

**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

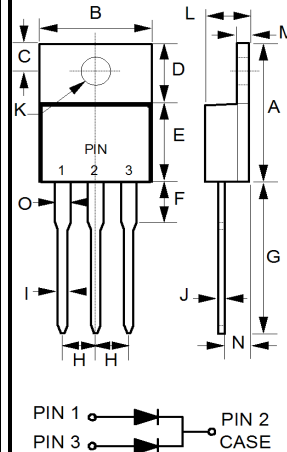
APPLICATION

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

MECHANICAL DATA

- Case: JEDEC TO-220AB
- Case Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".
- Lead free finish, RoHS compliant
- Weight: 1.927 grams (Approximate)
- Marking code: STPR2040CTW

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	1.37

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	$I_{(AV)}$	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)	$I_F=10A$ $T_J=25^\circ C$ $T_J=125^\circ C$	V_F	--	1.30	V
			0.88	1.20	
	$I_F=20A$ $T_J=25^\circ C$ $T_J=125^\circ C$	--	1.50		
Leakage current	$V_R=400V$ $T_J=25^\circ C$ $T_J=100^\circ C$	I_R	--	10	uA
			2.47	500	
Typical junction capacitance (Note 2)		C_J	80		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}	2	°C/W
	R_{thJL}	1	

Note :

REV.-3 , Sep-2019, KTGC88

- (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 copper 100mm x 100mm x 1.9 mm

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**RATING AND CHARACTERISTIC CURVES
STPR2040CTW**



FIG.1 FORWARD CURRENT DERATING CURVE

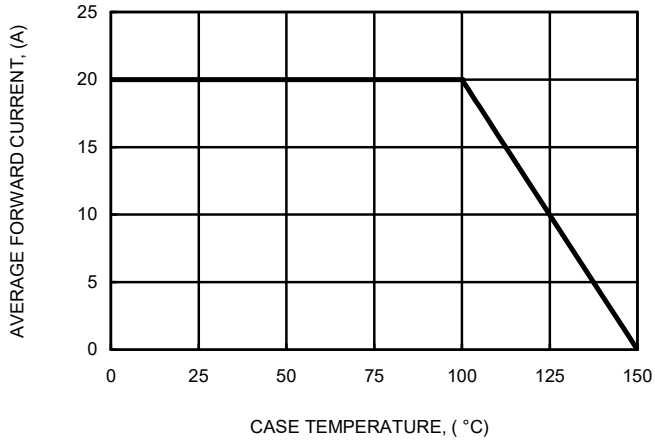


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

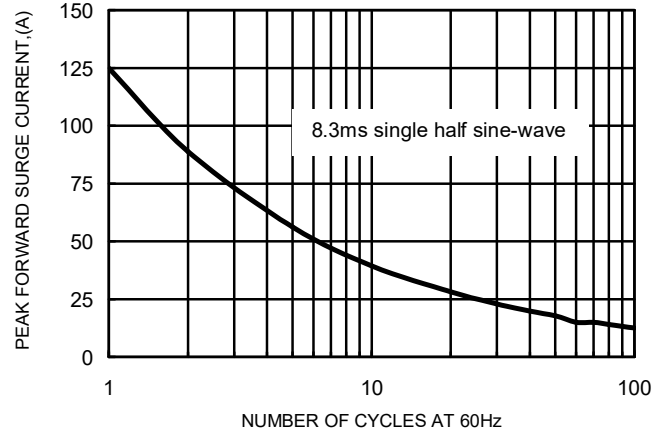


FIG.3 TYPICAL FORWARD CHARACTERISTICS

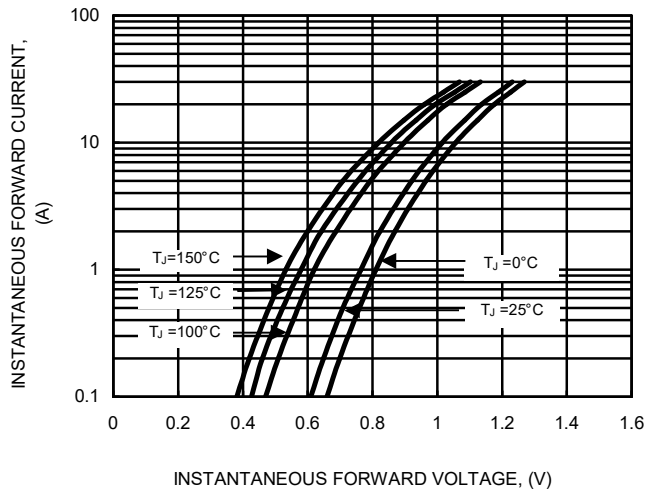


FIG.4 TYPICAL JUNCTION CAPACITANCE

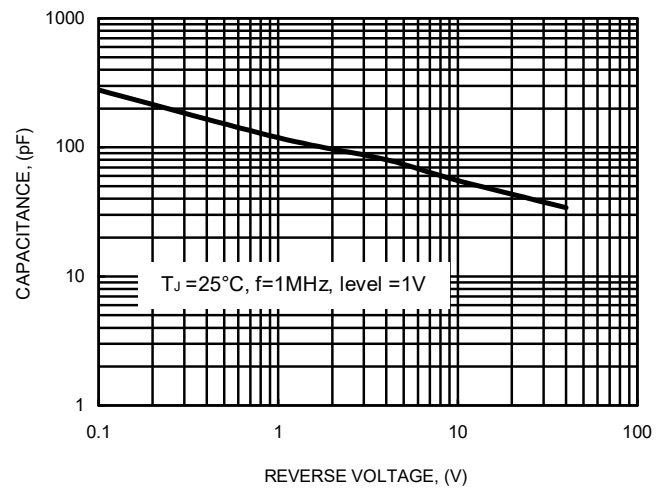
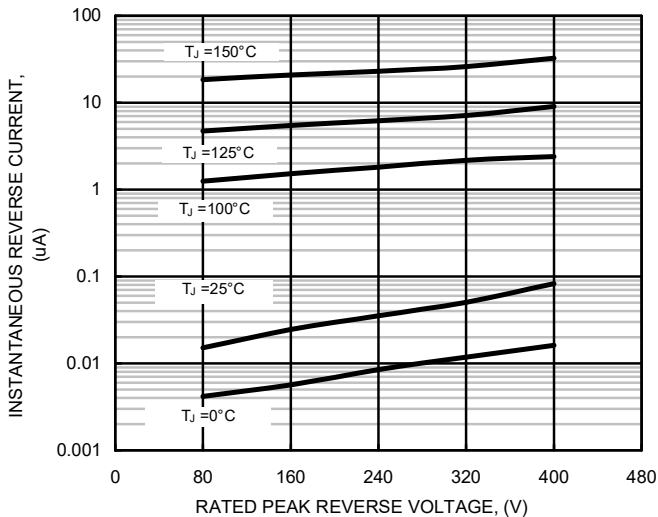


FIG.5 TYPICAL REVERSE CHARACTERISTICS



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