

# STPF1020CTSW

## SUPER FAST GLASS PASSIVATED RECTIFIERS

**REVERSE VOLTAGE** – 200 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
- 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)**

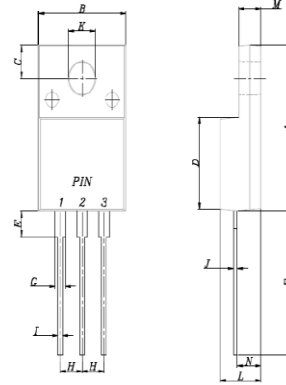
### APPLICATION

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

### MECHANICAL DATA

- Package: JEDEC TO-220ABFP
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".
- Lead free finish, RoHS compliant
- Weight: 1.558 grams (Approximate)
- Marking code: STPF1020CTSW

### ITO-220(S)AB



ITO-220(S)AB		
DIM	MIN	MAX
A	14.95	15.95
B	10.00	10.40
C	2.76	3.36
D	8.50	8.80
E	2.10	2.50
F	13.00	13.70
G	1.15	1.37
H	2.40	2.70
I	0.50	0.80
J	0.45	0.70
K	3.00	3.30
L	4.46	4.87
M	2.48	2.80
N	2.50	2.80

All dimension 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	$V_{RRM}$	200	V
Maximum DC blocking voltage	$V_{DC}$	200	V
Maximum Average rectified output current	$I_{(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	$I_{FSM}$	80	A
Operating junction and Storage Temperature range	$T_J, T_{STG}$	-55 to +150	°C

### STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=5A$	$V_F$	$T_J=25^\circ C$	1.10	V
			$T_J=125^\circ C$	0.83	
	$I_F=10A$	$T_J=25^\circ C$	0.76	1.25	
		$T_J=125^\circ C$	0.47	250	
Leakage current	$V_R=200V$	$I_R$	10	250	uA
Typical junction capacitance (Note 5)		$C_J$	45		pF

### DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MAX	UNIT
Reverse recovery time	$I_F=0.5A, I_R=1.0A, I_{RR}=0.25A$	$T_{rr}$	30	nS

### THERMAL CHARACTERISTICS

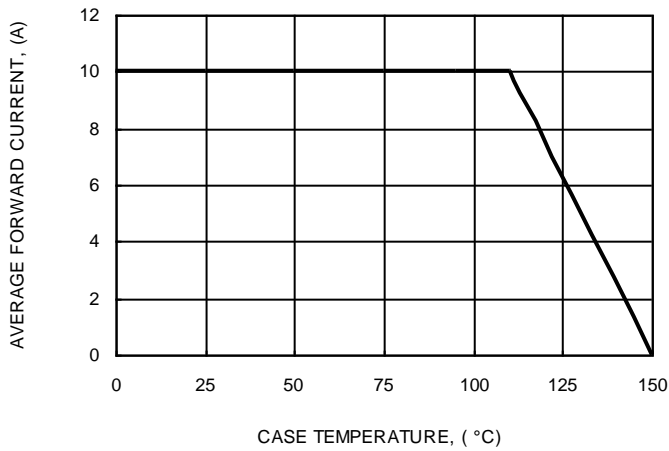
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6,7)	$R_{thJC}$	5	°C/W
	$R_{thJL}$	4	

### Notes:

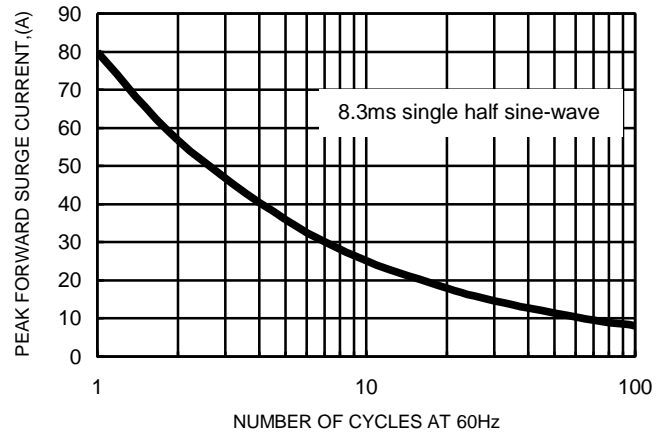
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- 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 100mm x 100mm x 1.9mm copper heatsink.

**RATING AND CHARACTERISTIC CURVES**  
**STPF1020CTSW**

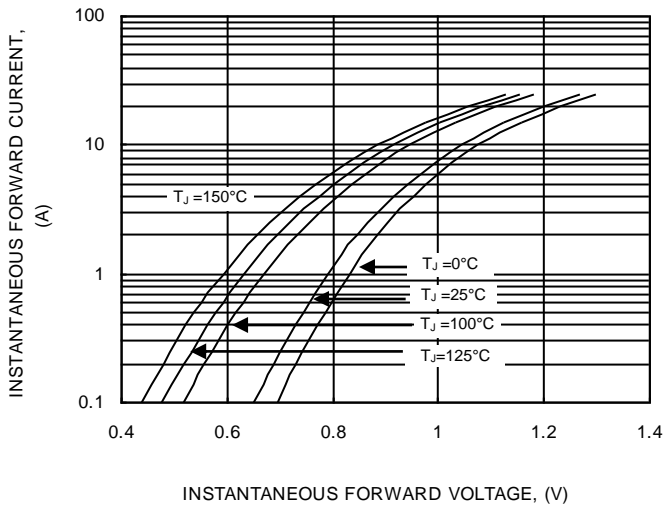
**FIG.1 FORWARD CURRENT DERATING CURVE**



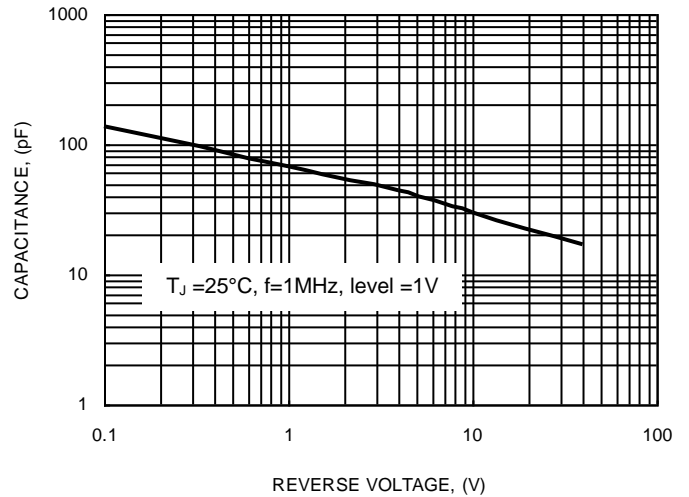
**FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT**



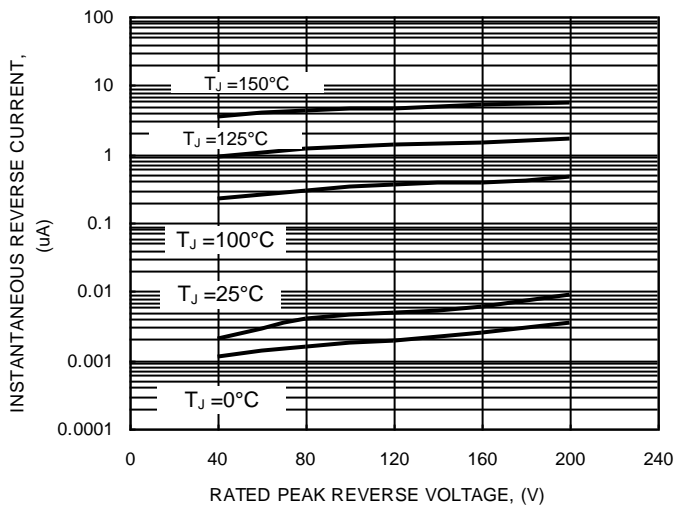
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 TYPICAL JUNCTION CAPACITANCE**



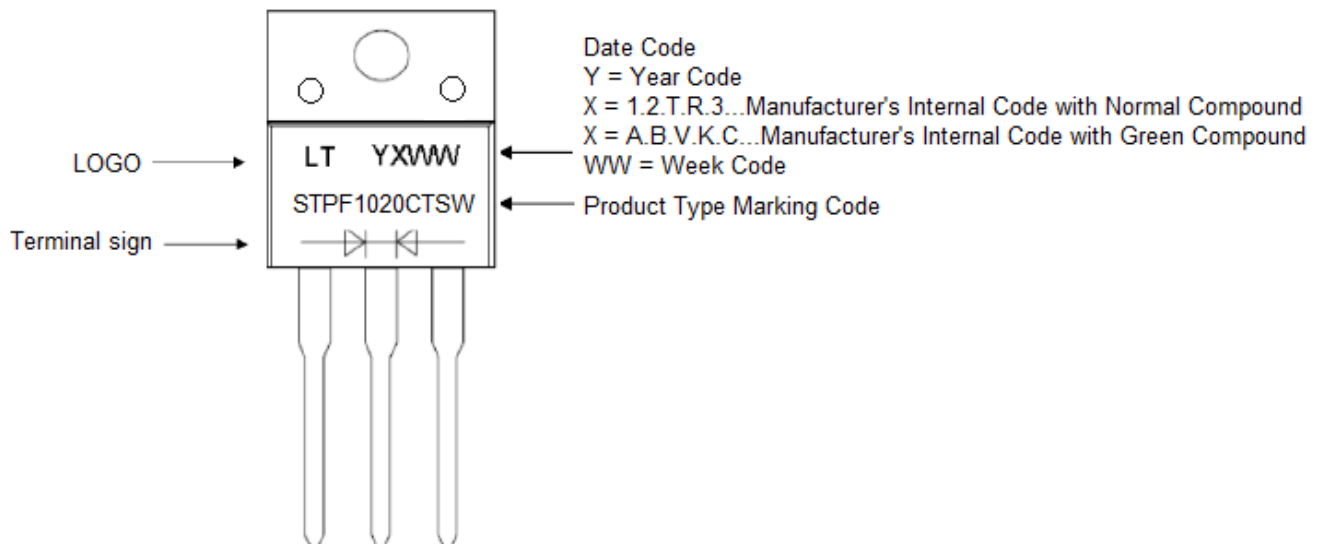
**FIG.5 TYPICAL REVERSE CHARACTERISTICS**



## Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
STPF1020CTSW	ITO-220(S)AB	50 pcs	Tube

## Marking Information:



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