30A, 45V Dual Common Cathode 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

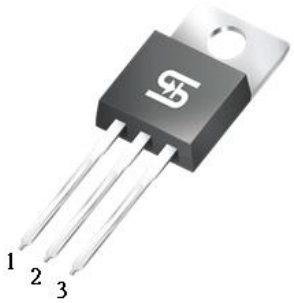
- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

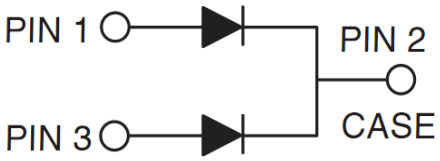
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Mounting torque: 0.56 N·m maximum
- Polarity: As marked
- Weight: 1.93g (approximately)

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	TO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)				
PARAMETER		**SYMBOL**	**TST30H45C**	**UNIT**
Marking code on the device			TST30H45C	
Repetitive peak reverse voltage		V_{RRM}	45	V
Reverse voltage, total rms value		$V_{R(RMS)}$	32	V
Forward current	per device	I_F	30	A
	per diode		15	
Surge peak forward current single half sine-wave superimposed on rated load per diode	t = 8.3ms	I_{FSM}	250	A
	t = 1.0ms		810	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	$R_{\Theta JL}$	2.1	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	10.7	°C/W
Junction-to-case thermal resistance per diode	$R_{\Theta JC}$	2.0	°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	TYP	MAX	UNIT
Forward voltage per diode[1]	I_F = 7.5A, T_J = 25°C	V_F	0.43	-	V
	I_F = 15A, T_J = 25°C		0.49	0.61	V
	I_F = 7.5A, T_J = 125°C		0.33	-	V
	I_F = 15A, T_J = 125°C		0.42	0.48	V
Reverse current @ rated V_R per diode[2]	T_J = 25°C	I_R	-	94	μA
	T_J = 125°C		-	84	mA
Junction capacitance per diode	1MHz, V_R = 4.0V	C_J	2031	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
TST30H45C	TO-220AB	50 / Tube

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

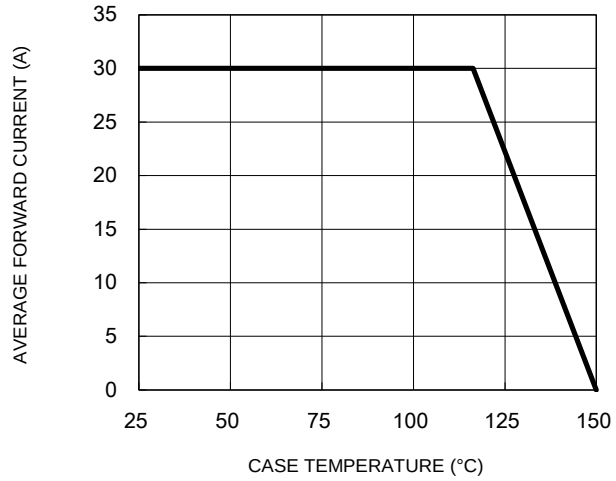


Fig.2 Typical Junction Capacitance

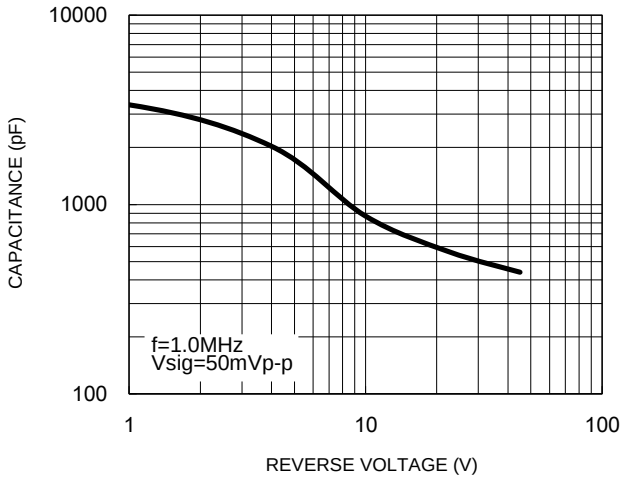


Fig.3 Typical Reverse Characteristics

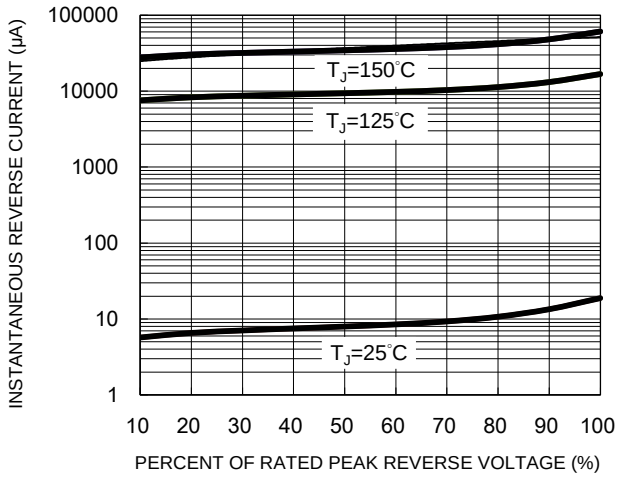


Fig.4 Typical Forward Characteristics

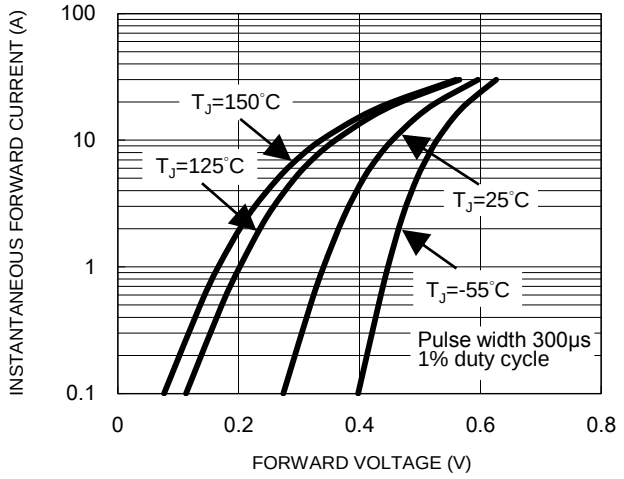
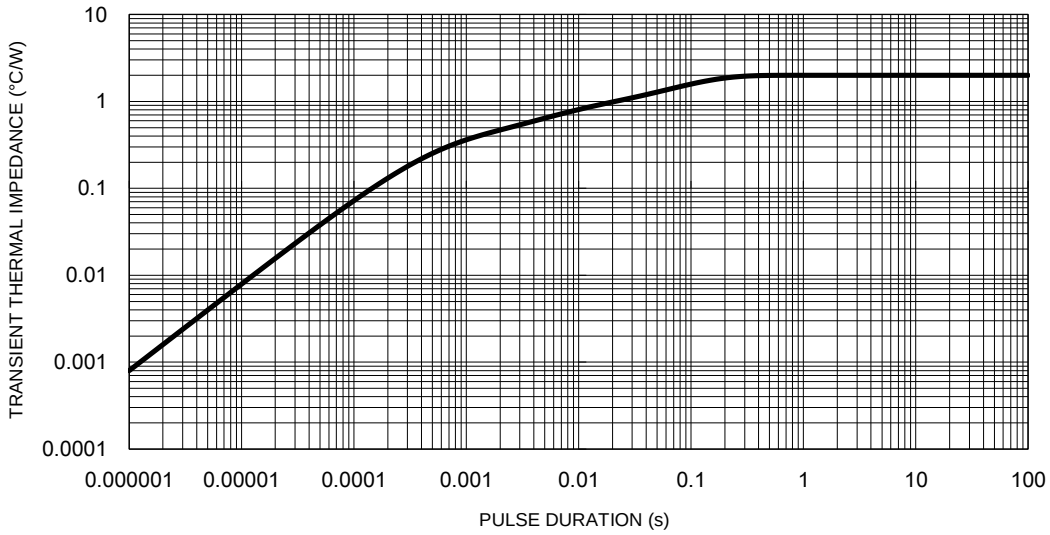
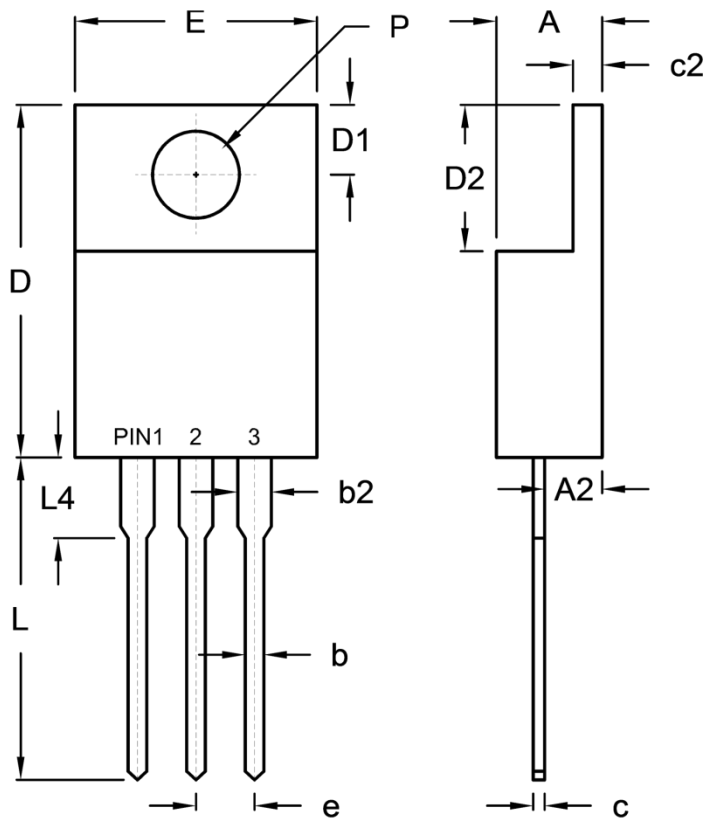


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

TO-220AB



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	4.76	0.174	0.187
A2	2.20	2.80	0.087	0.110
b	0.68	0.94	0.027	0.037
b2	1.14	1.77	0.045	0.070
c	0.35	0.64	0.014	0.025
c2	1.14	1.40	0.045	0.055
D	14.60	16.00	0.575	0.630
D1	2.62	3.44	0.103	0.135
D2	5.84	6.86	0.230	0.270
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
L	13.19	14.79	0.519	0.582
L4	2.80	4.20	0.110	0.165
P	3.54	4.00	0.139	0.157

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.