

## 10A, 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
- Compliant RoHS
- Halogen-free according to IEC 61249-2-21

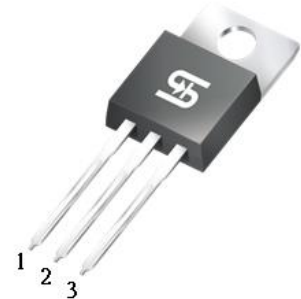
### APPLICATIONS

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

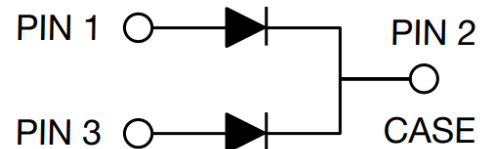
### MECHANICAL DATA

- Case: 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: 1.92g (approximately)

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



TO-220AB



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	TST10H45C	UNIT
Marking code on the device			TST10H45C	
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
	$t = 1.0\text{ms}$		300	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	$R_{\theta JL}$	3.8	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	12.3	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	3.6	°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 <sup>(1)</sup>	$I_F = 2.5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	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
	$I_F = 5.0\text{A}, T_J = 125^\circ\text{C}$		0.38	0.46	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	20	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	15	mA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	632	-	pF

**Notes:**

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

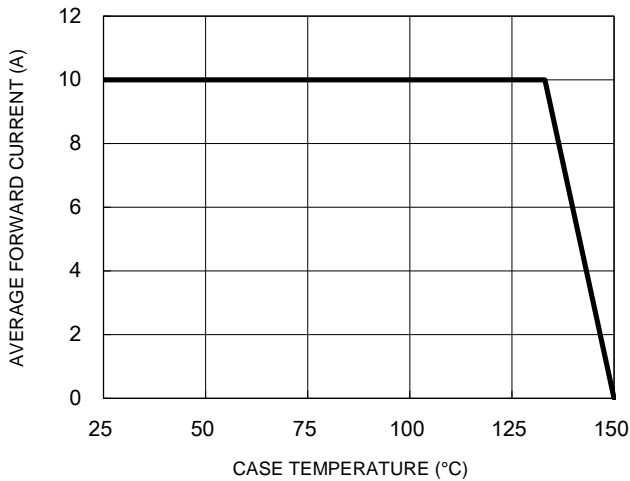
**ORDERING INFORMATION**

ORDERING CODE	PACKAGE	PACKING
TST10H45C	TO-220AB	50 / Tube

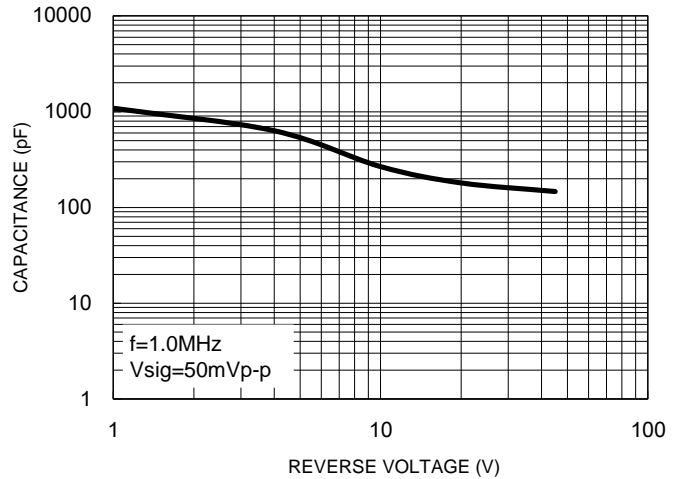
## CHARACTERISTICS CURVES

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

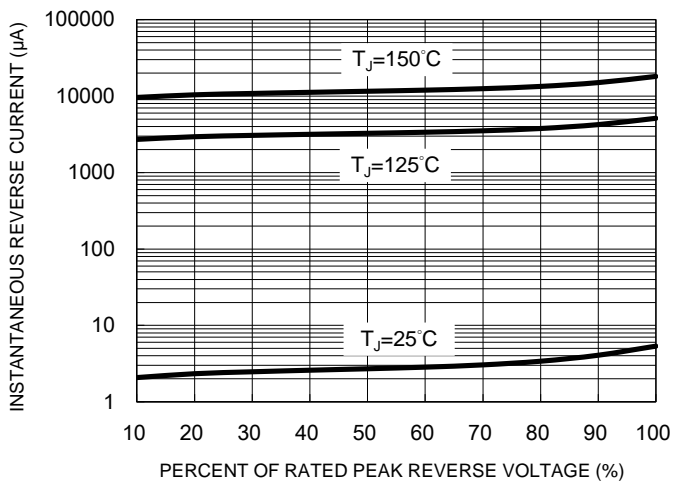
**Fig.1 Forward Current Derating Curve**



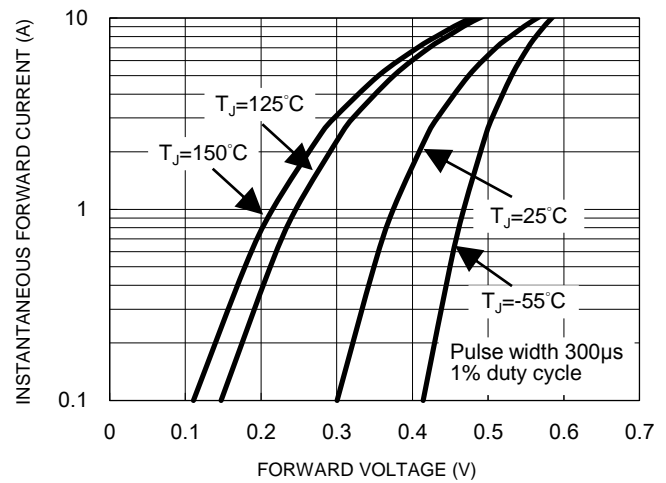
**Fig.2 Typical Junction Capacitance**



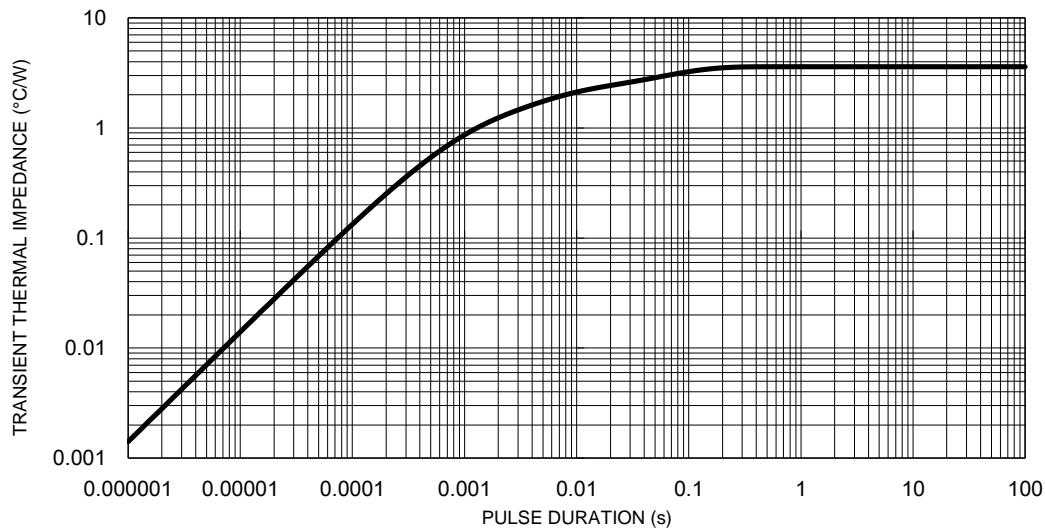
**Fig.3 Typical Reverse Characteristics**



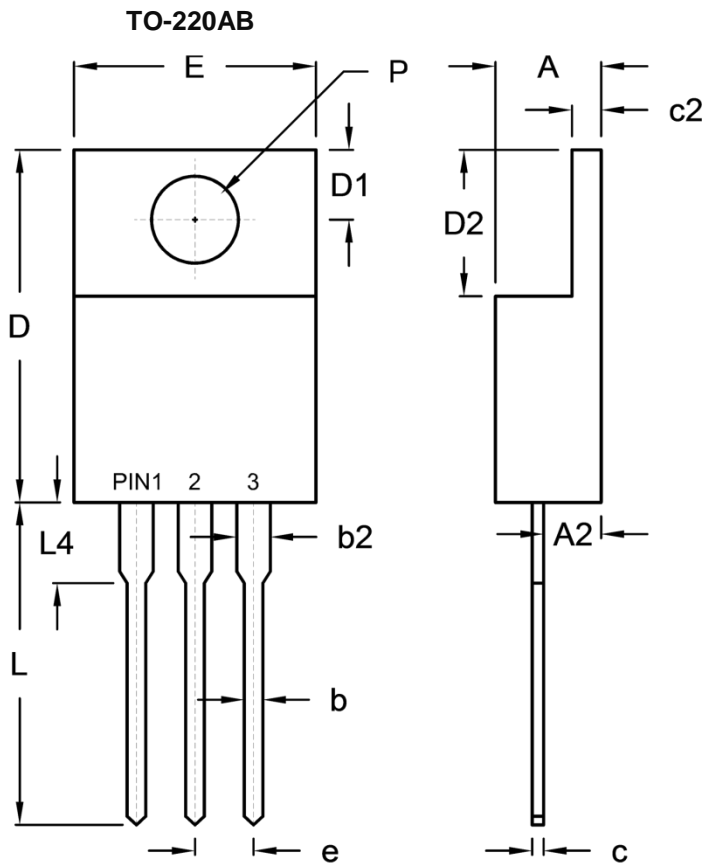
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Transient Thermal Impedance**



## PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	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

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