

**SUPER FAST
GLASS PASSIVATED RECTIFIER**

**REVERSE VOLTAGE – 400 Volts
FORWARD CURRENT – 10 Amperes**

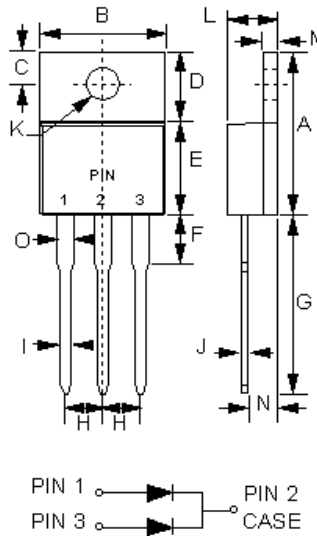
FEATURES

- Glass passivated chip
- Superfast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Qualified according to AEC-Q101 Rev_D
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

MECHANICAL DATA

- Package: JEDEC TO-220AB
- Package Material: Plastic material, UL flammability classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating
- Polarity indicator: As marked on the body
- Weight: 0.072 ounces, 2.0275 grams (Approximate)
- Component in accordance to RoHS 2002/95/EC
- ESD capability: HBM_8KV (JESD22-A114)
- Maximum mounting torque = 0.5 N.m (5.1 Kgf.cm)

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	1.14
J	0.30	0.64
K	3.53 \varnothing	4.09 \varnothing
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.

PARAMETER	SYMBOL	VALUE	UNIT		
Device marking code	Note	STPR1040CTW	---		
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	400	V		
Average Rectified Output Current See FIG.1	I _F	10	A		
Peak Forward Surge Current 8.3ms single half sine-wave (Per leg)	I _{FSM}	80	A		
Storage temperature range	T _{STG}	-55 to +150	°C		
Operating junction temperature range	T _J	-55 to +150	°C		
PARAMETER	TEST CONDITIONS	SYMBOL	Min.	Max.	UNIT
Breakdown voltage	I _R =10uA T _j =25°C	V _B	400	---	V
Forward Voltage (Note 4)	I _F =5A T _j =25°C T _j =125°C	V _F	---	1.30	V
	I _F =10A T _j =25°C T _j =125°C		---	1.20	
	I _F =10A T _j =25°C T _j =125°C		---	1.50 1.40	
Leakage Current	V _R =400V T _j =25°C T _j =100°C	I _R	---	10 250	uA
Reverse recovery time	I _F = 0.5A I _{rr} = 0.25A I _R =1.0A T _j =25°C	t _{rr}	---	35	ns
Junction Capacitance	V _R =4V Freq.=1MHz T _j =25°C	C _j	---	50	pF
THERMAL CHARACTERISTIC		SYMBOL	Typical		UNIT
Typical thermal resistance_Junction to Case (Note 5)		R _{θJC}	4.2		°C/W
Typical thermal resistance_Junction to Lead (Note 5)		R _{θJL}	6.0		°C/W

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. Thermal Resistance test performed in accordance with JESD-51. R_{θJL} is measured at the PIN 2, R_{θJC} is measured at the top centre of body.

RATING AND CHARACTERISTIC CURVES

STPR1040CTW

FIG.1- FORWARD CURRENT DERATING CURVE

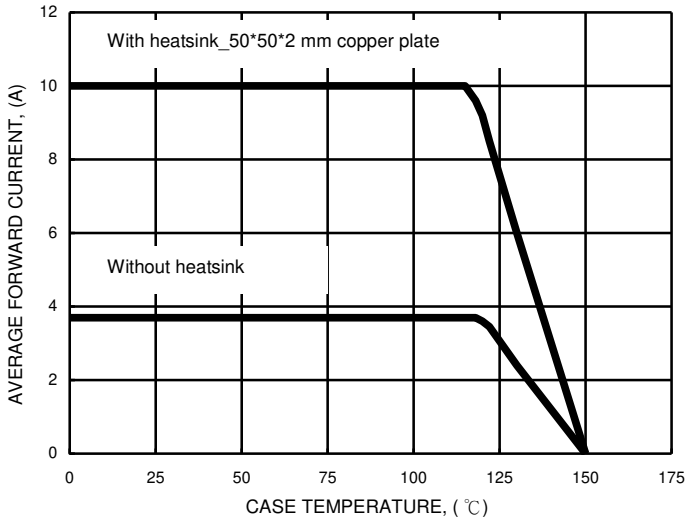


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

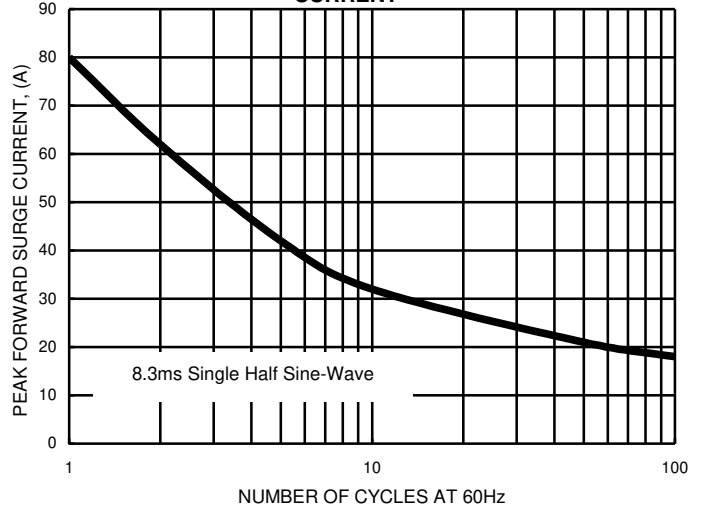


FIG.3- TYPICAL FORWARD CHARACTERISTICS

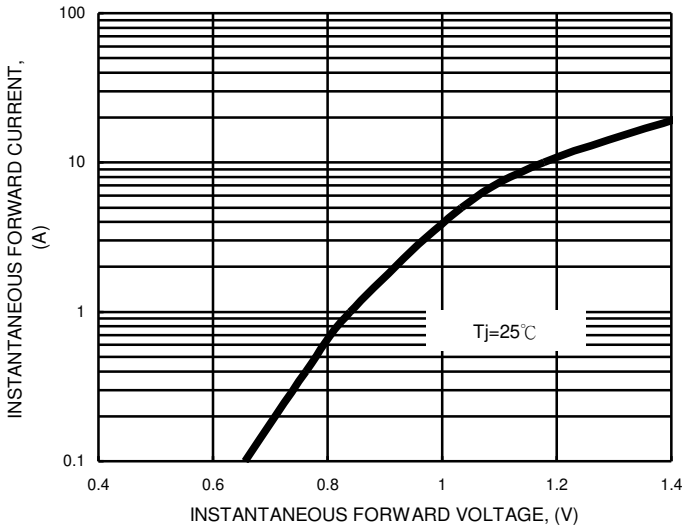


FIG.4- TYPICAL JUNCTION CAPACITANCE

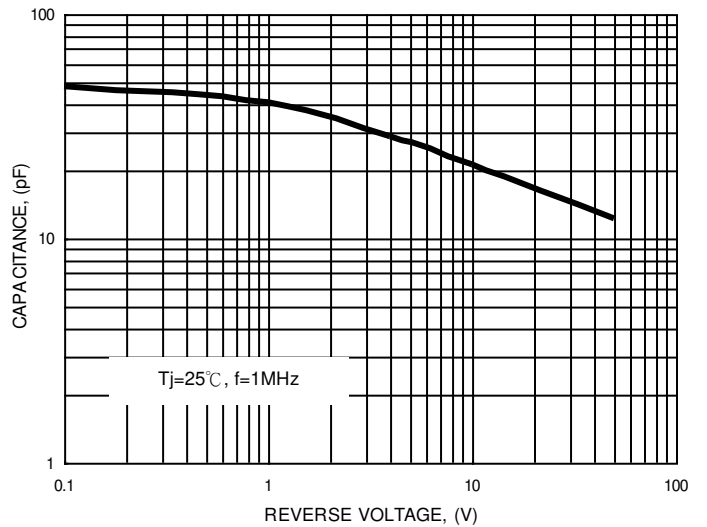
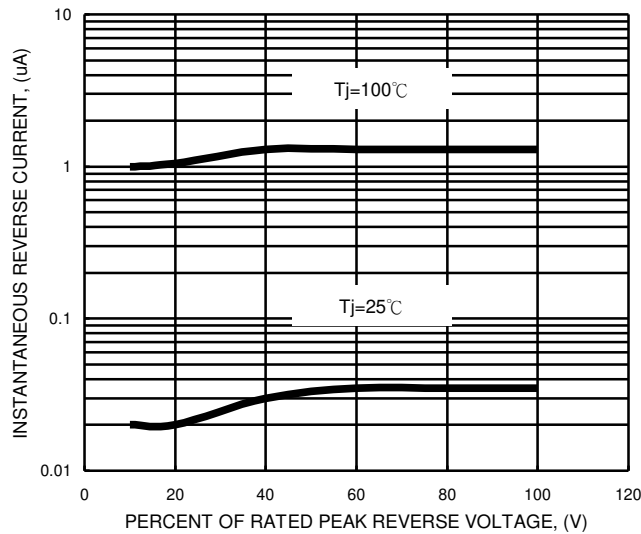


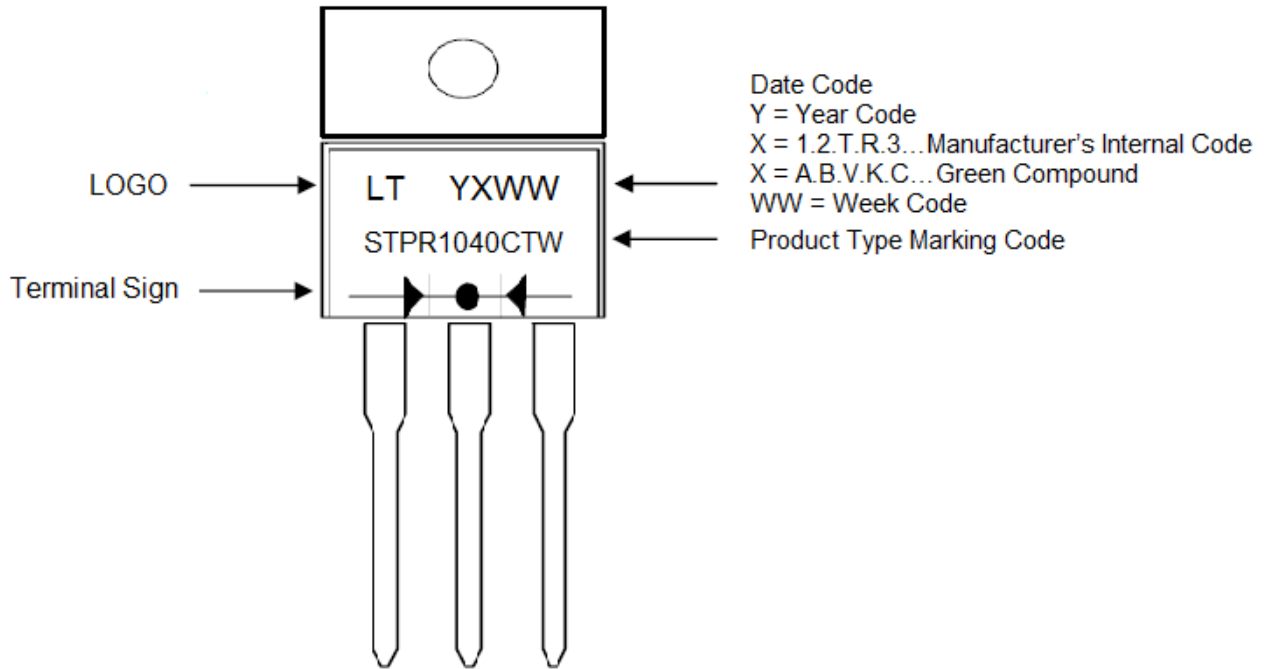
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
STPR1040CTW	TO-220AB	50 pcs	Tube

Marking Information :



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