



STPS20L60CT

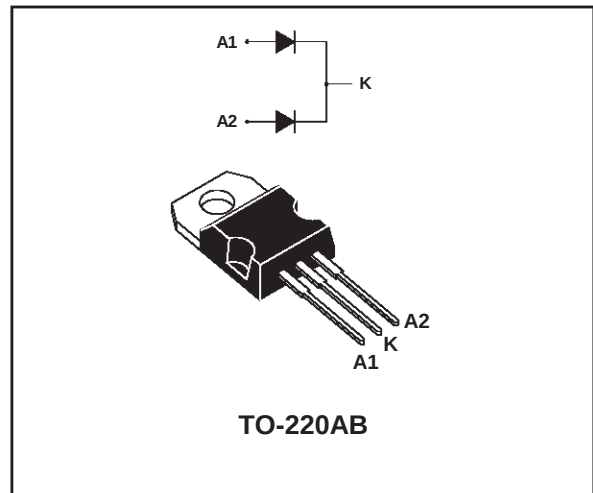
POWER SCHOTTKY RECTIFIER

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 Per device	10 20	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

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THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode Total	1.6 0.85	°C/W
$R_{th(c)}$		Coupling	0.1	°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 : * $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$

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

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

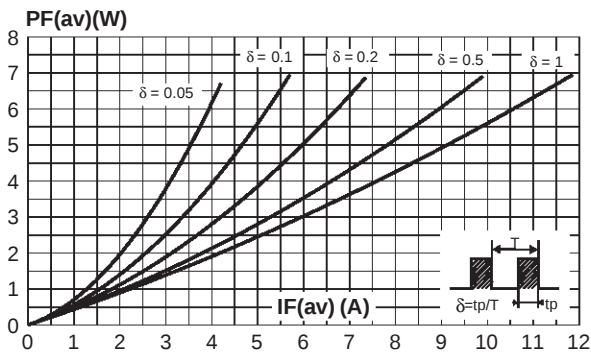


Fig. 2: Average current versus ambient temperature ($\delta=0.5$) (per diode).

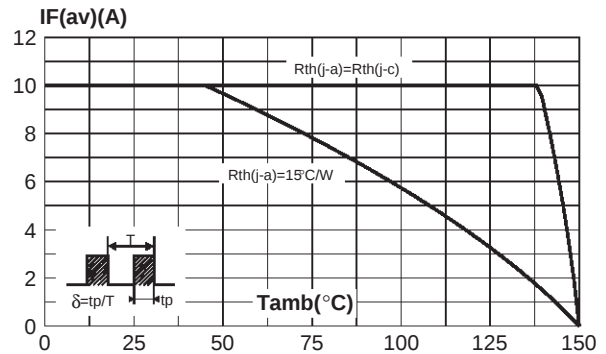


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

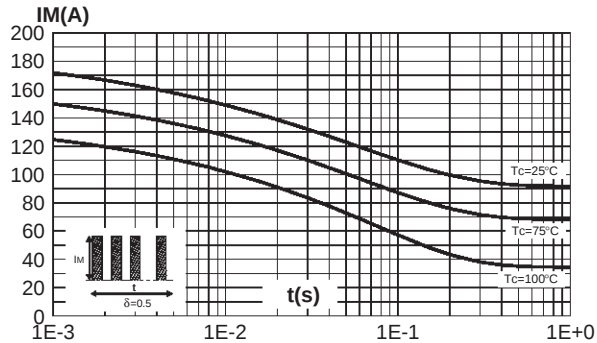


Fig. 4: Relative variation of thermal transient impedance junction to case versus pulse duration.

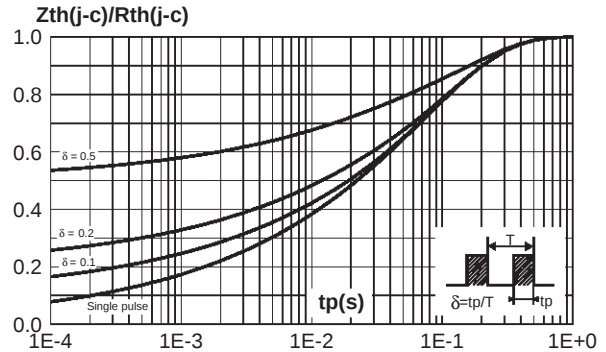


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values, per diode).

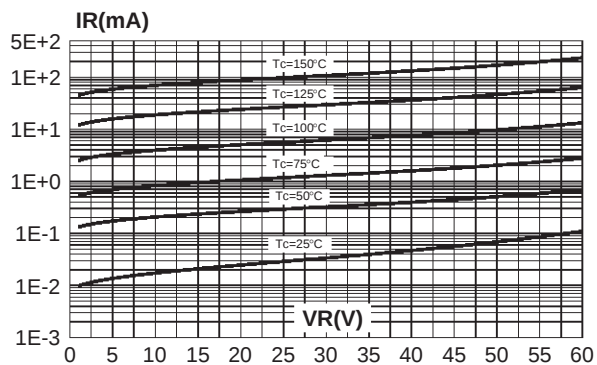


Fig. 6: Junction capacitance versus reverse voltage applied (typical values, per diode).

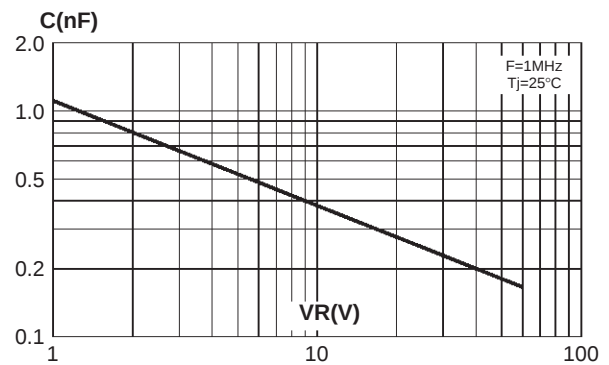
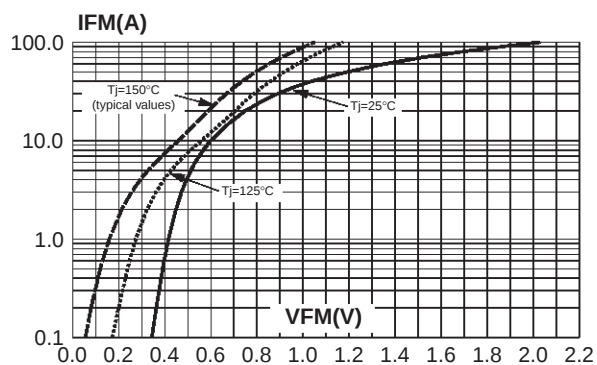
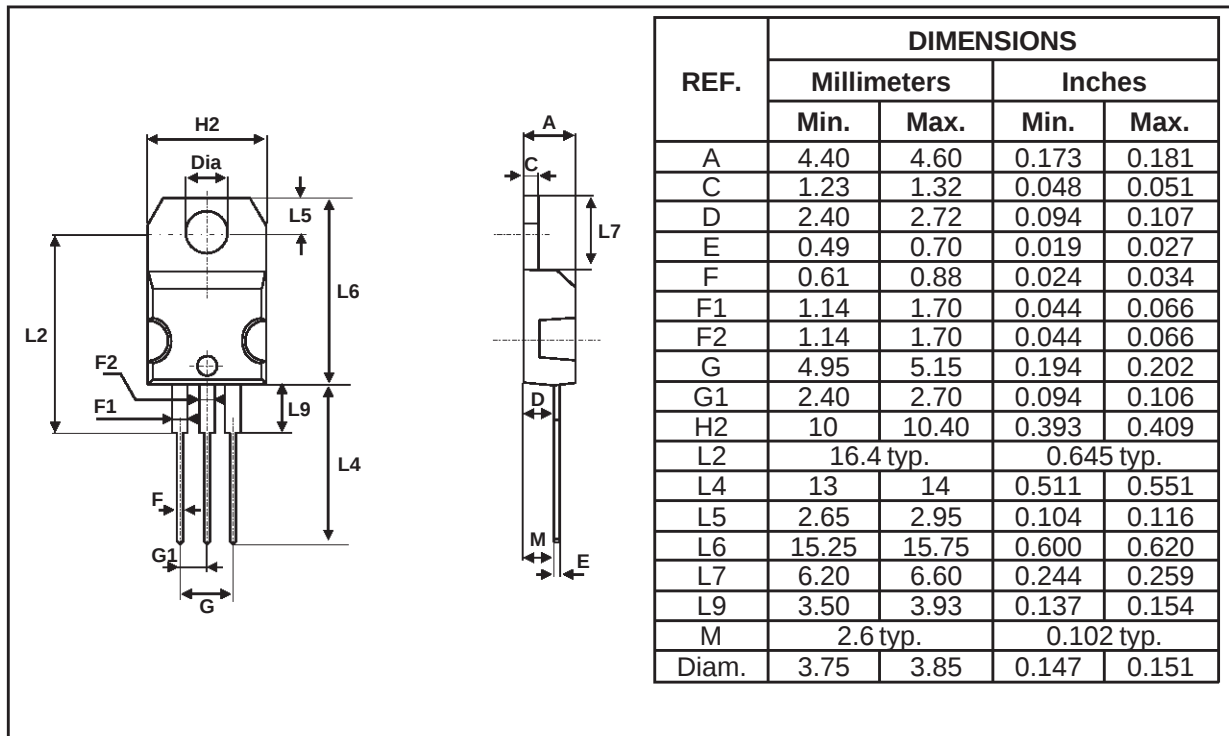


Fig. 7: Forward voltage drop versus forward current (maximum values, per diode).



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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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