20A, 100V - 200V 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 according to IEC 61249-2-21

APPLICATIONS

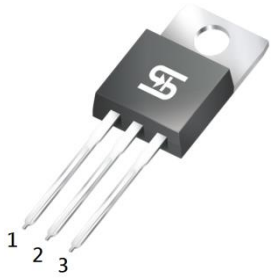
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

MECHANICAL DATA

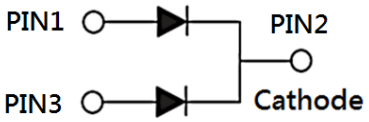
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 1.88g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	20	A
V_{RRM}	100 - 200	V
I_{FSM}	150	A
$T_{J\ MAX}$	150	°C
Package	TO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)						
PARAMETER	**SYMBOL**	**TST20H 100CW**	**TST20H 120CW**	**TST20H 150CW**	**TST20H 200CW**	**UNIT**
Marking code on the device		TST20H 100CW	TST20H 120CW	TST20H 150CW	TST20H 200CW	
Repetitive peak reverse voltage	V_{RRM}	100	120	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	70	84	105	140	V
Forward current	I_F	20				A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	150				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	$R_{\Theta JC}$	2.8	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	TST20H100CW	I_F = 5A, T_J = 25°C	V_F	0.57	-	V
	TST20H120CW			0.62	-	V
	TST20H150CW			0.72	-	V
	TST20H200CW			0.77	-	V
	TST20H100CW	I_F = 10A, T_J = 25°C		0.67	0.79	V
	TST20H120CW			0.78	0.89	V
	TST20H150CW			0.81	0.90	V
	TST20H200CW			0.83	0.93	V
	TST20H100CW	I_F = 5A, T_J = 125°C		0.50	-	V
	TST20H120CW			0.53	-	V
	TST20H150CW			0.58	-	V
	TST20H200CW			0.62	-	V
	TST20H100CW	I_F = 10A, T_J = 125°C		0.59	0.68	V
	TST20H120CW			0.63	0.72	V
	TST20H150CW			0.66	0.75	V
	TST20H200CW			0.68	0.78	V
Reverse current @ rated V_R per diode[2]	TST20H100CW TST20H120CW	T_J = 25°C	I_R	-	200	μA
	TST20H150CW TST20H200CW			-	100	μA
	TST20H100CW	T_J = 125°C		-	25	mA
	TST20H120CW			-	30	mA
	TST20H150CW TST20H200CW			-	15	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
TST20HxCW	TO-220AB	50 / Tube

Notes:

1. “x” defines voltage from 100V(TST20H100CW) to 200V(TST20H200CW)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

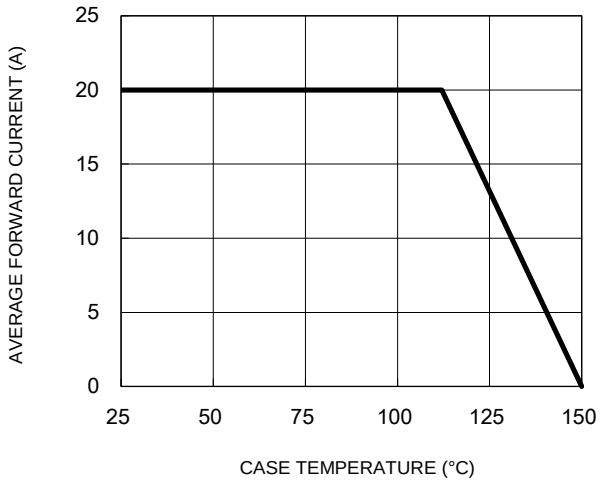


Fig.2 Typical Junction Capacitance

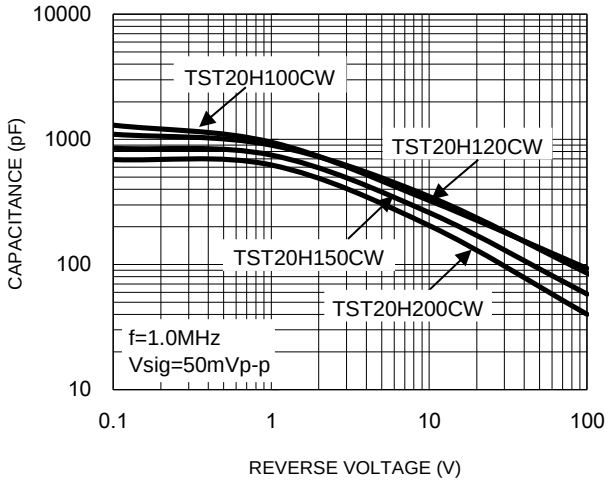


Fig.3 Typical Reverse Characteristics

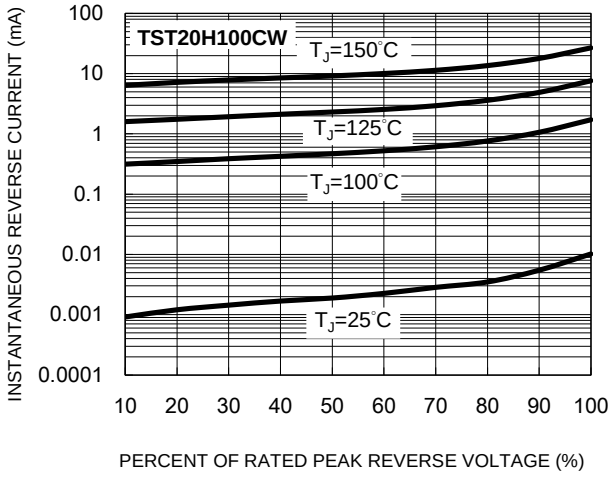


Fig.4 Typical Forward Characteristics

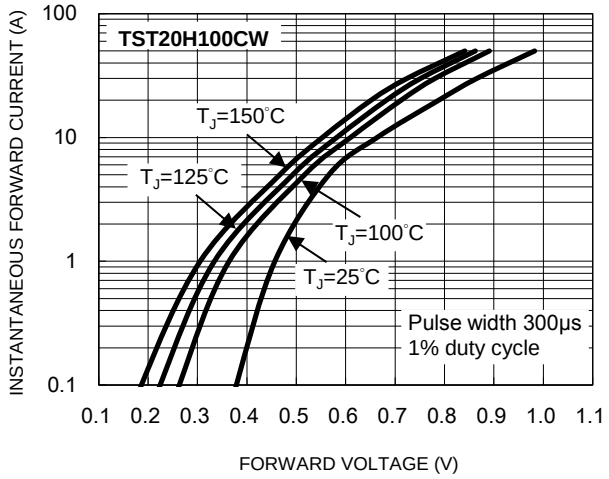


Fig.5 Typical Reverse Characteristics

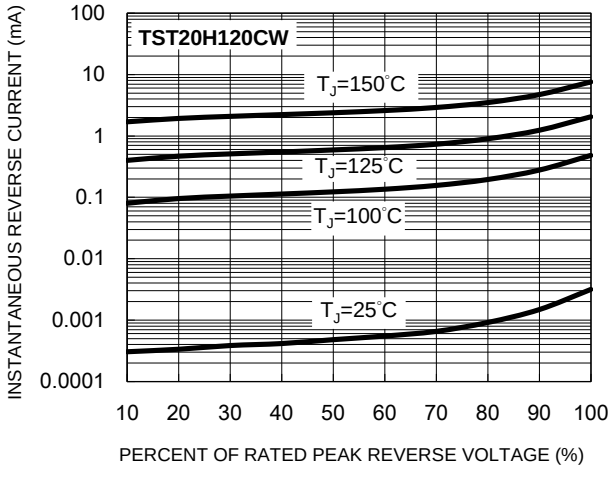
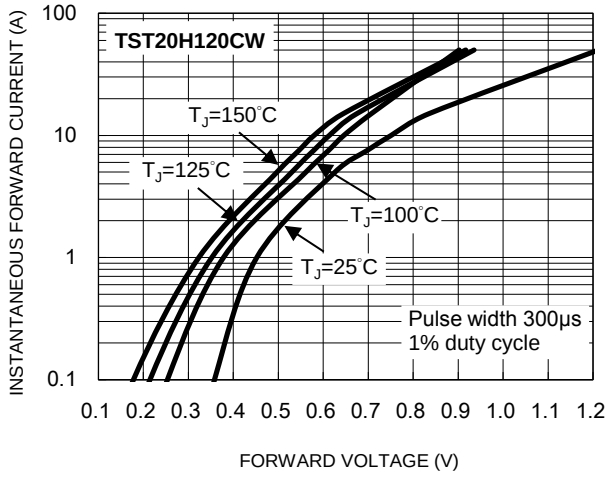


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

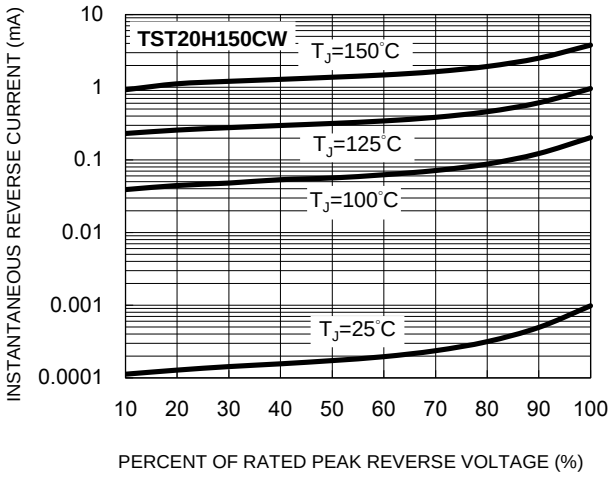


Fig.8 Typical Forward Characteristics

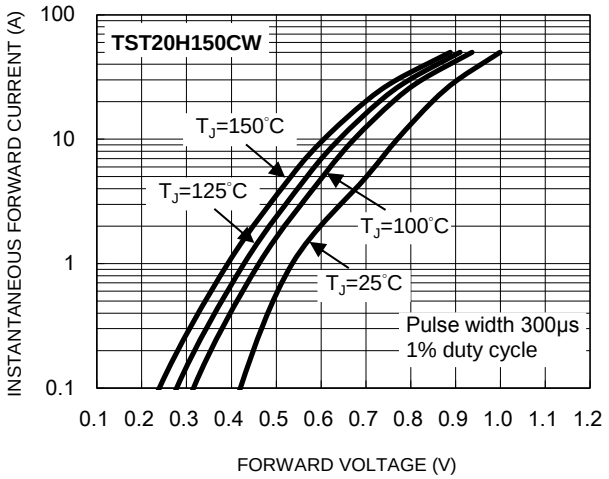


Fig.9 Typical Reverse Characteristics

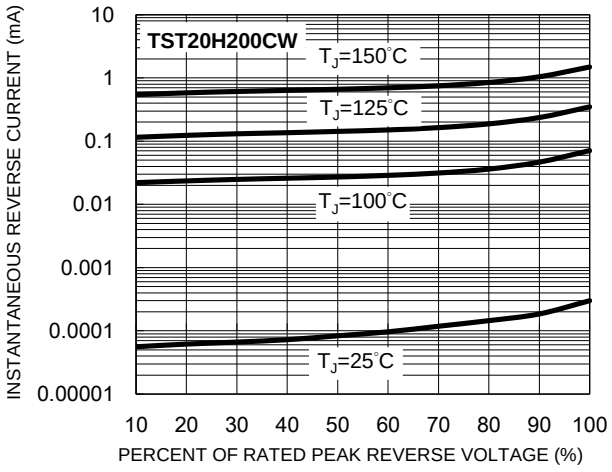
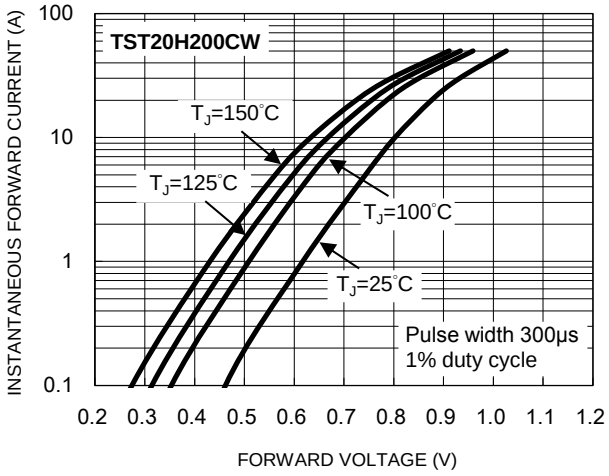
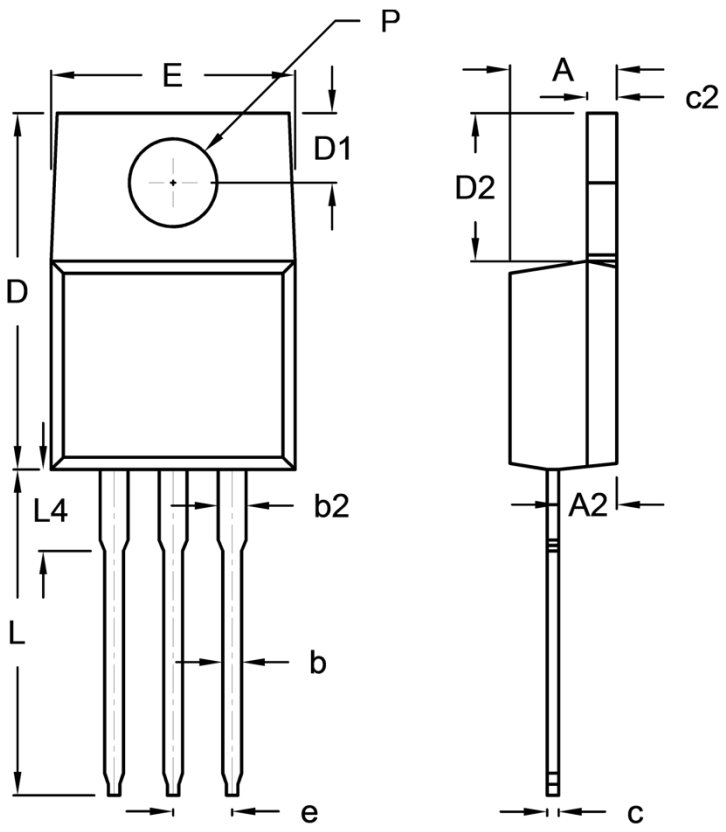


Fig.10 Typical Forward Characteristics



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	0.95	1.45	0.037	0.057
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	2.54	3.44	0.100	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