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30A, 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

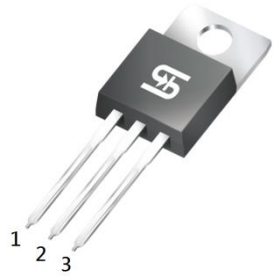
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

MECHANICAL DATA

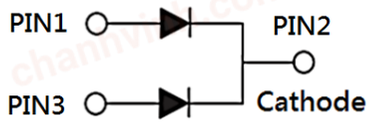
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 1.88g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	30	A
V_{RRM}	100 - 200	V
I_{FSM}	200	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**	**TST30H 100CW**	**TST30H 120CW**	**TST30H 150CW**	**TST30H 200CW**	**UNIT**
Marking code on the device		TST30H 100CW	TST30H 120CW	TST30H 150CW	TST30H 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	30				A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200				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

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THERMAL PERFORMANCE

PARAMETER		SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	TST30H100CW TST30H120CW	$R_{\Theta JC}$	2.2	°C/W
Junction-to-case thermal resistance	TST30H150CW TST30H200CW	$R_{\Theta JC}$	3.0	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	TST30H100CW	I_F = 15A, T_J = 25°C	V_F	0.69	0.78	V
	TST30H120CW			0.75	0.88	V
	TST30H150CW			0.81	0.90	V
	TST30H200CW			0.84	0.92	V
	TST30H100CW	I_F = 15A, T_J = 125°C		0.61	0.68	V
	TST30H120CW			0.64	0.75	V
	TST30H150CW			0.68	0.77	V
	TST30H200CW			0.70	0.79	V
Reverse current @ rated V_R per diode[2]	TST30H100CW TST30H120CW	T_J = 25°C	I_R	-	250	μA
	TST30H150CW TST30H200CW			-	150	μA
	TST30H100CW TST30H120CW	T_J = 125°C		-	35	mA
	TST30H150CW TST30H200CW			-	20	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
TST30HxCW	TO-220AB	50 / Tube

Notes:

1. “x” defines voltage from 100V(TST30H100CW) to 200V(TST30H200CW)

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CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

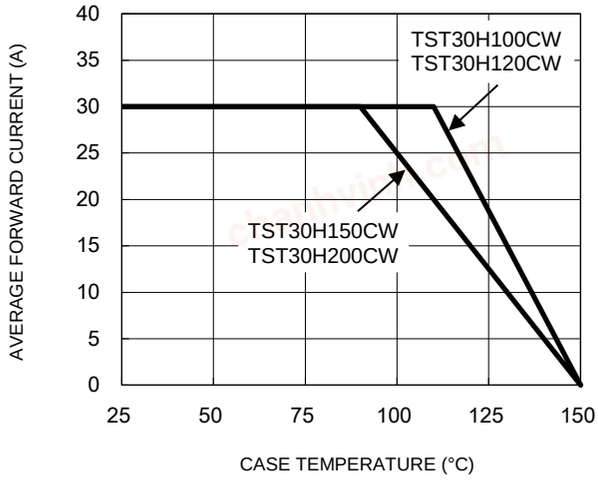


Fig.2 Typical Junction Capacitance

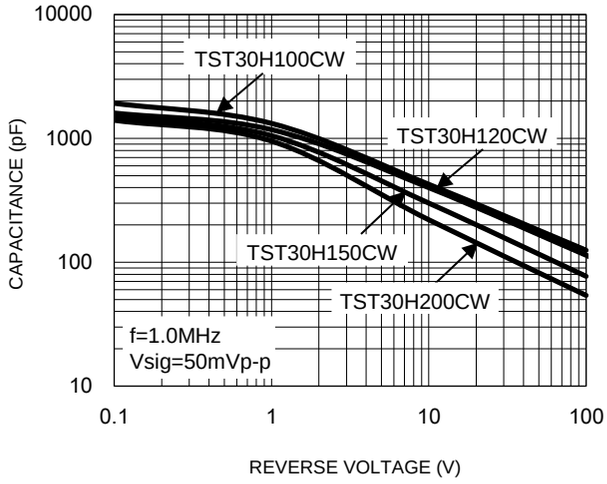


Fig.3 Typical Reverse Characteristics

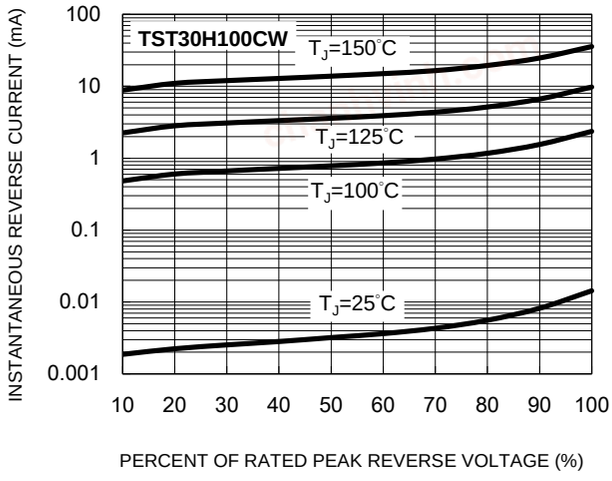


Fig.4 Typical Forward Characteristics

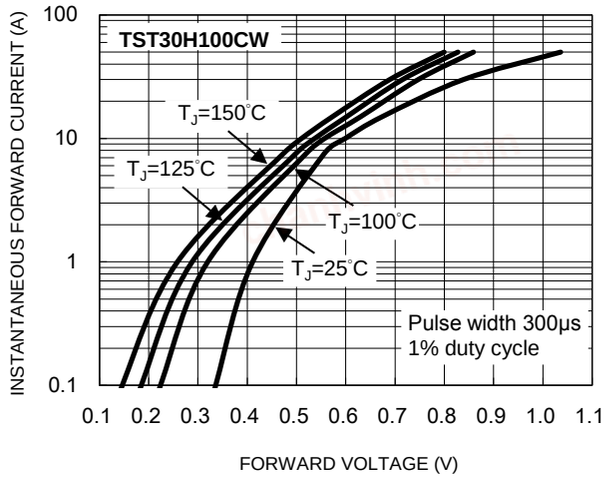


Fig.5 Typical Reverse Characteristics

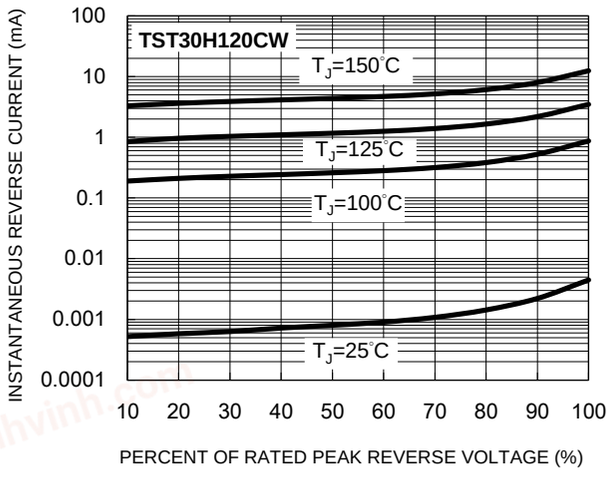
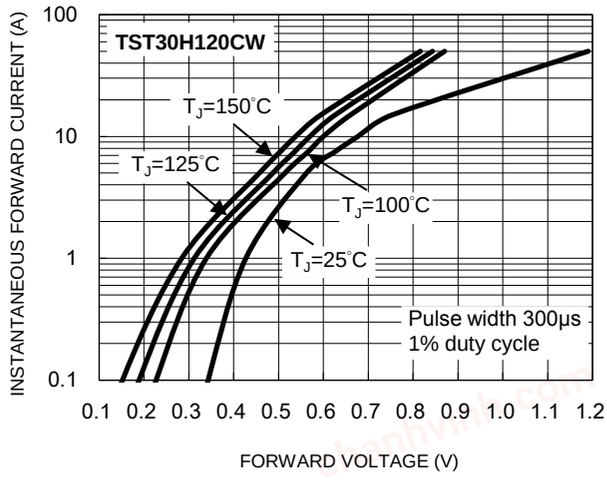


Fig.6 Typical Forward Characteristics



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CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

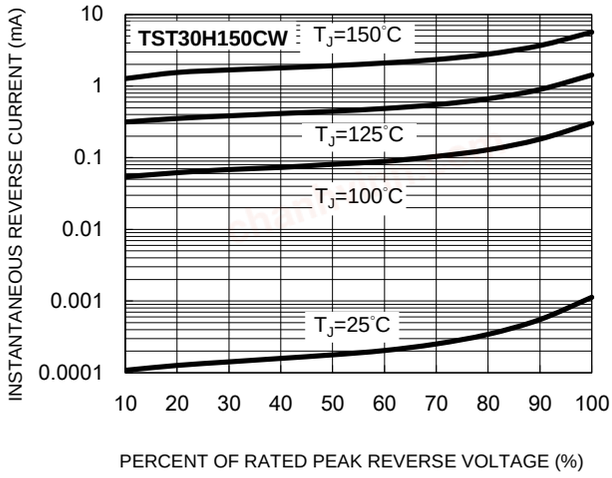


Fig.8 Typical Forward Characteristics

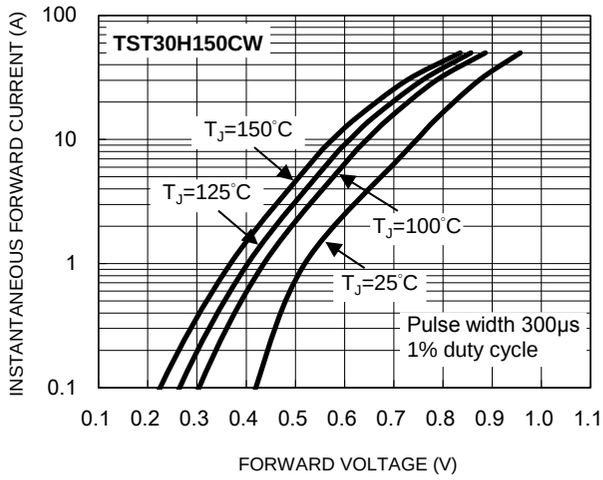


Fig.9 Typical Reverse Characteristics

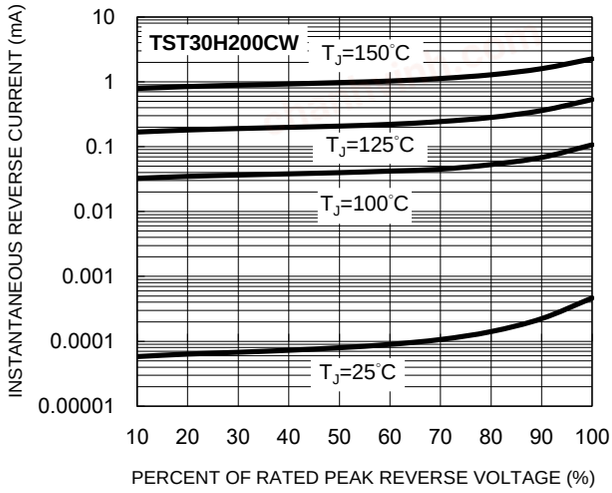
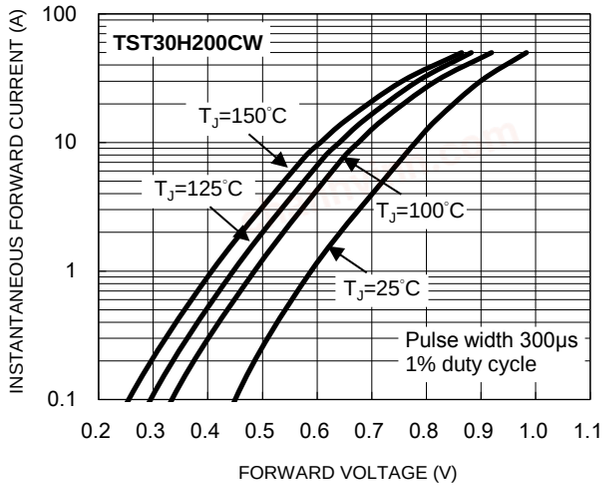


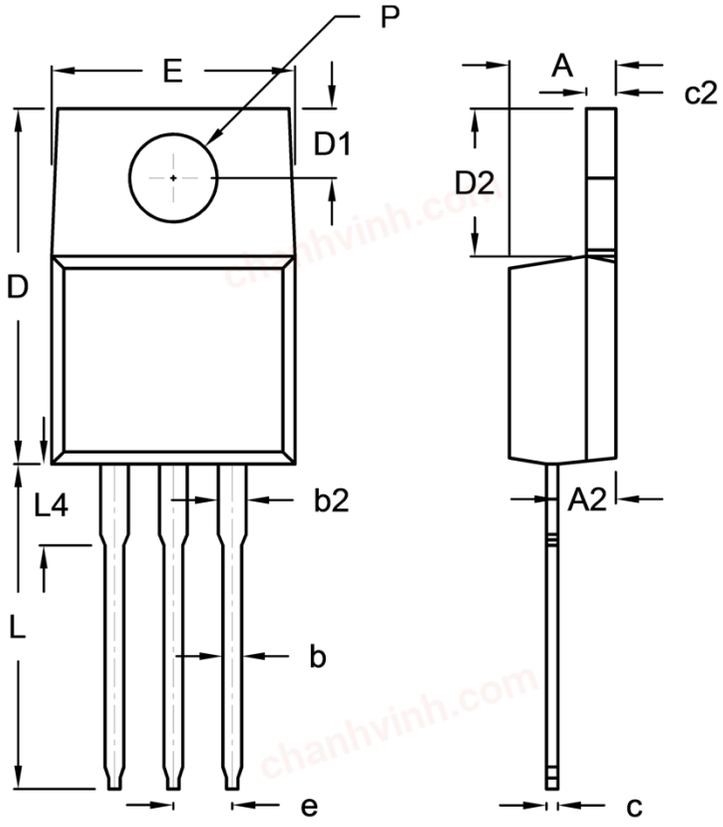
Fig.10 Typical Forward Characteristics



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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

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