

LOW DROP POWER SCHOTTKY RECTIFIER

PRELIMINARY DATASHEET

MAIN PRODUCT CHARACTERISTICS

I_{F(AV)}	2 x 40 A
V_{RRM}	30 V
T_{j (max)}	150 °C
V_{F (max)}	0.38 V

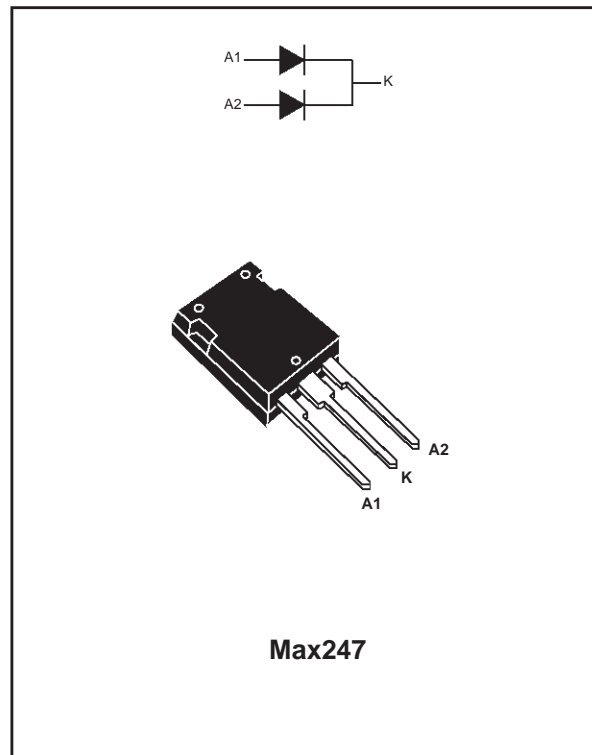
FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- EXTREMELY FAST SWITCHING
- LOW FORWARD VOLTAGE DROP
- LOW THERMAL RESISTANCE

DESCRIPTION

Dual center tap Schottky rectifier suited for CAD computers and servers.

Packaged in MAX247, this device is intended for use in low voltage, high frequency switching power supplies, free wheeling and polarity protection applications.



ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter		Value	Unit	
V _{RRM}	Repetitive peak reverse voltage		30	V	
I _{F(RMS)}	RMS forward current		50	A	
I _{F(AV)}	Average forward current	T _c = 135°C	Per diode	40	A
		δ = 0.5	Per device	80	
I _{FSM}	Surge non repetitive forward current	tp = 10 ms sinusoidal	400	A	
I _{RRM}	Repetitive peak reverse current	tp = 2 μs F = 1kHz square	2	A	
T _{stg}	Storage temperature range		- 65 to + 150	°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

STPS80L30CY

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	Junction to case	Per diode	0.7	°C/W
		Total	0.5	
R _{th(c)}		Coupling	0.3	

When the diodes 1 and 2 are used simultaneously :

$$\Delta T_j(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

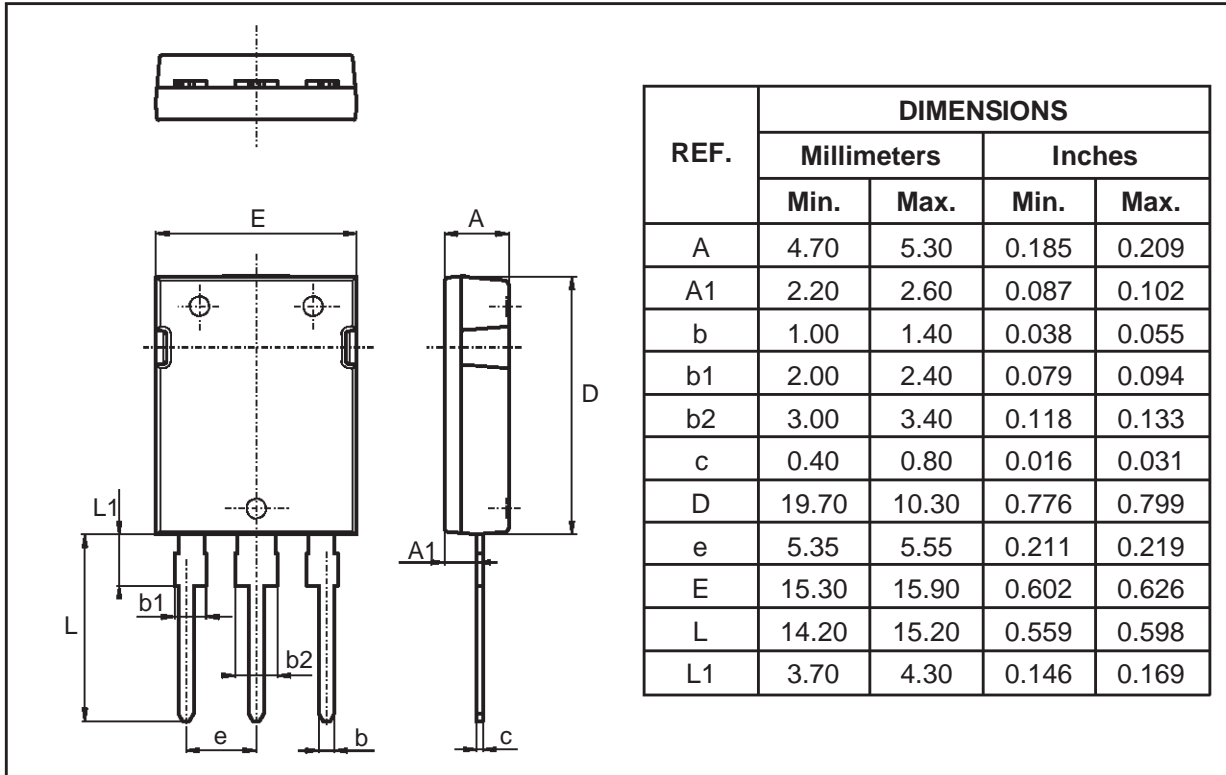
STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}			4	mA
		T _j = 125°C			0.7	1.5	A
V _F *	Forward voltage drop	T _j = 25°C	I _F = 40 A			0.48	V
		T _j = 125°C	I _F = 40 A		0.34	0.38	
		T _j = 25°C	I _F = 80 A			0.58	
		T _j = 125°C	I _F = 80 A		0.48	0.53	

Pulse test : * t_p = 380 μs, δ < 2%

To evaluate the maximum conduction losses use the following equation :

$$P = 0.23 \times I_{F(AV)} + 0.0037 \times I_{F(RMS)}^2$$

PACKAGE MECHANICAL DATA
 MAX247


Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS80L30CY	STPS80L30CY	MAX247	4.4g	30	Tube

- Epoxy meets UL94,V0
- Cooling method: C

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