

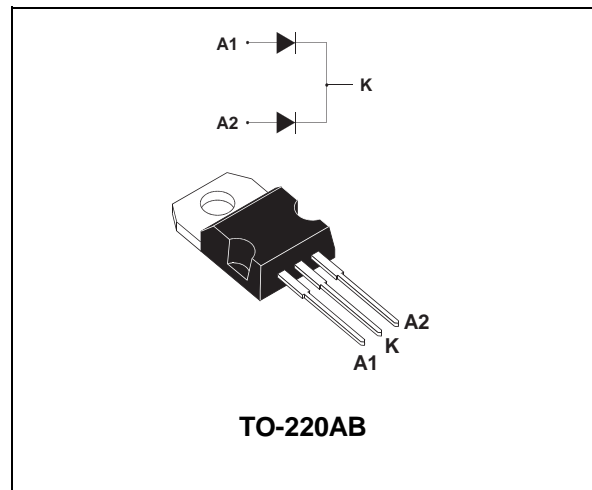
POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

I_{F(AV)}	2 x 10 A
V_{RRM}	60 V
T_{j (max)}	150 °C
V_{F (max)}	0.56 V

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 _{RRM}	Repetitive peak reverse voltage		60	V
I _{F(RMS)}	RMS forward current		30	A
I _{F(AV)}	Average forward current	T _c = 140°C δ = 0.5	Per diode 20 Per device	A
I _{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	220	A
I _{RRM}	Repetitive peak reverse current	tp = 2 μs square F = 1kHz	1	A
T _{stg}	Storage temperature range		- 65 to + 175	°C
T _j	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

STPS20L60CT

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	μA
		$T_j = 125^{\circ}\text{C}$			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).

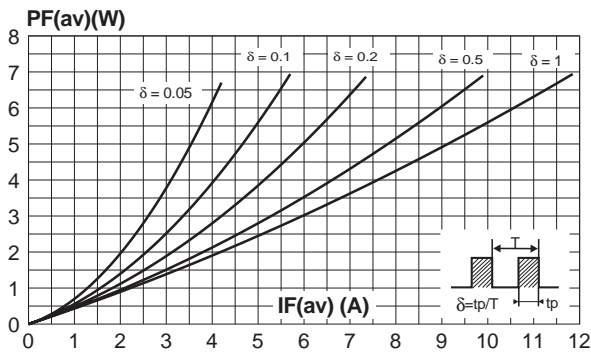


Fig. 2: Average current versus ambient temperature ($\delta=0.5$) (per diode).

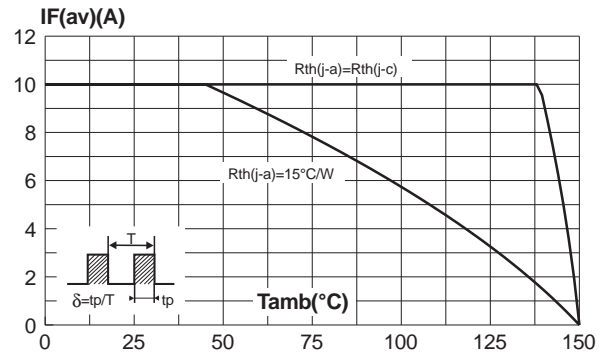


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

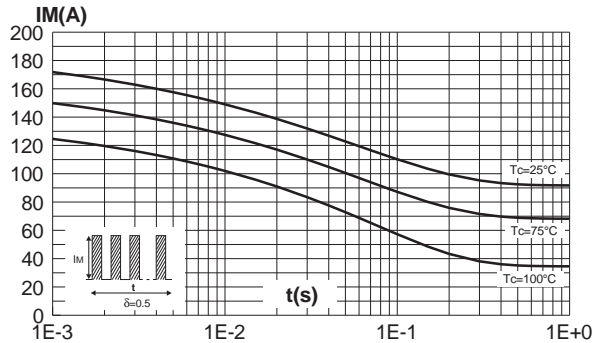


Fig. 4: Relative variation of thermal transient impedance junction to case versus pulse duration.

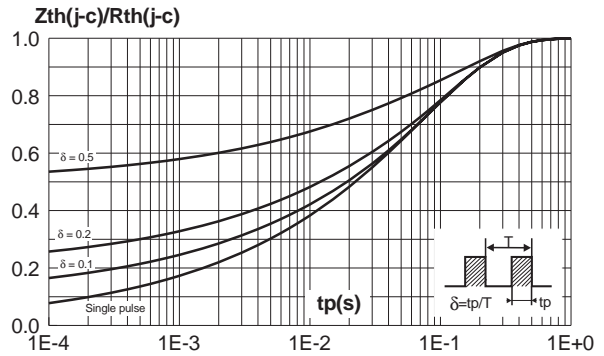


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values, per diode).

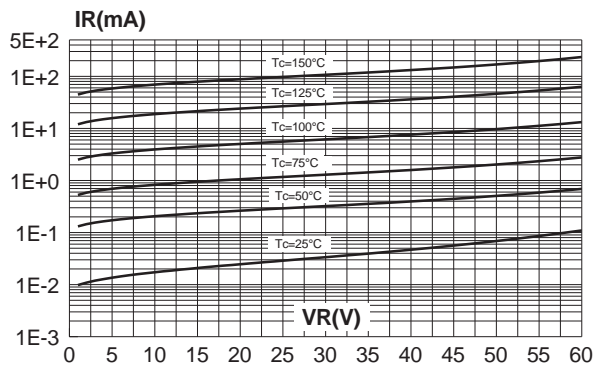


Fig. 6: Junction capacitance versus reverse voltage applied (typical values, per diode).

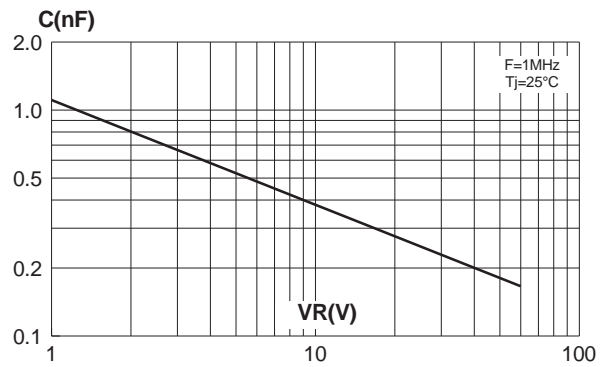
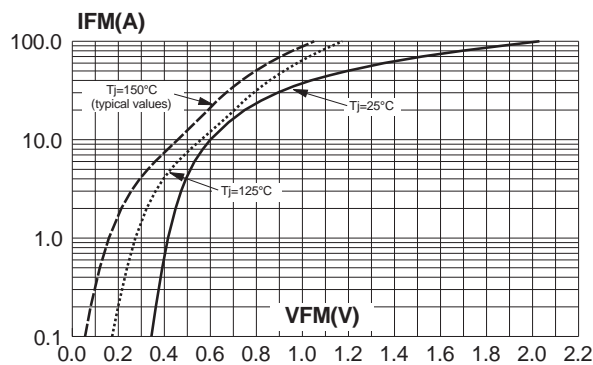
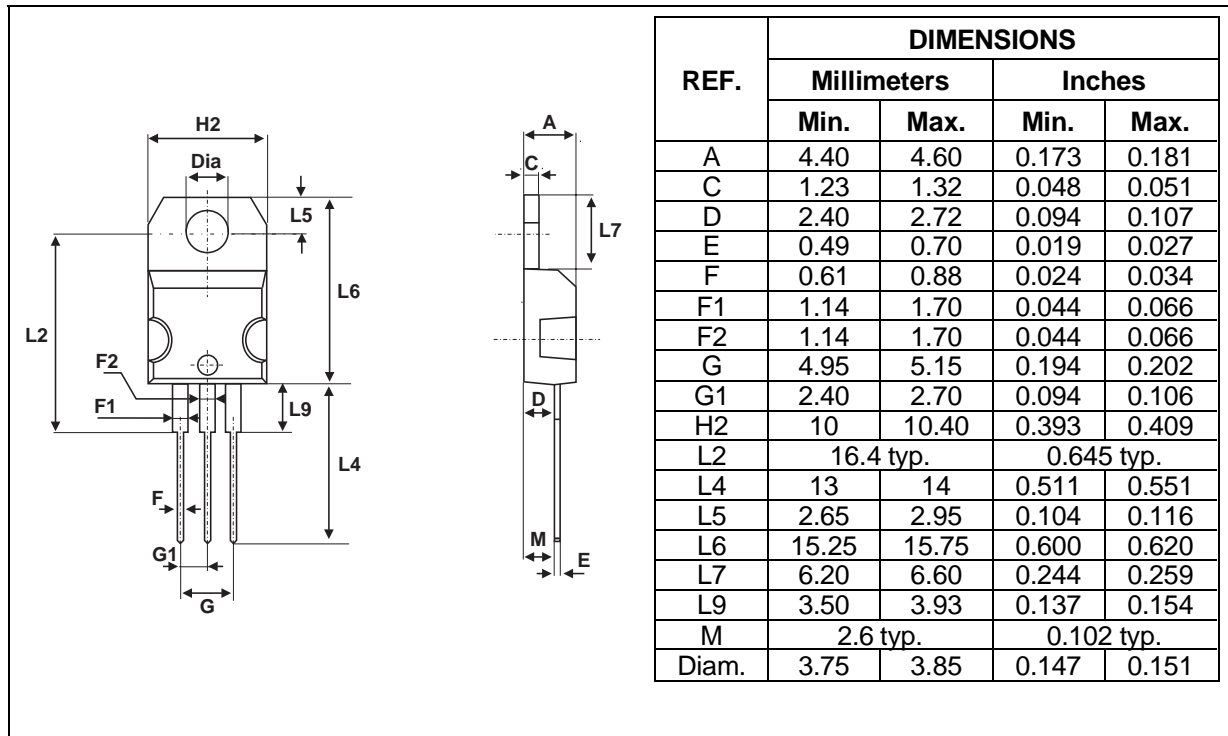


Fig. 7: Forward voltage drop versus forward current (maximum values, per diode).



STPS20L60CT

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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