

10A, 45V Dual Common Cathode Trench Schottky Rectifier

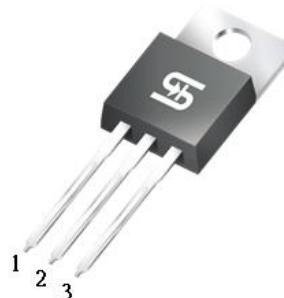
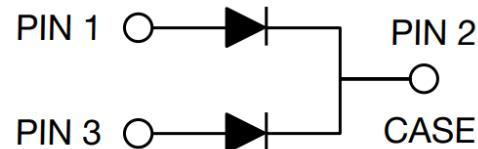
FEATURES

- 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

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	2 x 5	A
V_{RRM}	45	V
I_{FSM}	110	A
$T_J \text{ MAX}$	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	$V_{R(\text{RMS})}$	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 ⁽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
	$I_F = 5.0\text{A}, T_J = 125^\circ\text{C}$		0.38	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	632	-	pF

Notes:

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

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

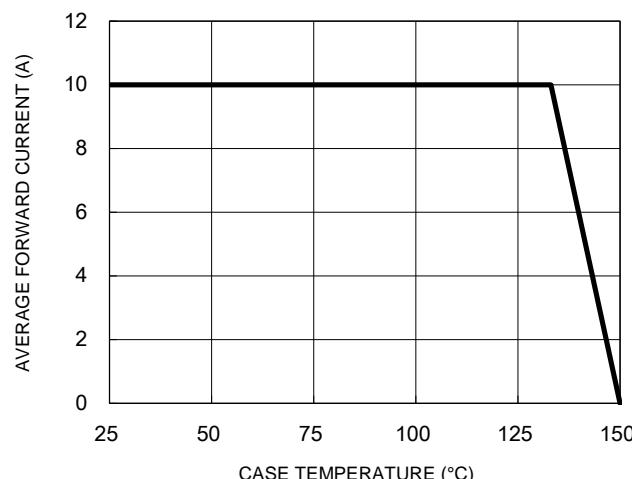


Fig.2 Typical Junction Capacitance

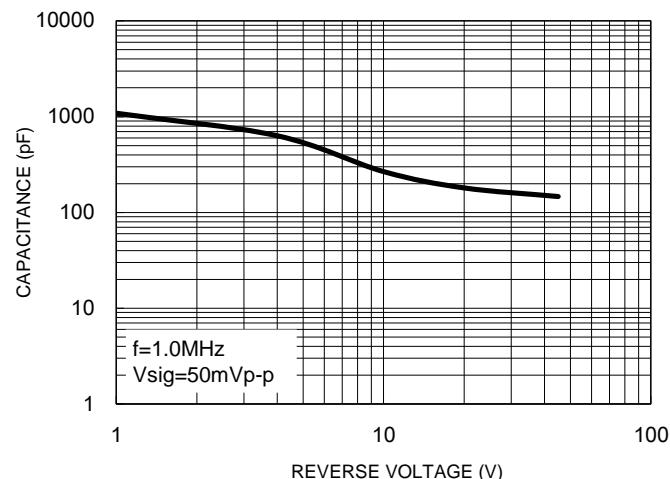


Fig.3 Typical Reverse Characteristics

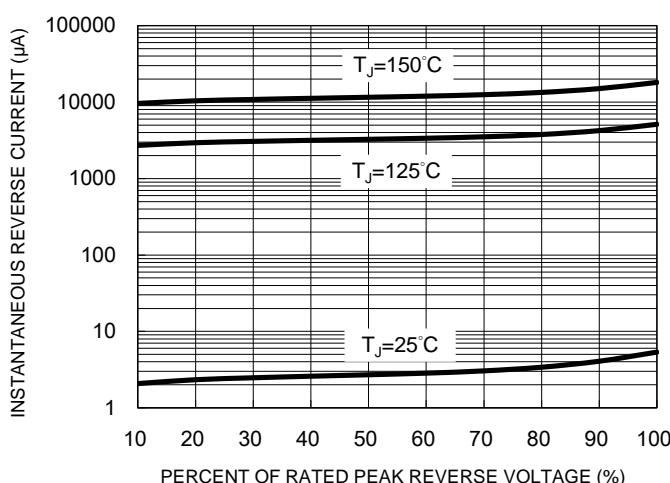


Fig.4 Typical Forward Characteristics

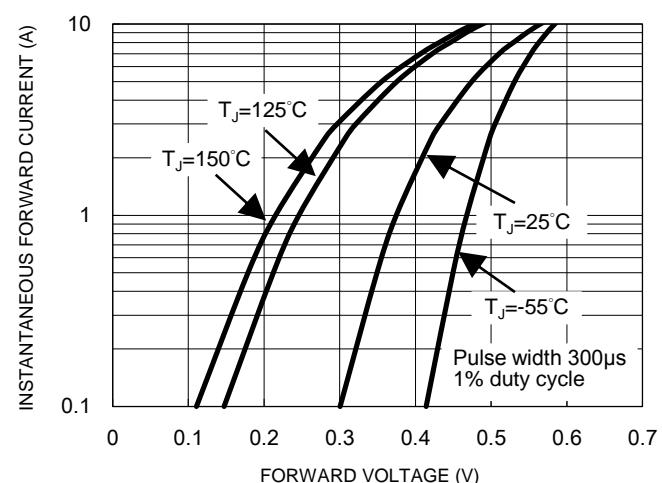
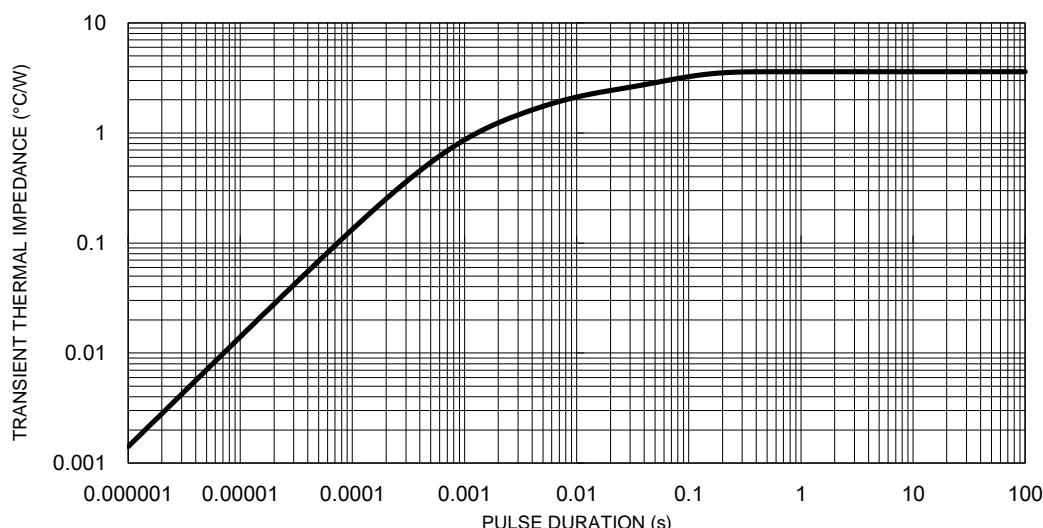
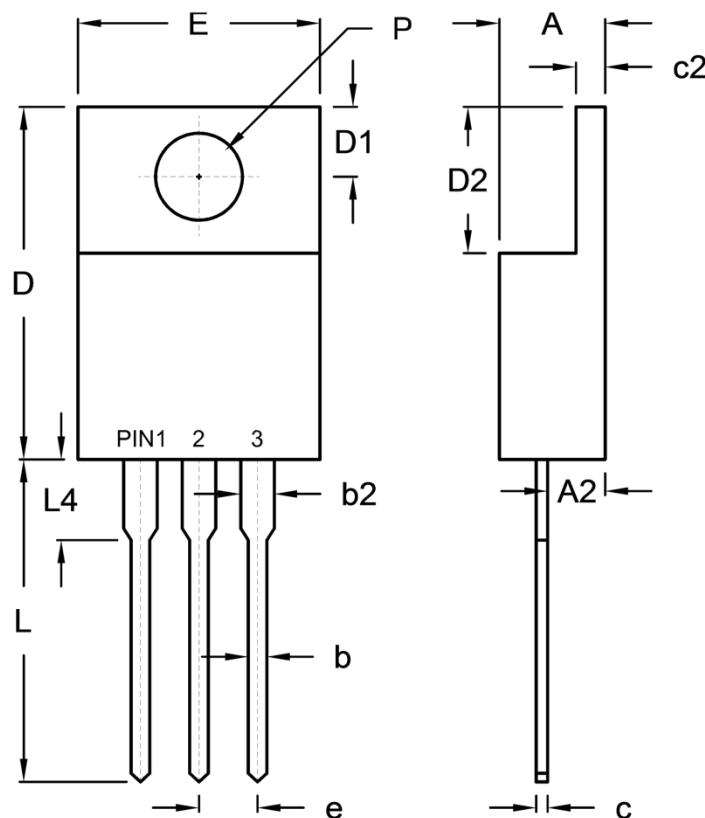


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS
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

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