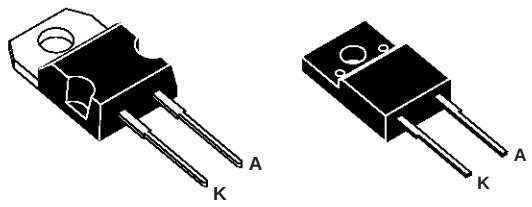
STPR820D/F

ULTRA-FAST RECOVERY RECTIFIER DIODES

MAIN PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	8 A
V_{RRM}	200 V
Tj (max)	150°C
V_F (max)	0.99 V
trr (max)	30 ns



TO-220AC
STPR820D

ISOWATT220AC
STPR820F

FEATURES

- SUITED FOR SMPS
- LOW LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIME
- HIGH SURGE CURRENT CAPABILITY
- HIGH AVALANCHE ENERGY CAPABILITY

Low cost single chip rectifier suited for switchmode power supply and high frequency DC to DC converters.

Packaged in TO-220AC and ISOWATT220AC, this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			200	V
$I_{F(RMS)}$	RMS forward current			20	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	TO-220AC	Tc = 120°C	8	A
		ISOWATT220AC	Tc = 100°C		
I_{FSM}	Surge non repetitive forward current		Tp = 10 ms Sinusoidal	80	A
T_{stg}	Storage temperature range			- 65 to + 150	°C
Tj	Maximum operating junction temperature			+ 150	

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	TO-220AC	3.0	°C/W
		ISOWATT220AC	5.5	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameters	Test conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	Tj = 25°C	$V_R = V_{RRM}$			50	µA
		Tj = 100°C				0.6	mA
V_F **	Forward voltage drop	Tj = 125°C	I_F = 8 A			0.99	V
		Tj = 125°C	I_F = 16 A			1.20	
		Tj = 25°C	I_F = 16 A			1.25	

Pulse test : * tp = 5 ms, δ < 2 %
** tp = 380 µs, δ < 2 %

RECOVERY CHARACTERISTICS

Symbol	Test conditions			Min.	Typ.	Max.	Unit
trr	T_j = 25°C	I_F = 0.5A I_R = 1A	Irr = 0.25A			30	ns
tfr	T_j = 25°C	I_F = 1A V_{FR} = 1.1 x V_F max	tr = 10 ns		20		
V_{FP}	T_j = 25°C	I_F = 1A	tr = 10 ns		3		V

Fig. 1: Average forward power dissipation versus average forward current.

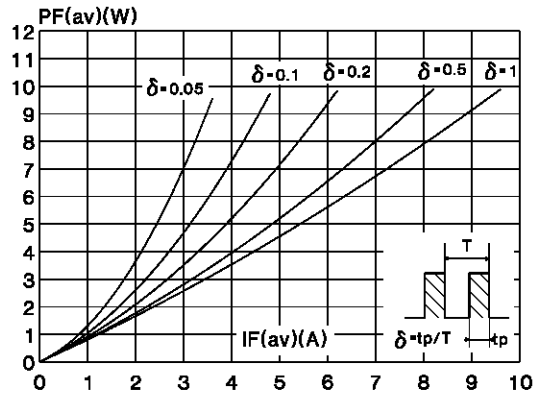


Fig. 2: Peak current versus form factor.