

## POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	3 A
$V_{RRM}$	60 V
$T_j(max)$	150°C
$V_F(max)$	0.61 V

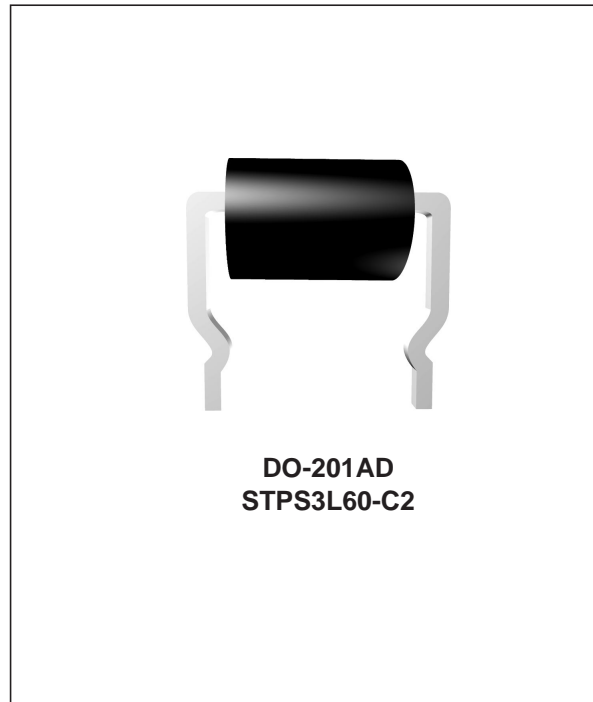
### FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW THERMAL RESISTANCE
- AVALANCHE CAPABILITY SPECIFIED

### DESCRIPTION

Axial Power Schottky rectifier suited for Switch Mode Power Supplies and high frequency DC to DC converters. Packaged in DO-201AD, this device is intended for use in low voltage, high frequency inverters and small battery chargers.

For applications where there are space constraints, e.g Telecom battery charger, this product is also offered in DO-15 (STPS3L60Q).



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit	
$V_{RRM}$	Repetitive peak reverse voltage	60	V	
$I_{F(RMS)}$	RMS forward current	10	A	
$I_{F(AV)}$	Average forward current	$T_L = 105^\circ\text{C} \quad \delta = 0.5$	3	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ Sinusoidal	100	A
$P_{ARM}$	Repetitive peak avalanche power	$t_p = 1 \mu\text{s} \quad T_j = 25^\circ\text{C}$	2000	W
$T_{stg}$	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/ $\mu\text{s}$	

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

## STPS3L60-C2

### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-a)}$	Junction to ambient	Lead length = 10 mm	80	°C/W
$R_{th(j-l)}$	Junction to leads	Lead length = 10 mm	20	°C/W

### STATIC ELECTRICAL CHARACTERISTICS

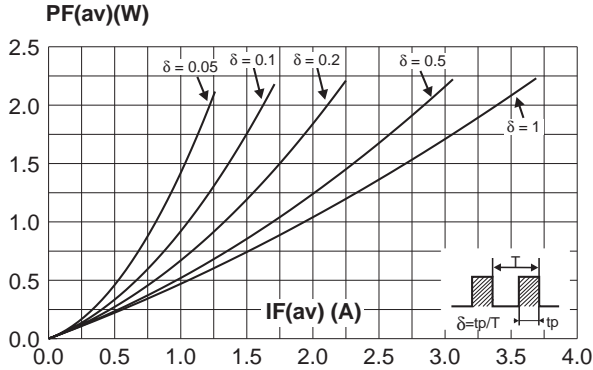
Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
$I_R^*$	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			150	$\mu\text{A}$
		$T_j = 100^\circ\text{C}$				15	mA
$V_F^*$	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 3\text{ A}$			0.62	V
		$T_j = 100^\circ\text{C}$	$I_F = 3\text{ A}$			0.61	

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

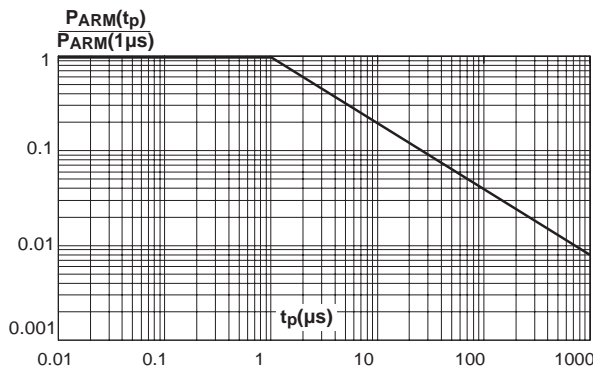
To evaluate the maximum conduction losses use the following equation:

$$P = 0.44 \times I_{F(AV)} + 0.05 \times I_{F(RMS)}^2$$

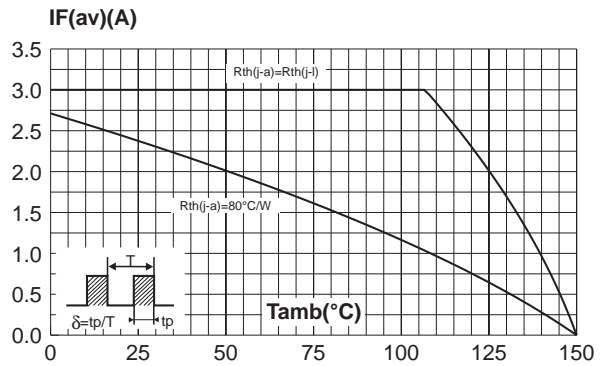
**Fig. 1:** Average forward power dissipation versus average forward current.



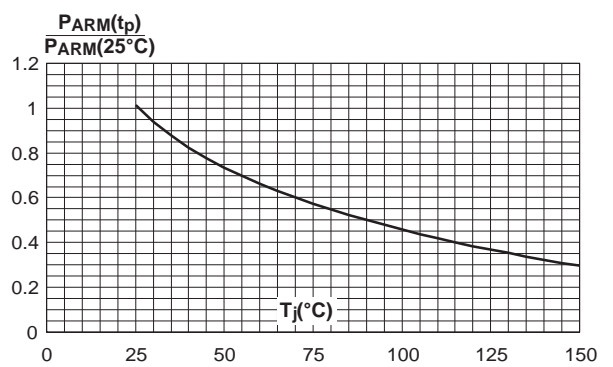
**Fig. 3:** Normalized avalanche power derating versus pulse duration.



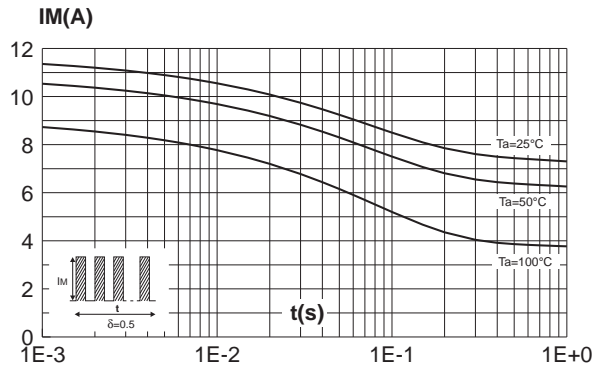
**Fig. 2:** Average forward current versus ambient temperature ( $\delta = 0.5$ ).



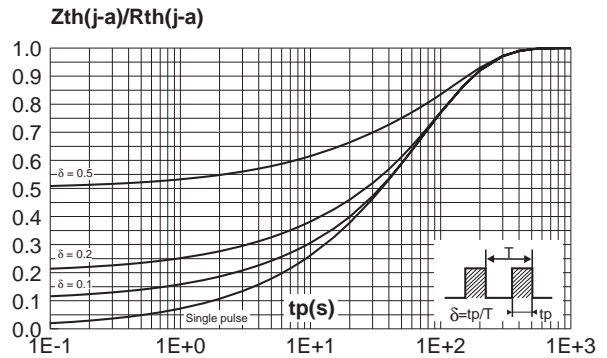
**Fig. 4:** Normalized avalanche power derating versus junction temperature.



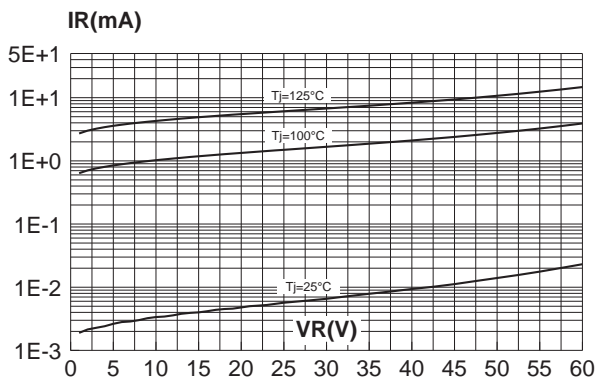
**Fig. 5:** Non repetitive surge peak forward current versus overload duration (maximum values).



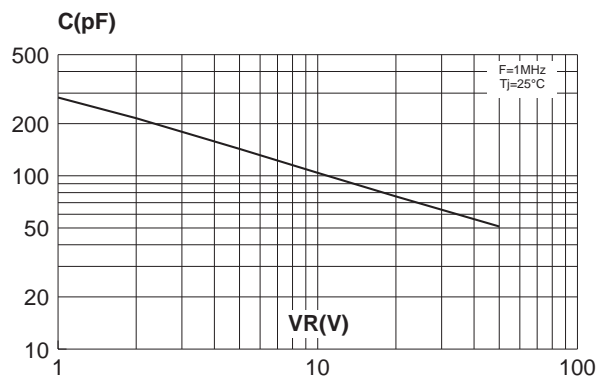
**Fig. 6:** Relative variation of thermal impedance junction to ambient versus pulse duration.



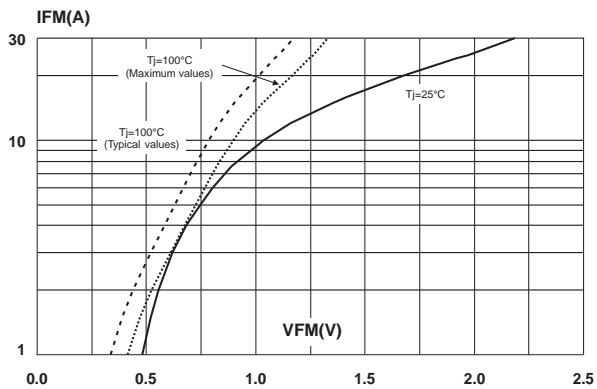
**Fig. 7:** Reverse leakage current versus reverse voltage applied (typical values).



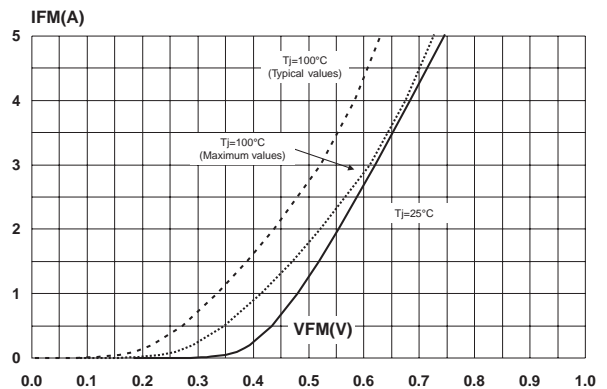
**Fig. 8:** Junction capacitance versus reverse voltage applied (typical values).



**Fig. 9-1:** Forward voltage drop versus forward current (high level, maximum values).

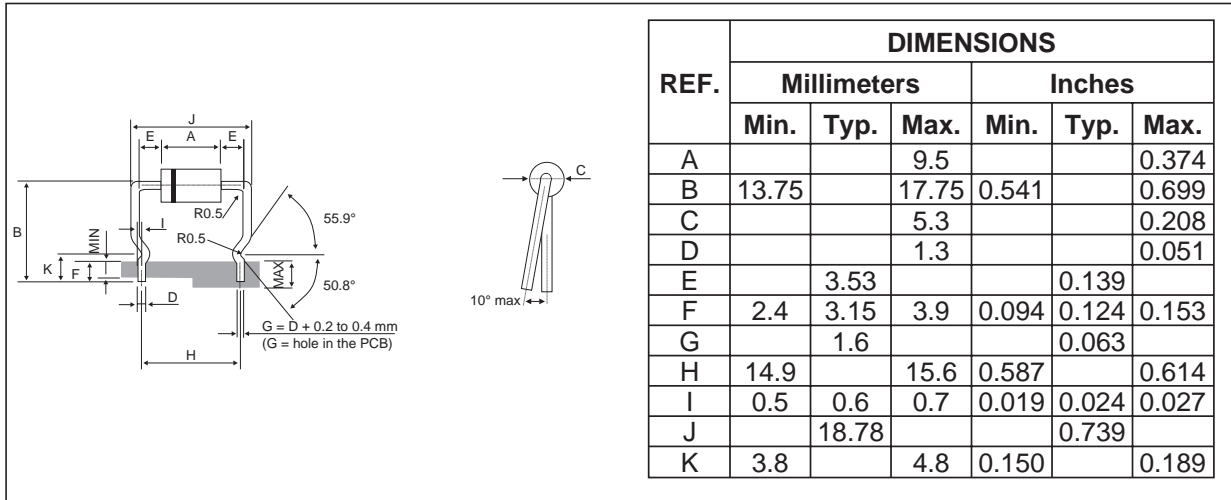


**Fig. 9-2:** Forward voltage drop versus forward current (low level, maximum values).



# STPS3L60-C2

## PACKAGE MECHANICAL DATA DO-201AD plastic



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS3L60-C2	STPS3L60	DO-201AD	1.12g	500	Ammopack

- WHITE BAND INDICATES CATHODE
- EPOXY MEETS UL94,V0

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