40A, 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

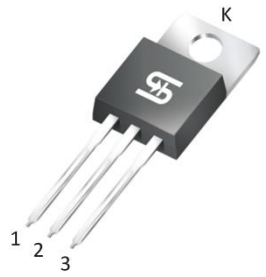
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

MECHANICAL DATA

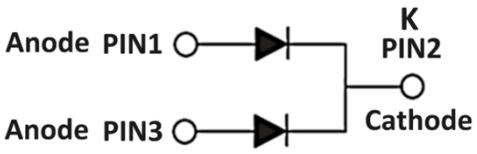
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.98g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	40	A
V_{RRM}	120	V
I_{FSM}	350	A
$T_{J\ MAX}$	150	°C
Package	TO-220AB	
Configuration	Common cathode	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	per device	I_F	40	A
	per diode		20	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load		I_{FSM}	350	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(1)	$R_{\Theta JL}$	0.9	°C/W
Junction-to-ambient thermal resistance per diode(1)	$R_{\Theta JA}$	5.0	°C/W
Junction-to-case thermal resistance per diode(2)	$R_{\Theta JC}$	0.4	°C/W

Thermal Performance Notes:

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

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode(1)	I_F = 10A, T_J = 25°C	V_F	0.73	-	V
	I_F = 20A, T_J = 25°C		0.85	0.91	V
	I_F = 10A, T_J = 125°C		0.58	-	V
	I_F = 20A, T_J = 125°C		0.68	0.73	V
Reverse current @ rated V_R per diode(2)	T_J = 25°C	I_R	-	50	μA
	T_J = 125°C		-	10	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
TST40122C	TO-220AB	50 / Tube

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

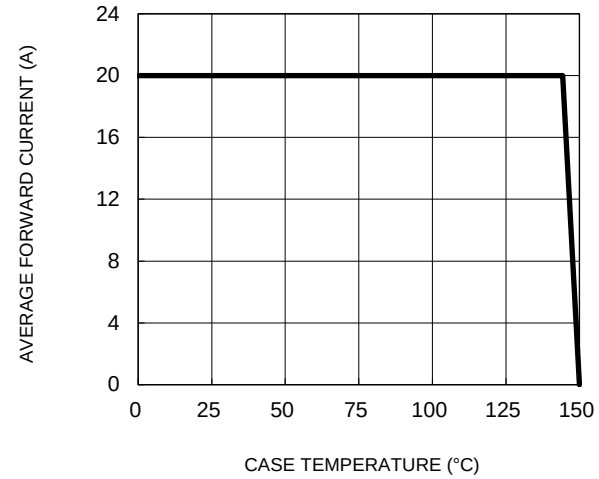


Fig.2 Typical Junction Capacitance

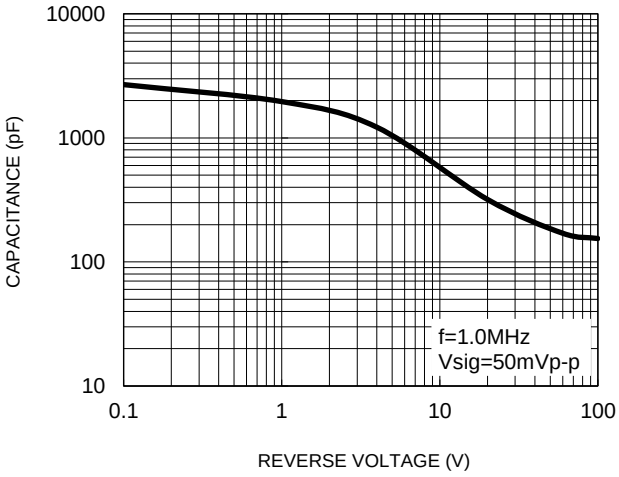


Fig.3 Typical Reverse Characteristics

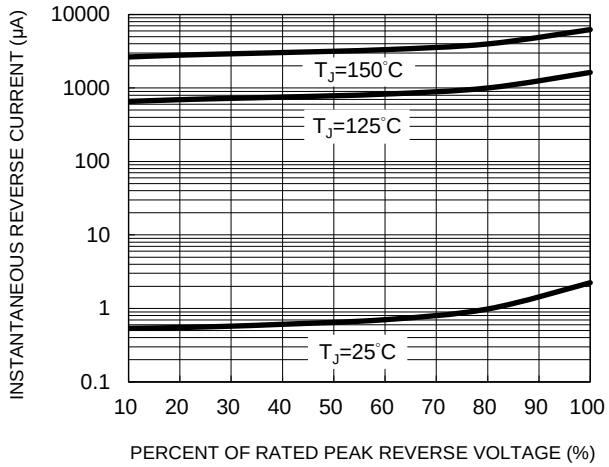


Fig.4 Typical Forward Characteristics

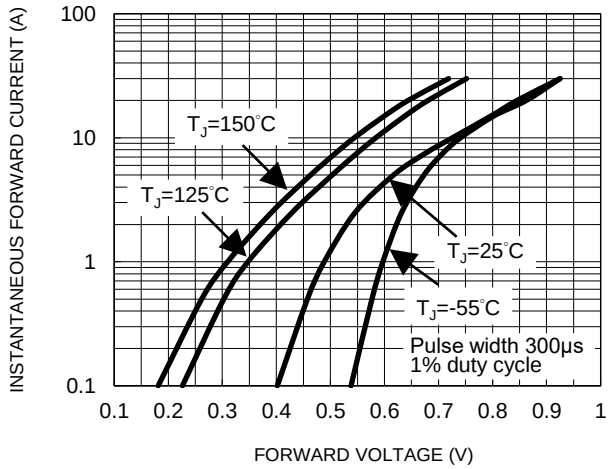
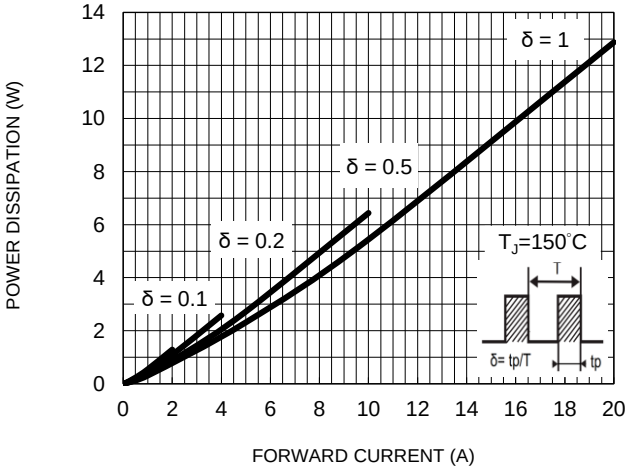


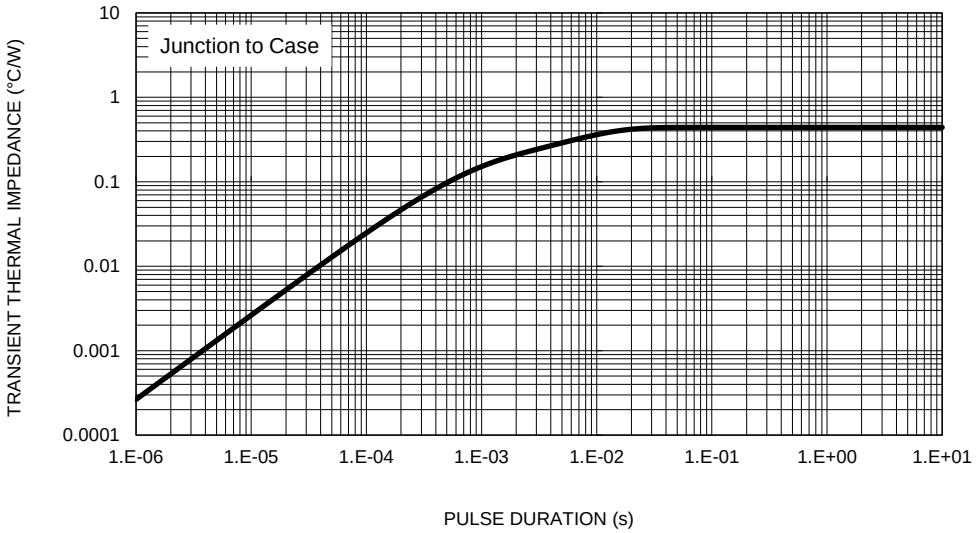
Fig.5 Typical Forward Power Dissipation vs. Forward Current



CHARACTERISTICS CURVES

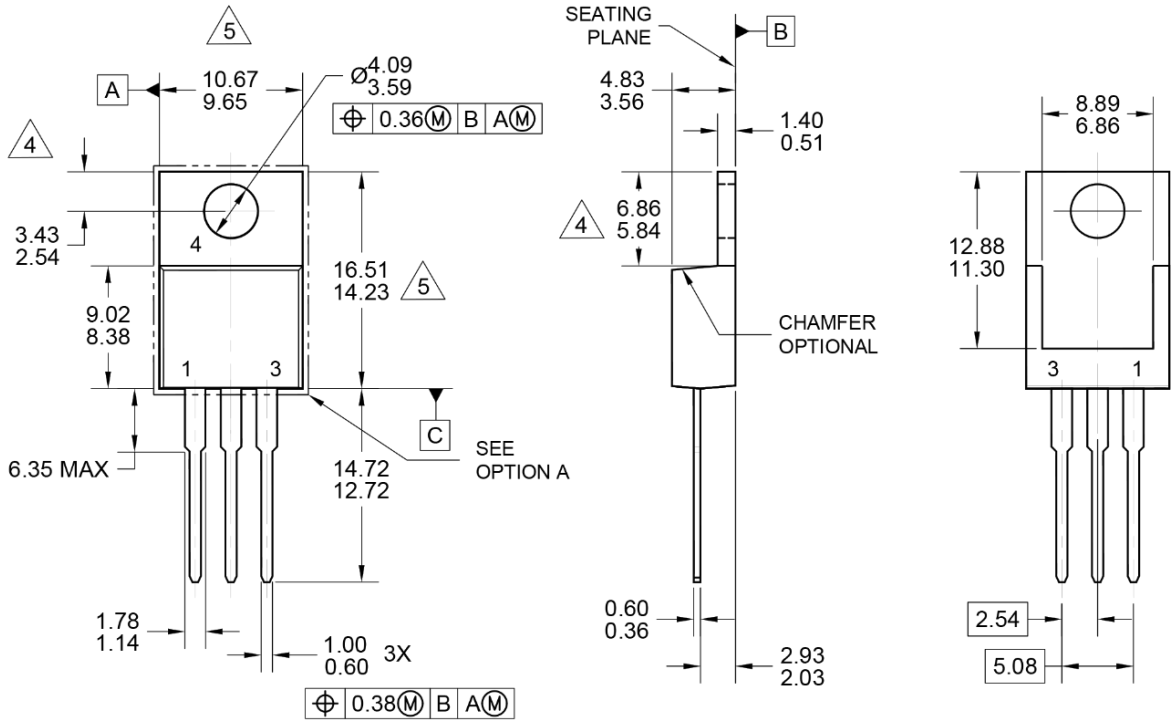
(T_A = 25°C unless otherwise noted)

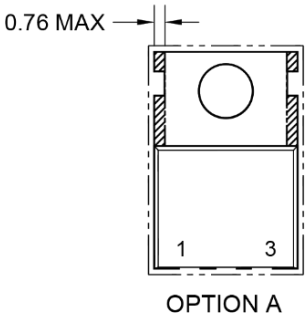
Fig.6 Typical Transient Thermal Characteristics

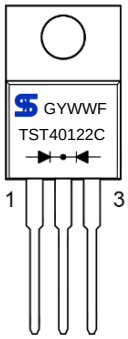


PACKAGE OUTLINE DIMENSIONS

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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