

## 20A, 120V Trench Schottky Rectifier

### FEATURES

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

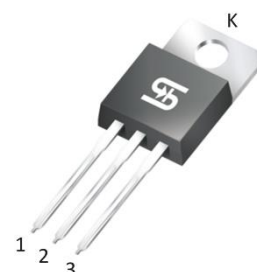
### APPLICATIONS

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

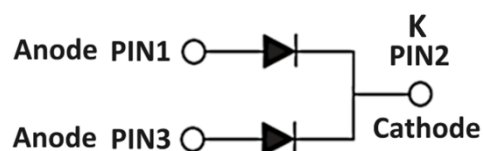
### MECHANICAL DATA

- 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: 1.97g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	20	A
$V_{RRM}$	120	V
$I_{FSM}$	210	A
$T_J \text{ MAX}$	150	°C
Package	TO-220AB	
Configuration	Common cathode	



TO-220AB



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	$V_{RRM}$	120	V
Reverse voltage, total rms value	$V_{R(RMS)}$	84	V
Forward current	$I_F$	20	A
		10	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	210	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 <sup>(1)</sup>	$R_{\theta JL}$	1.2	°C/W
Junction-to-ambient thermal resistance per diode <sup>(1)</sup>	$R_{\theta JA}$	5.2	°C/W
Junction-to-case thermal resistance per diode <sup>(2)</sup>	$R_{\theta JC}$	0.9	°C/W

**Thermal Performance Notes:**

- Units mounted on 4" x 6" x 0.25" Al-plate
- Mounted on infinite heatsink

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.74	-	V
	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$		0.85	0.90	V
	$I_F = 5\text{A}, T_J = 125^\circ\text{C}$		0.59	-	V
	$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.67	0.71	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	50	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	10	mA

**Notes:**

- Pulse test with  $PW = 0.3\text{ms}$
- Pulse test with  $PW = 30\text{ms}$

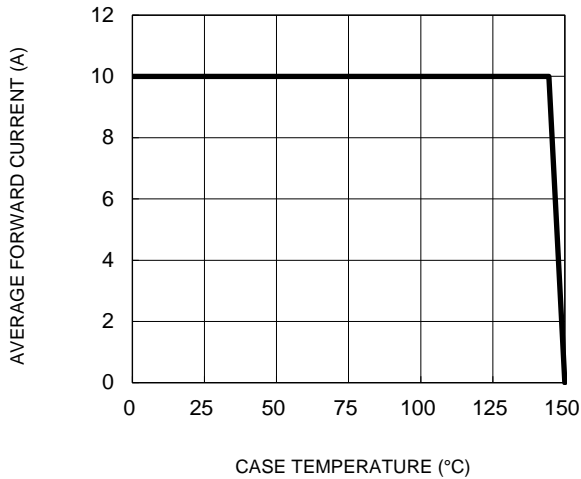
**ORDERING INFORMATION**

ORDERING CODE	PACKAGE	PACKING
TST20122C	TO-220AB	50 / Tube

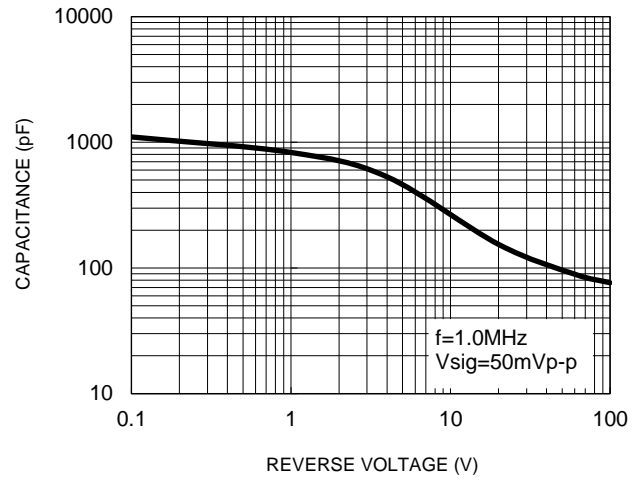
## CHARACTERISTICS CURVES

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

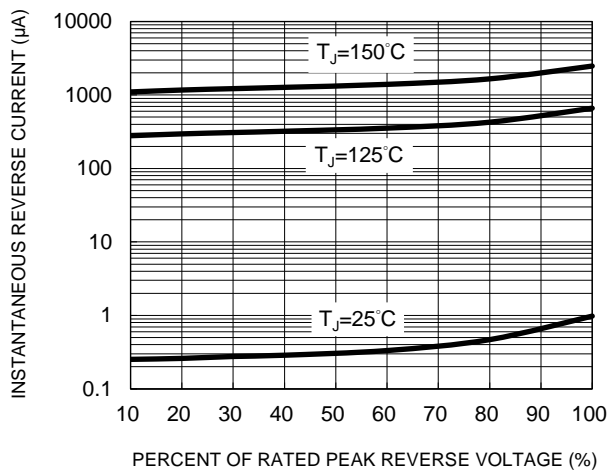
**Fig.1 Forward Current Derating Curve**



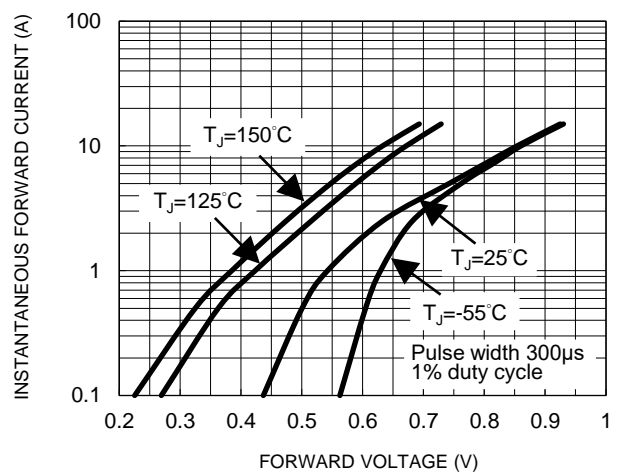
**Fig.2 Typical Junction Capacitance**



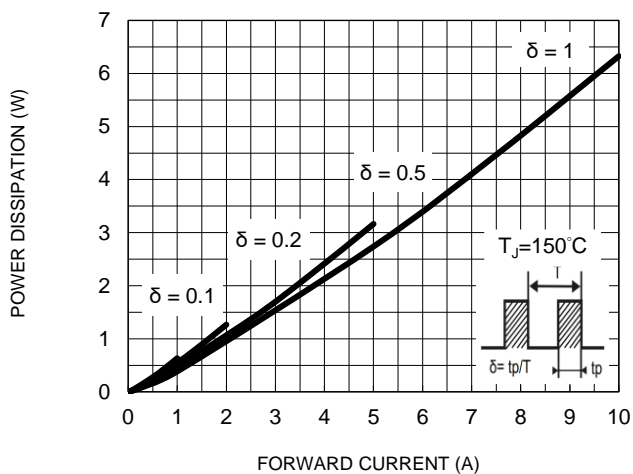
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



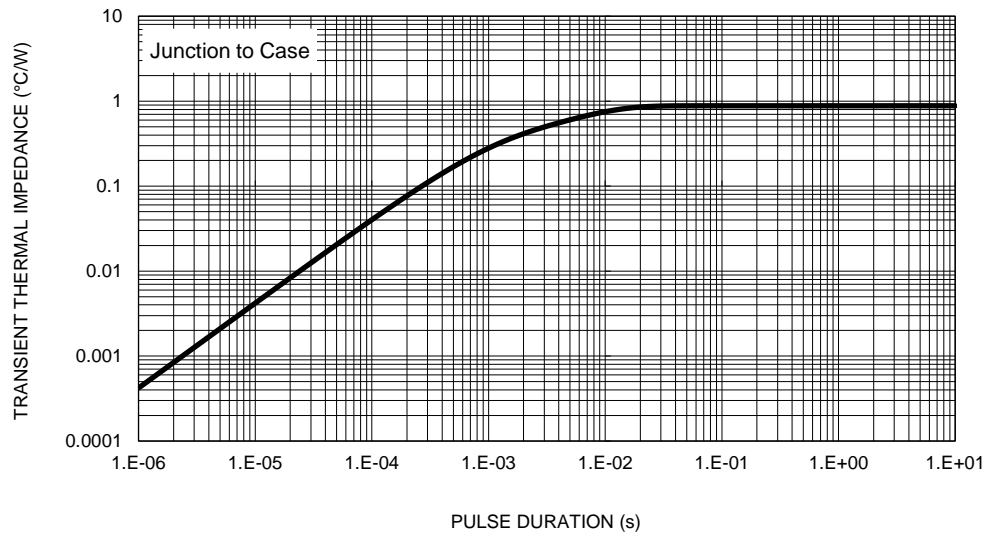
**Fig.5 Typical Forward Power Dissipation vs. Forward Current**



## CHARACTERISTICS CURVES

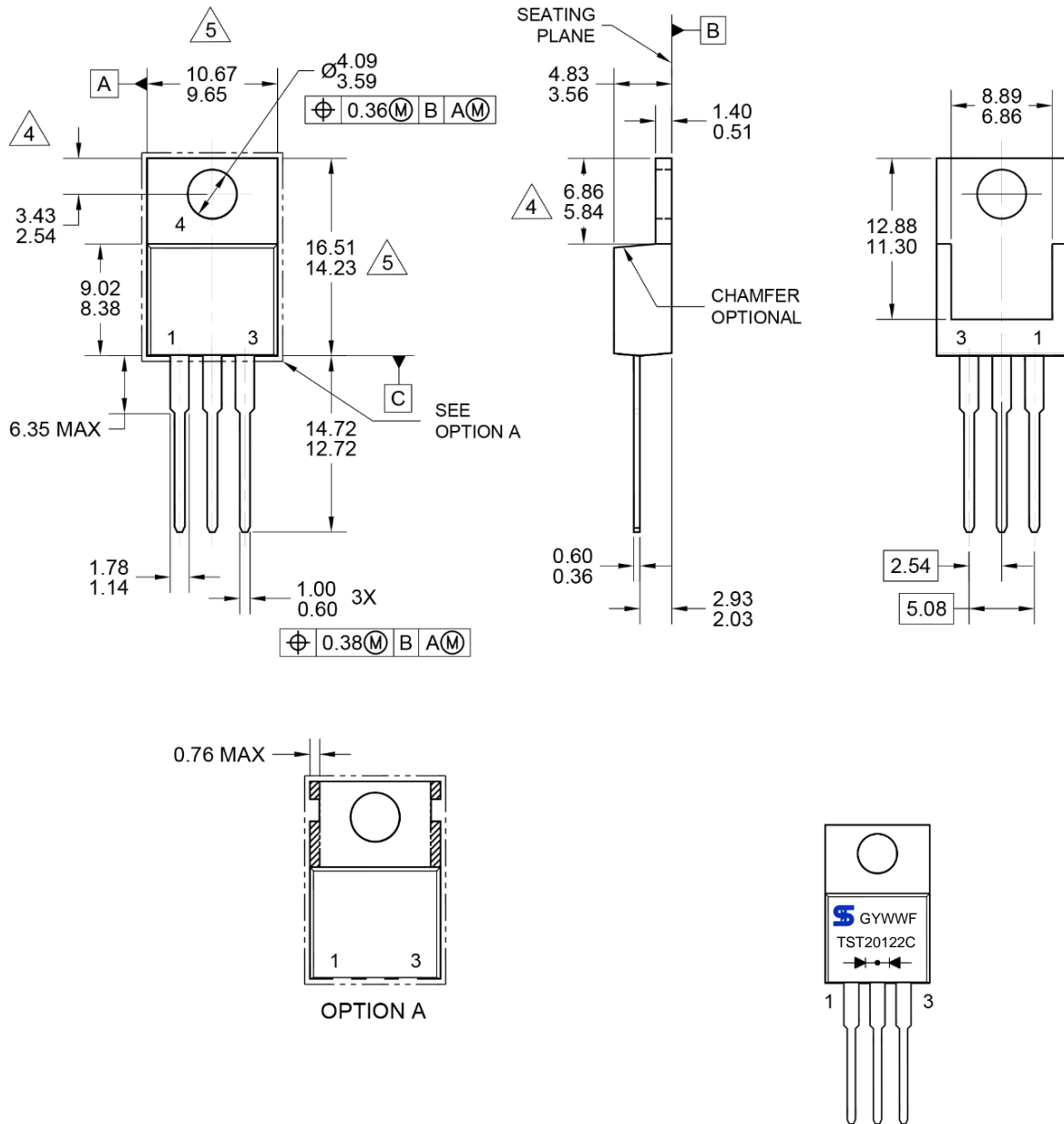
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal 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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