

20A, 45V Low V_F Trench Schottky Rectifier

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Low power loss/ High efficiency
- High forward surge capability
- RoHS Compliant
- Halogen-free

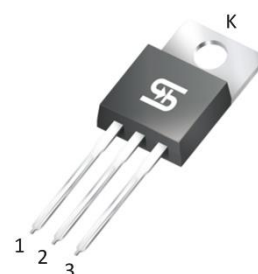
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

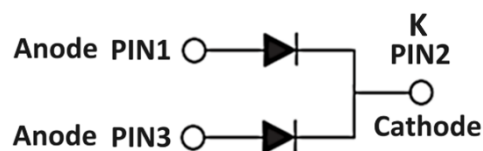
MECHANICAL DATA

- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.88g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	20	A
V_{RRM}	45	V
I_{FSM}	120	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	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	45	V
Reverse voltage, total rms value	$V_{R(RMS)}$	31	V
Forward current	I_F	20	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	120	A
Critical rate of rise of off-state voltage	dv/dt	10,000	V/ μs
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\theta JC}$	2	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.53	V
	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$		-	0.60	V
	$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.39	0.44	V
	$I_F = 20\text{A}, T_J = 125^\circ\text{C}$		-	0.55	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	300	μA
	$T_J = 125^\circ\text{C}$		-	60	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
TST20U45C	TO-220AB	50 / Tube

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

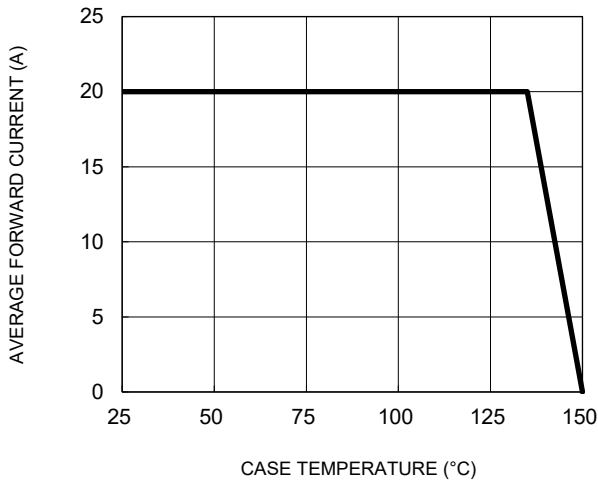


Fig.2 Typical Junction Capacitance

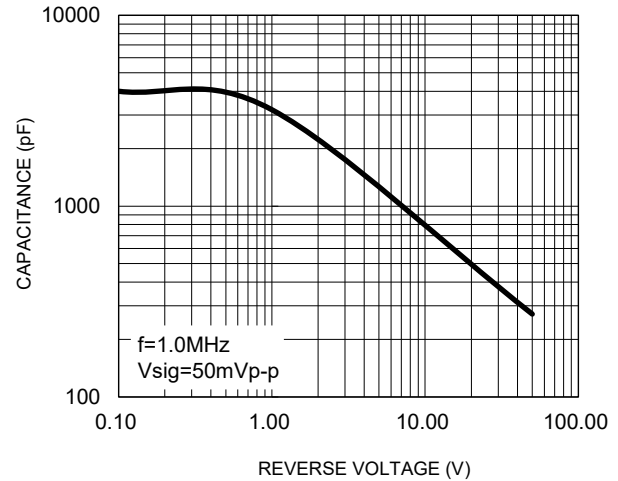


Fig.3 Typical Reverse Characteristics

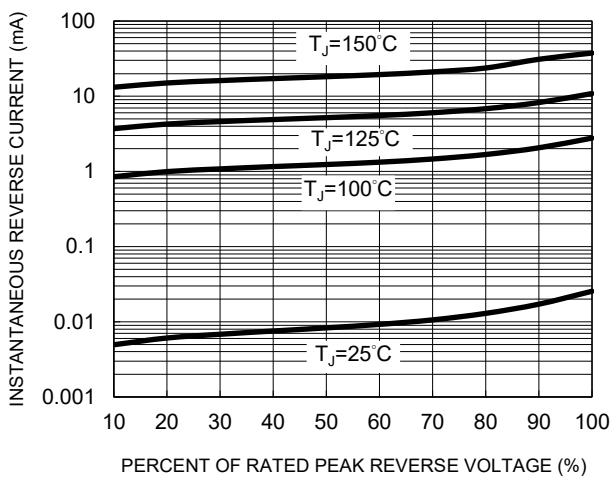
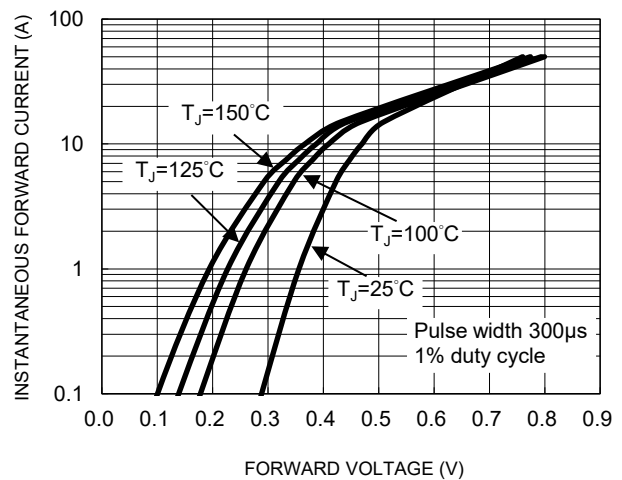
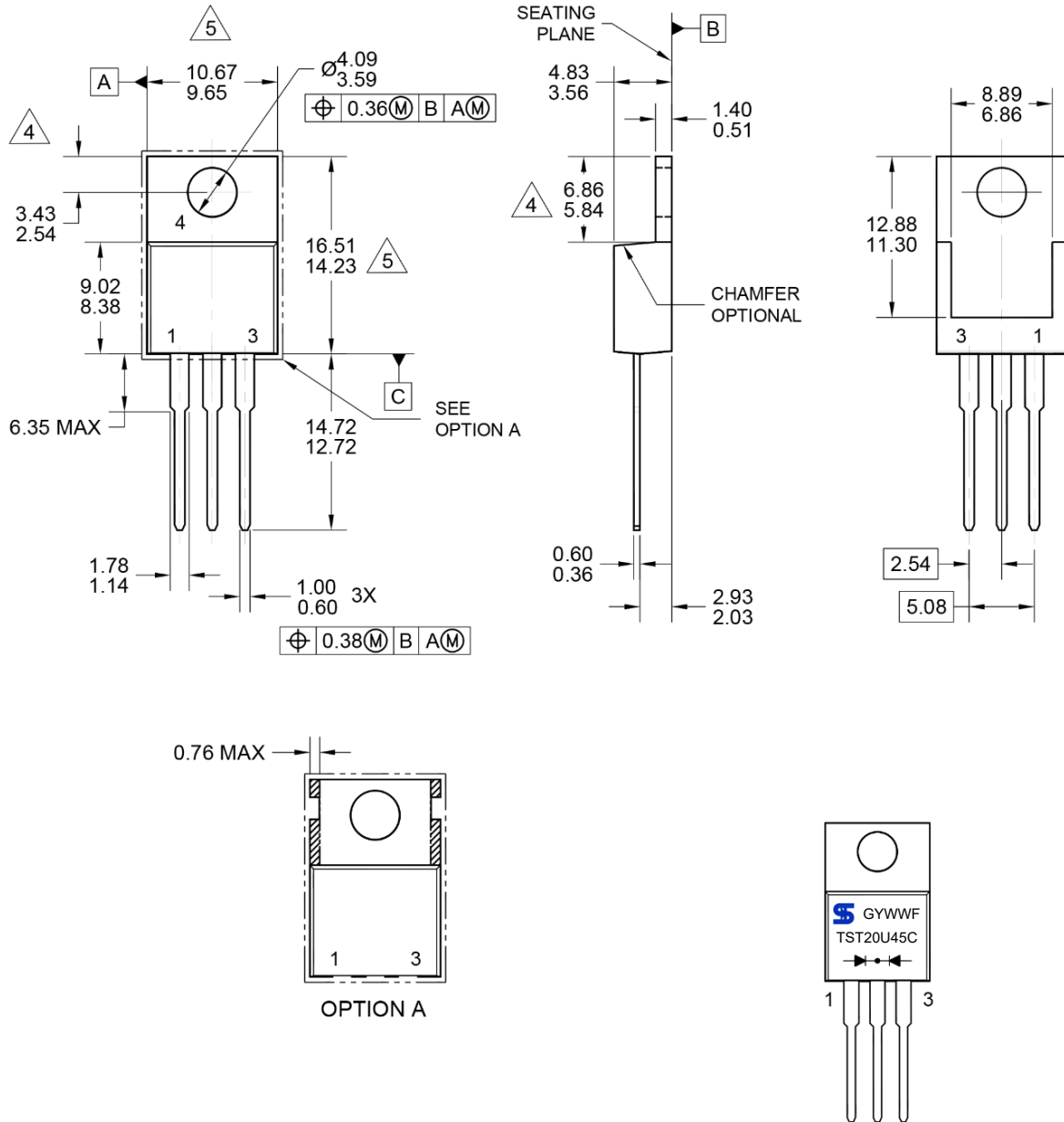


Fig.4 Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

TO-220AB



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC TO-220, VARIATION AB, ISSUE K.

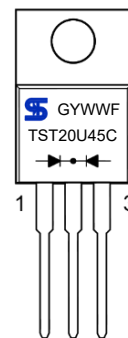
△ 4 THE DEFINED ZONE WHERE STAMPING AND SINGULATION IRREGULARITIES ARE ALLOWED. SLOT AND NOTCH MAY APPEAR IN THIS ZONE.

△ 5 THIS DO NOT INCLUDE MOLD FLASH. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.

6. DWG NO REF: HQ2SD07-TO220AB-011 REV A.

MARKING DIAGRAM

G = Green compound
YWW = Date code
F = Factory code



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