A Product Line of Diodes Incorporated | LITE-ON SEMICONDUCTOR

STPR1020CTW

SUPER FAST GLASS PASSIVATED RECTIFIER

REVERSE VOLTAGE – 200Volts FORWARD CURRENT – 10 Amperes

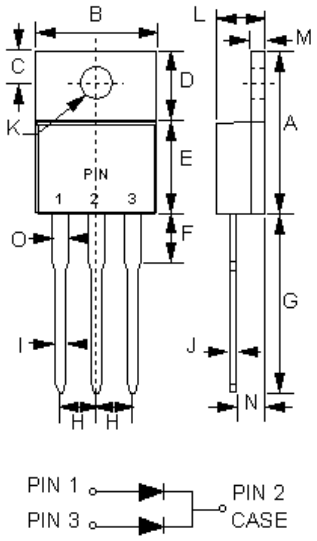
FEATURES

- 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_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Case: JEDEC TO-220AB
- Case Material: Plastic material, UL flammability classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating
- Polarity indicator: As marked on the body
- Weight: 2.24 grams
- 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 ø	4.09 ø
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	STPR1020CTW	UNIT
Device marking code	Note	STPR1020CTW	---
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	V
Average Rectified Output Current See FIG.1	I_F	10	A
Peak Forward Surge Current 8.3ms single half sine-wave	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.	Typ.	Max.	UNIT
Breakdown voltage	IR=10uA	Tj=25°C	V_B	200	---	---	V
Forward Voltage (4)	IF=5A	Tj=25°C Tj=125°C	V_F	--- ---	0.94 0.80	1.10 1.00	V
	IF=10A	Tj=25°C Tj=125°C		--- ---	1.05 0.92	1.25 1.20	
Leakage Current	VR=200V	Tj=25°C Tj=100°C	I_R	--- ---	0.05 1.50	10 250	uA
Reverse recovery time	IF= 0.5A Irr= 0.25A IR =1.0A	Tj=25°C	t_{rr}	---	22	30	ns
Junction Capacitance	VR=4V Freq.=1MHz	Tj=25°C	Cj	---	30	50	pF

THERMAL CHARACTERISTIC	SYMBOL	Typical	UNIT
Typical thermal resistance, Junction to Ambient (5)	$R_{\Theta JA}$	12	°C/W
Typical thermal resistance, Junction to Lead (5)	$R_{\Theta JL}$	6.0	°C/W
Typical thermal resistance, Junction to Case (5)	$R_{\Theta JC}$	4.2	°C/W

Note: (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. $R_{\Theta JL}$ is measured at the PIN 2, $R_{\Theta JC}$ is measured at the top centre of body.

REV.-10, Oct-2021, KTGA24

RATING AND CHARACTERISTIC CURVES
STPR1020CTW

FIG.1- FORWARD CURRENT DERATING CURVE

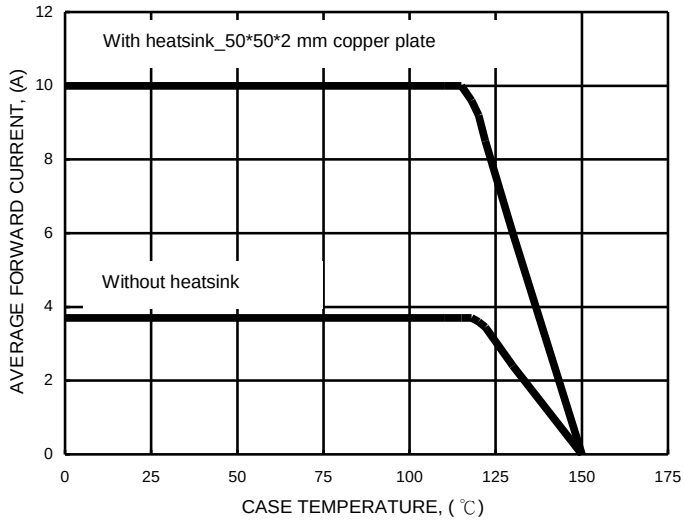


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

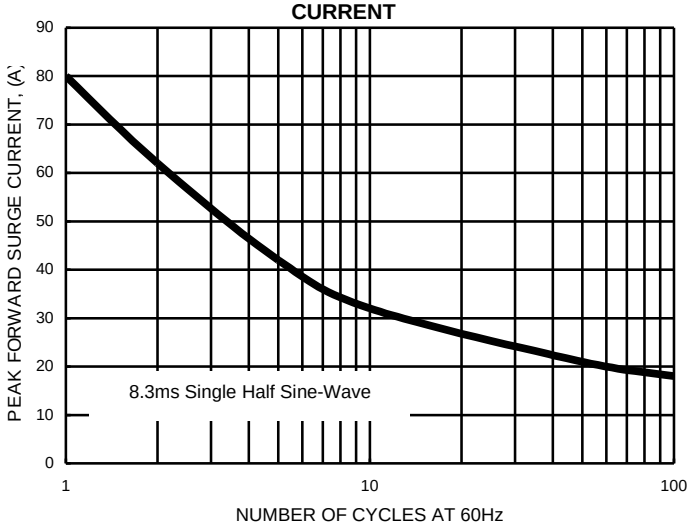


FIG.3- TYPICAL FORWARD CHARACTERISTICS

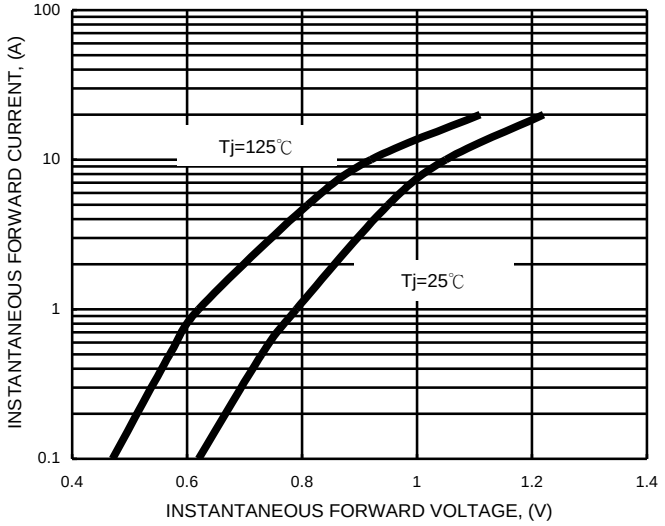


FIG.4- TYPICAL JUNCTION CAPACITANCE

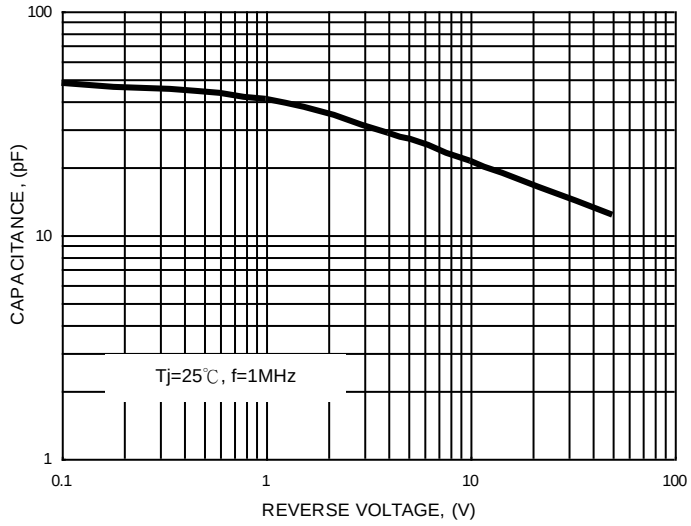
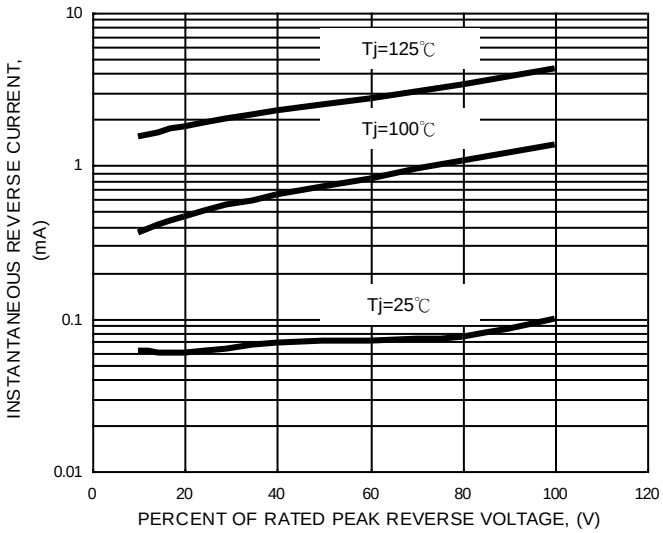


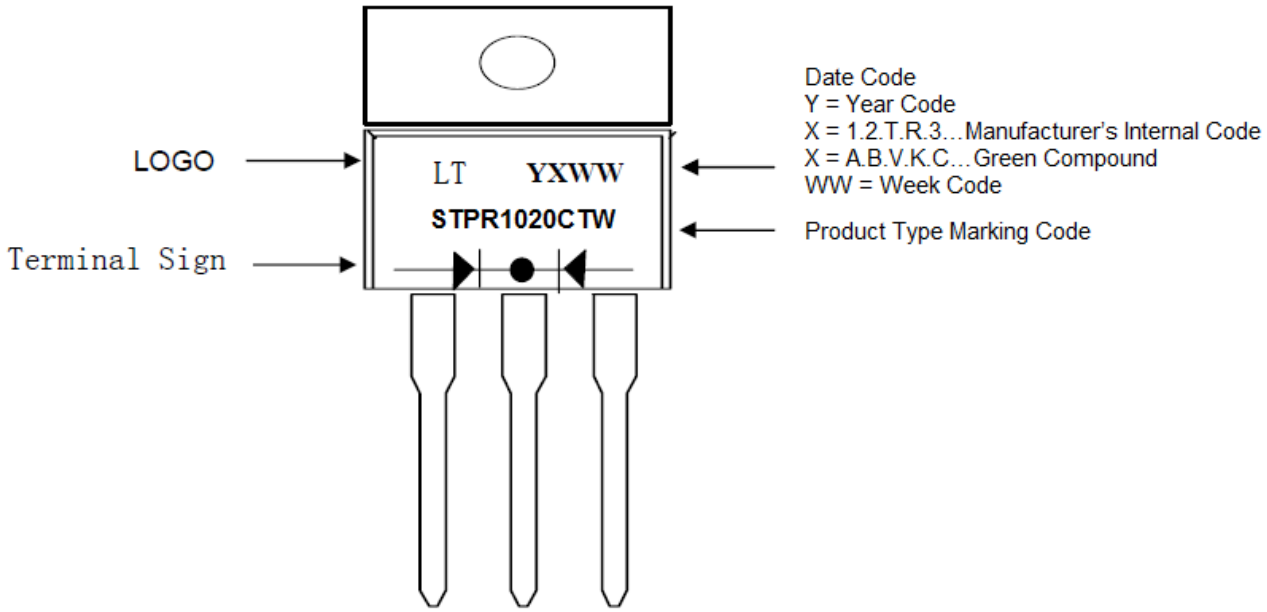
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information :

Part Number	Case	Packaging
STPR1020CTW	TO-220AB	50pcs/Tube

Marking Information :



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