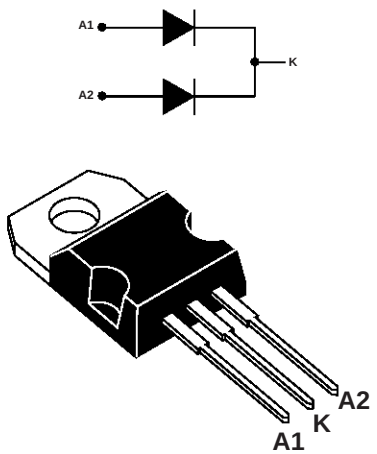
STPR2420CT

ULTRA-FAST RECOVERY RECTIFIER DIODES

MAIN PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	2 x 12 A
V_{RRM}	200 V
Tj (max)	150°C
V_F (max)	0.99 V
trr (max)	30 ns



TO-220AB

FEATURES

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

Low cost dual center tap rectifier suited for Switch Mode Power Supply and high frequency DC to DC converters.

Packaged in TO-220AB, 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			30	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	Tc = 115°C	Per diode	12	A
			Per device	24	
I_{FSM}	Surge non repetitive forward current		Tp = 10 ms Sinusoidal	120	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	Per diode Total	2.5 1.4	°C/W
$R_{th(c)}$		Coupling	0.23	

When the diodes 1 and 2 are used simultaneously :
Δ Tj(diode 1) = P(diode 1) x Rth(j-c) (Per diode) + P(diode 2) x Rth(c)

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				0.8	mA
V_F **	Forward voltage drop	Tj = 125°C	I_F = 12 A			0.99	V
		Tj = 125°C	I_F = 24 A			1.20	
		Tj = 25°C	I_F = 24 A			1.25	

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

To evaluate the conduction losses use the following equation :
$P = 0.78 \times I_{F(AV)} + 0.0175 \times I_{F}^{2}{}_{(RMS)}$

RECOVERY CHARACTERISTICS

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