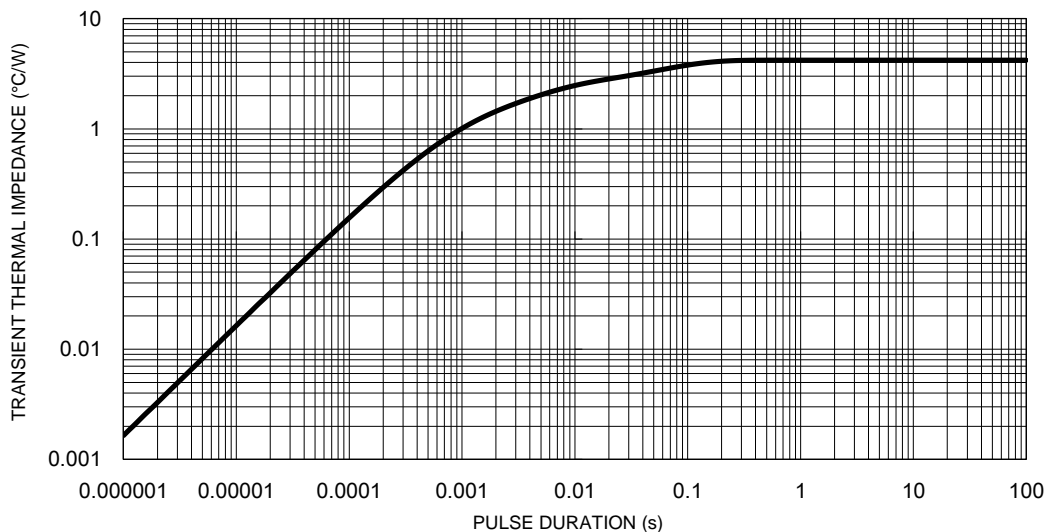
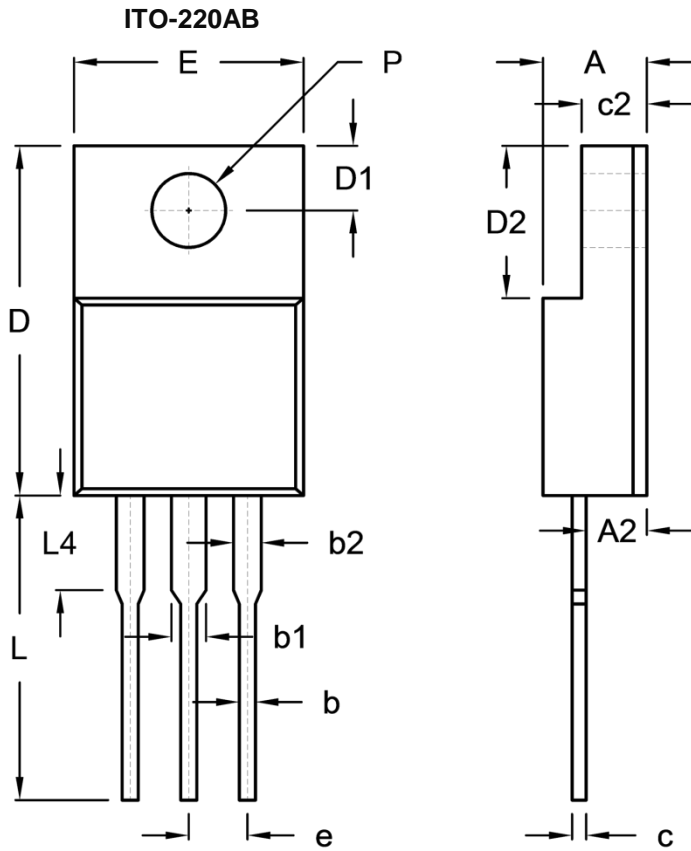


Fig.5 Typical Transient Thermal Impedance



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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.