



# STPS20L60CT

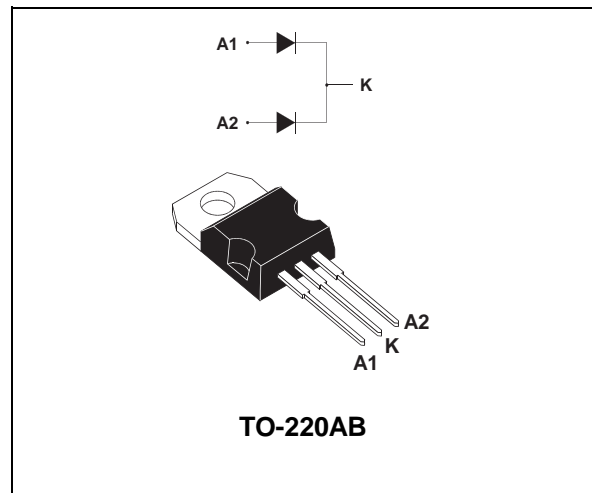
## POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

<b>I<sub>F(AV)</sub></b>	<b>2 x 10 A</b>
<b>V<sub>RRM</sub></b>	<b>60 V</b>
<b>T<sub>j (max)</sub></b>	<b>150 °C</b>
<b>V<sub>F (max)</sub></b>	<b>0.56 V</b>

### FEATURES AND BENEFITS

- LOW FORWARD VOLTAGE DROP
- NEGLIGIBLE SWITCHING LOSSES
- LOW THERMAL RESISTANCE



### DESCRIPTION

Dual center tap Schottky rectifiers suited for Switched Mode Power Supplies and high frequency DC to DC converters.

Packaged in TO-220AB, this device is intended for use in high frequency inverters.

### ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter	Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage	60	V
I <sub>F(RMS)</sub>	RMS forward current	30	A
I <sub>F(AV)</sub>	Average forward current	T <sub>c</sub> = 140°C δ = 0.5 Per diode: 10 Per device: 20	A
I <sub>FSM</sub>	Surge non repetitive forward current	t <sub>p</sub> = 10 ms Sinusoidal	220 A
I <sub>RRM</sub>	Repetitive peak reverse current	t <sub>p</sub> = 2 μs square F = 1kHz	1 A
T <sub>stg</sub>	Storage temperature range	- 65 to + 175	°C
T <sub>j</sub>	Maximum operating junction temperature *	150	°C
dV/dt	Critical rate of rise of reverse voltage	10000	V/μs

\* :  $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$  thermal runaway condition for a diode on its own heatsink

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### THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.6	$^{\circ}\text{C/W}$
		Total	0.85	
$R_{th(c)}$		Coupling	0.1	$^{\circ}\text{C/W}$

When the diodes 1 and 2 are used simultaneously :  
 $\Delta T_j(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$

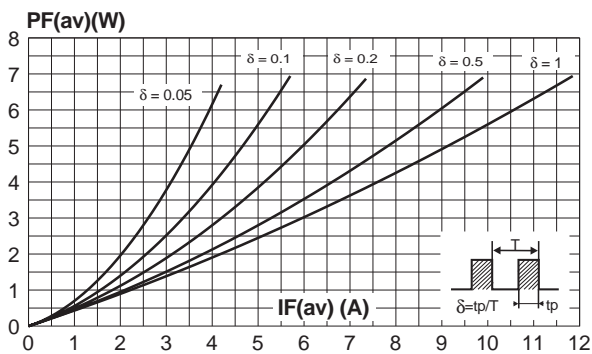
### STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
$I_R^*$	Reverse leakage current	$T_j = 25^{\circ}\text{C}$	$V_R = V_{RRM}$			350	$\mu\text{A}$
		$T_j = 125^{\circ}\text{C}$			65	95	mA
$V_F^*$	Forward voltage drop	$T_j = 25^{\circ}\text{C}$	$I_F = 10\text{ A}$			0.6	V
		$T_j = 125^{\circ}\text{C}$	$I_F = 10\text{ A}$		0.48	0.56	
		$T_j = 25^{\circ}\text{C}$	$I_F = 20\text{ A}$			0.74	
		$T_j = 125^{\circ}\text{C}$	$I_F = 20\text{ A}$		0.62	0.7	

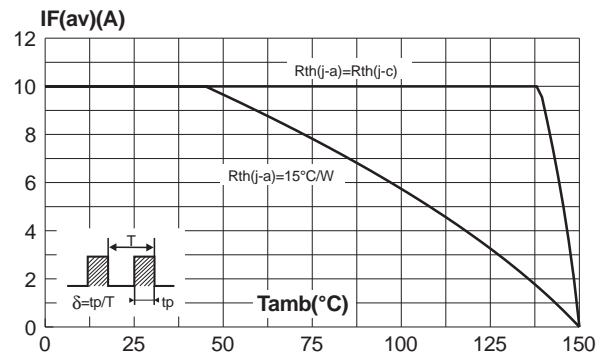
Pulse test : \*  $t_p = 380\ \mu\text{s}$ ,  $\delta < 2\%$

To evaluate the conduction losses use the following equation :  
 $P = 0.42 \times I_{F(AV)} + 0.014 \times I_{F(RMS)}^2$

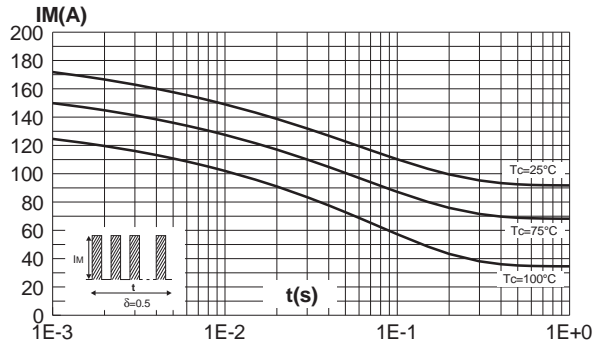
**Fig. 1:** Average forward power dissipation versus average forward current (per diode).



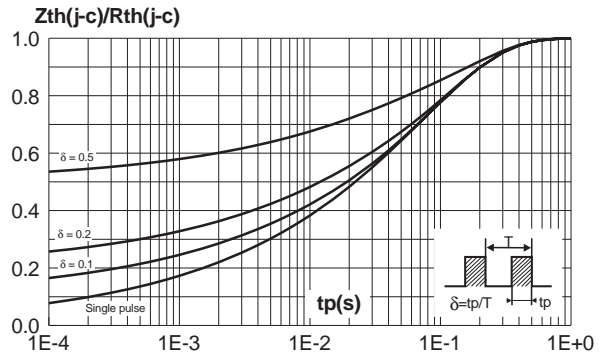
**Fig. 2:** Average current versus ambient temperature ( $\delta=0.5$ ) (per diode).



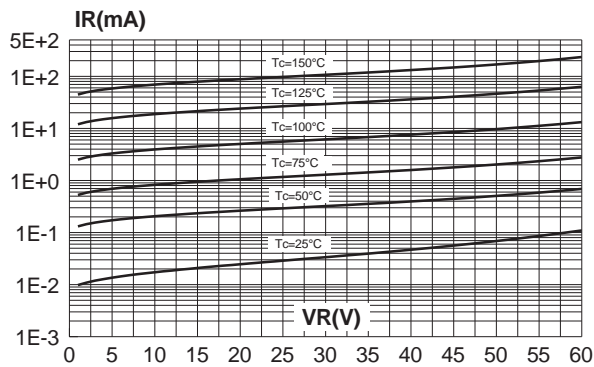
**Fig. 3:** Non repetitive surge peak forward current versus overload duration (maximum values, per diode).



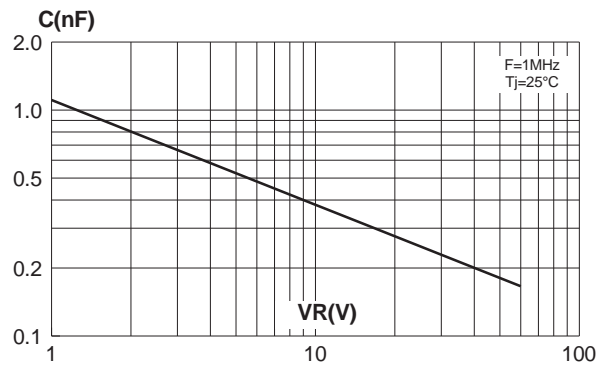
**Fig. 4:** Relative variation of thermal transient impedance junction to case versus pulse duration.



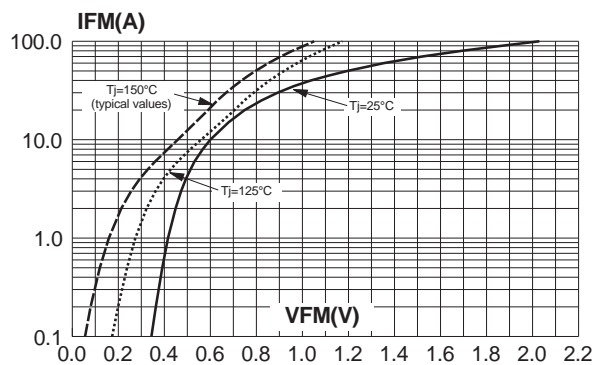
**Fig. 5:** Reverse leakage current versus reverse voltage applied (typical values, per diode).



**Fig. 6:** Junction capacitance versus reverse voltage applied (typical values, per diode).

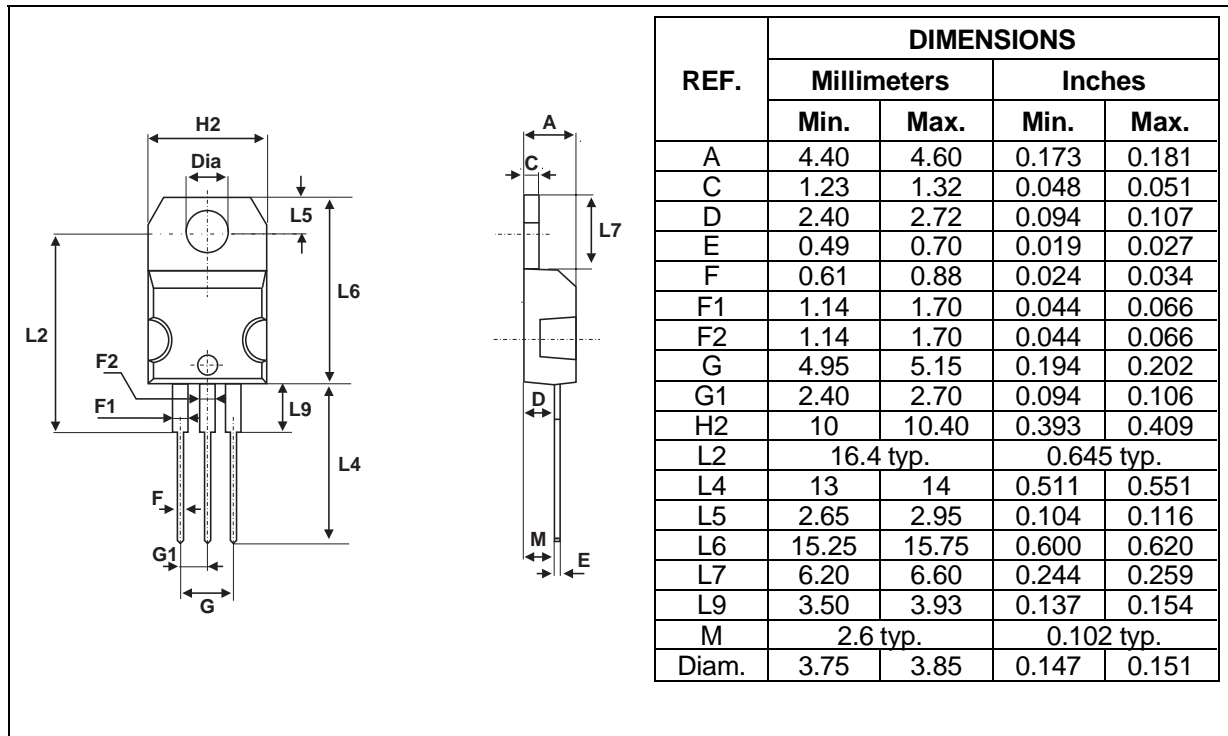


**Fig. 7:** Forward voltage drop versus forward current (maximum values, per diode).



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## PACKAGE MECHANICAL DATA TO-220AB



- Cooling method: C
- Recommended torque value: 0.55 m.N
- Maximum torque value: 0.70 m.N

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS20L60CT	STPS20L60CT	TO-220AB	2.2g	50	Tube
STPS20L60CT	STPS20L60CT	TO-220AB	2.2g	1000	Bulk

- Epoxy meets UL94,V0

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