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A Product Line of Diodes Incorporated | LITE-ON SEMICONDUCTOR

STPR1640CTW

SUPER FAST GLASS PASSIVATED RECTIFIERS

REVERSE VOLTAGE – 400 Volts
FORWARD CURRENT – 16 Amperes

FEATURES

- High current capability
- Superfast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low leakage current
- High surge capacity
- Qualification is according to AEC-Q101 Rev_D
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

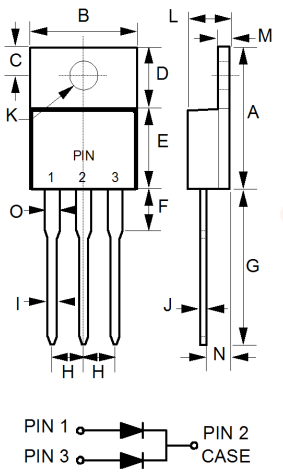
APPLICATION

- Switching-mode power supplies
- High frequency DC to DC converters

MECHANICAL DATA

- Package: JEDEC TO-220AB
- Package Material: "Green" molding compound, UL flammability classification 94V-0,"Halogen-free".
- Lead free finish, RoHS compliant
- Weight: 1.927 grams (Approximate)
- Marking code: STPR1640CTW

TO-220AB



TO-220AB		
DIM	MIN	MAX
A	14.40	15.20
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	--	4.20
G	12.70	14.73
H	2.29	2.79
I	0.51	1.00
J	0.30	0.64
K	3.53Φ	4.09Φ
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.14	1.70
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	400	V
Maximum DC blocking voltage		V_{DC}	400	V
Maximum Average rectified output current	@T_C=110°C	$I_{(AV)}$	16	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.		I_{FSM}	100	A
Operating junction and Storage Temperature range		T_J, T_{STG}	-55 ~ +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS		SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	I_F=8A	T_J=25°C	V_F	--	1.30	V
		T_J=125°C		0.98	1.20	
	I_F=16A	T_J=25°C		--	1.50	
		T_J=125°C		1.17	1.40	
Leakage current	V_R=400V	T_J=25°C	I_R	--	10	uA
		T_J=100°C		1.87	500	
Typical junction capacitance (Note 5)			C_J	45		pF

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MAX	UNIT
Reverse recovery time	I_r=0.5A, I_R=1.0A, I_{RR}=0.25A	T_{rr}	35	nS

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	$RthJ_C$	2	°C/W
	$RthJ_L$	2	

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 4.0V DC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on copper heatsink 100mm x 100mm x 1.98mm.

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RATING AND CHARACTERISTIC CURVES
STPR1640CTW

FIG.1 FORWARD CURRENT DERATING CURVE

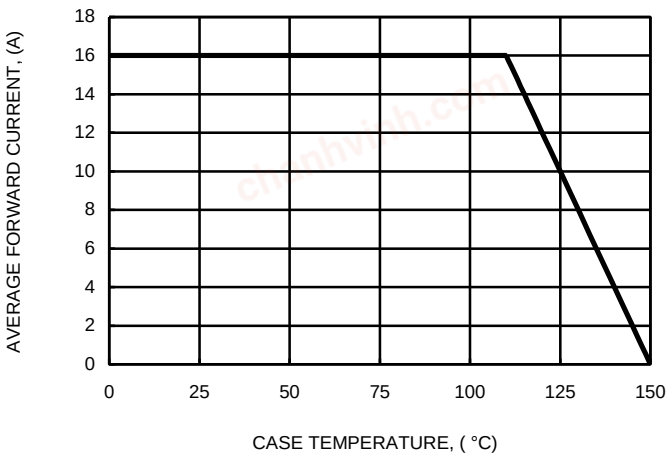


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

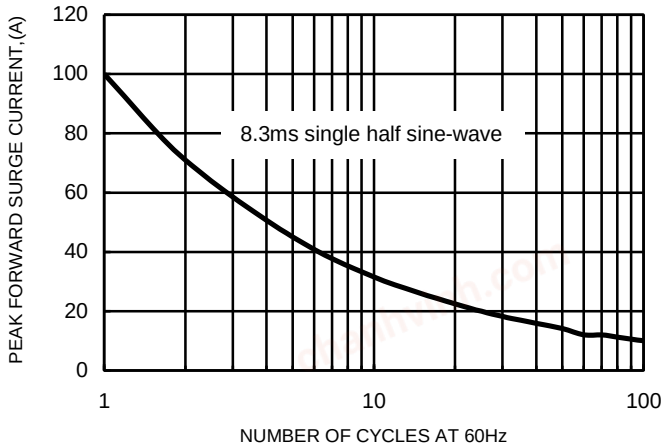


FIG.3 TYPICAL FORWARD CHARACTERISTICS

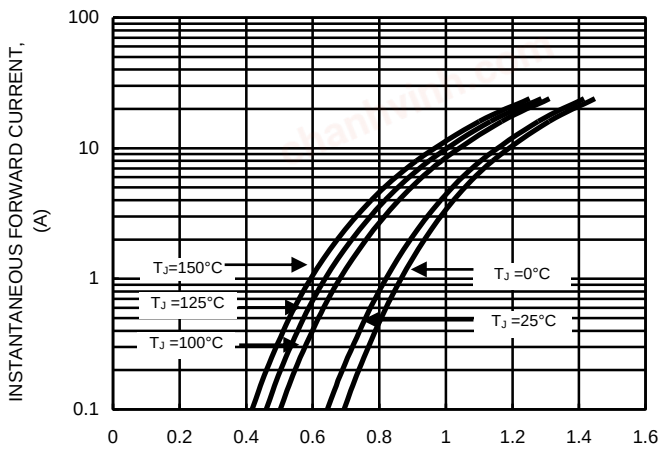


FIG.4 TYPICAL JUNCTION CAPACITANCE

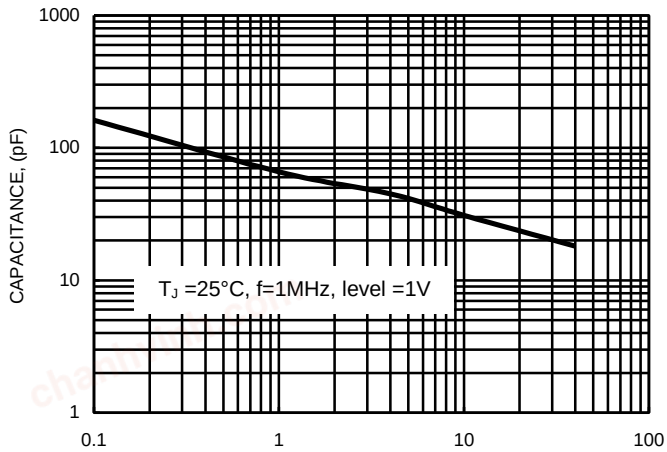
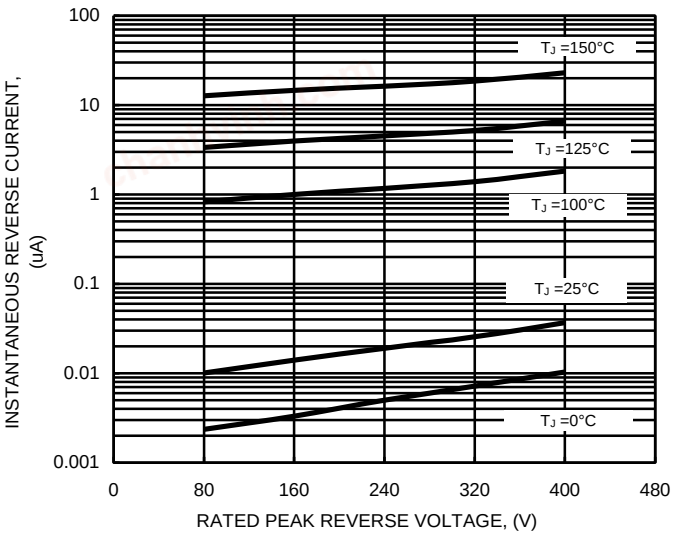


FIG.5 TYPICAL REVERSE CHARACTERISTICS



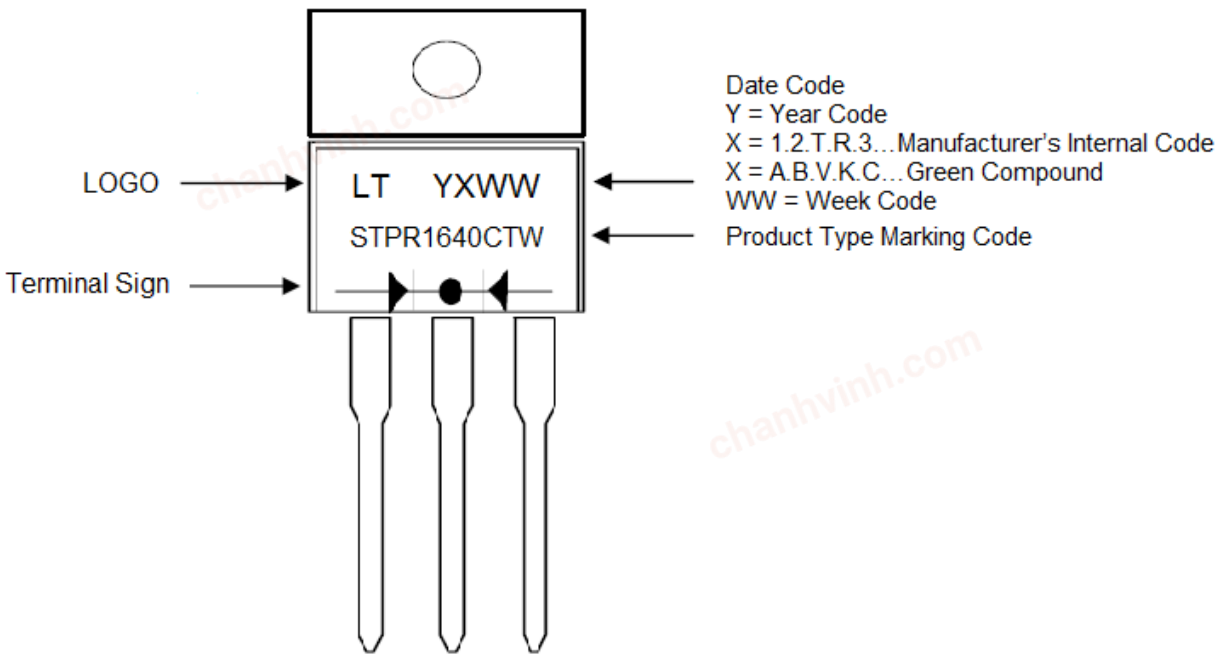
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Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
STPR1640CTW	TO-220AB	50 pcs	Tube

Marking Information :



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