

**SUPER FAST
GLASS PASSIVATED RECTIFIERS**

**REVERSE VOLTAGE – 400 Volts
FORWARD CURRENT – 20 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

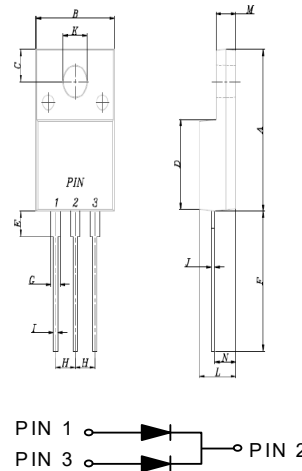
APPLICATION

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

MECHANICAL DATA

- Case: JEDEC TO-220ABFP
- Case Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".
- Lead free finish, RoHS compliant
- Weight: 1.558 grams (Approximate)
- Marking code: STPF2040CTSW

ITO-220(S)AB



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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}	400	V
Maximum DC blocking voltage	V_{DC}	400	V
Maximum Average rectified output current	$I_{(AV)}$	20	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.	I_{FSM}	125	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 (Note1)	$I_F=10A$	V_F	--	1.30	V
	$T_J=25^\circ C$		0.90	1.20	
	$T_J=125^\circ C$		--	1.50	
Leakage current	$I_F=20A$	I_R	1.06	1.40	uA
	$V_R=400V$		--	10	
Typical junction capacitance (Note 2)	$T_J=25^\circ C$ $T_J=100^\circ C$	C_J	2.45	500	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}	35	nS

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 3,4)	R_{thJc}	3	°C/W
	R_{thJl}	3	

Note :

REV.-2 ,Sep-2019, KTGC86

- (1) 300us pulse width, 2% duty cycle.
- (2) Measured at 1.0MHz and applied voltage of 4.0V DC.
- (3) Thermal resistance test performed in accordance with JESD-51.
- (4) The unit mounted on Aluminum plate 45mm x 12mm x 1.6 mm and copper heatsink 250mm x 250mm x 10mm in free air condition.

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RATING AND CHARACTERISTIC CURVES STPF2040CTSW



FIG.1 FORWARD CURRENT DERATING CURVE

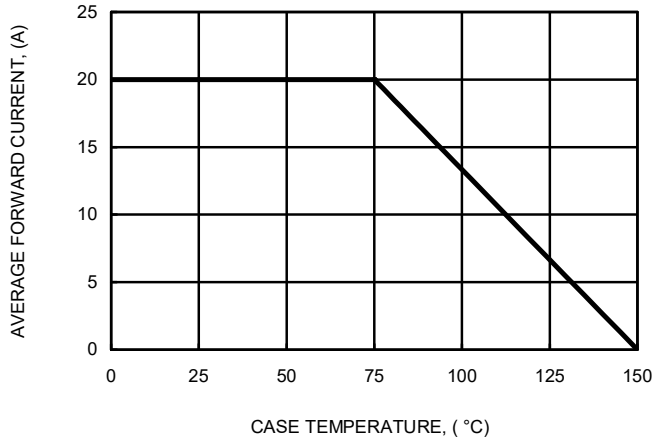


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

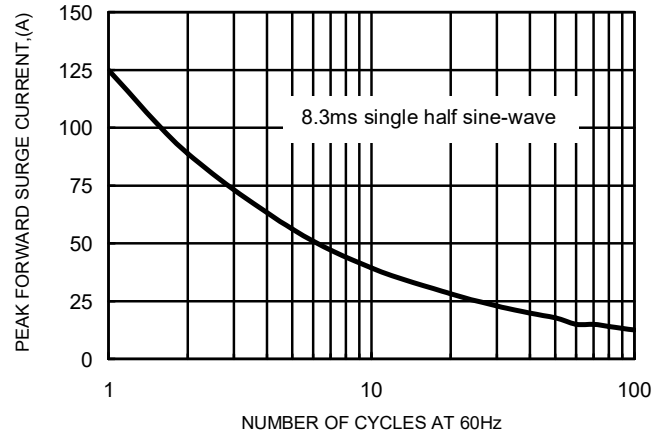


FIG.3 TYPICAL FORWARD CHARACTERISTICS

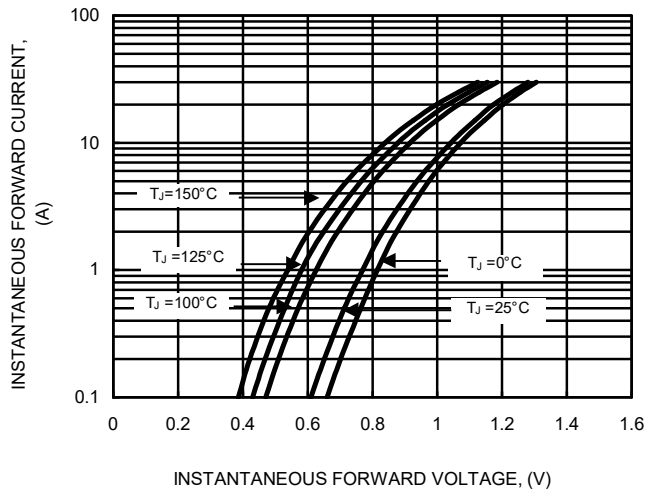


FIG.4 TYPICAL JUNCTION CAPACITANCE

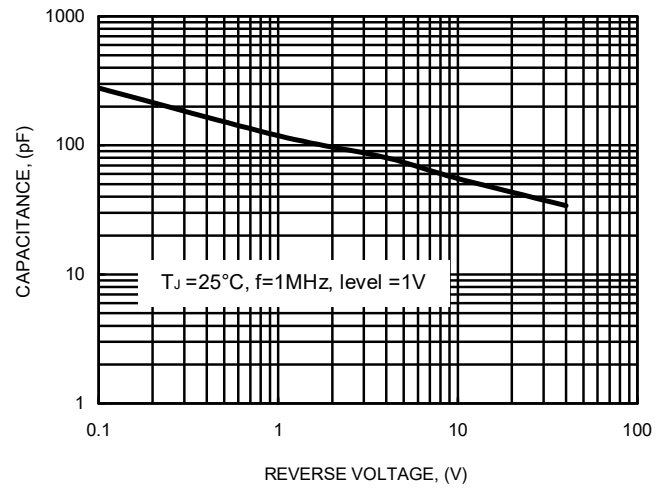
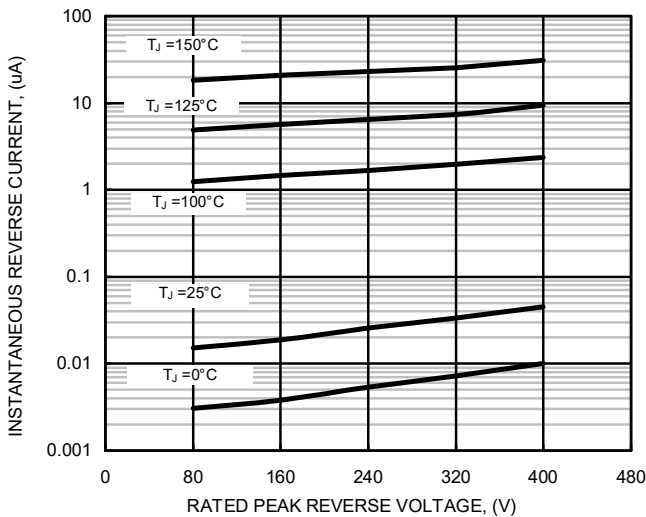


FIG.5 TYPICAL REVERSE CHARACTERISTICS



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