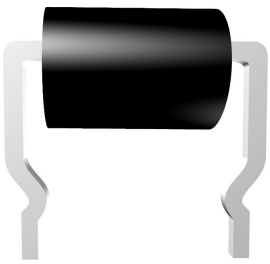
STPS3L60-C2

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

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



DO-201AD
STPS3L60-C2

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°C δ = 0.5	3	A
I_{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	100	A
P_{ARM}	Repetitive peak avalanche power	tp = 1µs Tj = 25°C	2000	W
T_{stg}	Storage temperature range		- 65 to + 150	°C
Tj	Maximum operating junction temperature *		150	°C
dV/dt	Critical rate of rise of reverse voltage		10000	V/µs

* : $\frac{dPtot}{dTj} < \frac{1}{Rth(j-a)}$ thermal runaway condition for a diode on its own heatsink

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	Tj = 25°C	$V_R = V_{RRM}$			150	µA
		Tj = 100°C				15	mA
V_F *	Forward voltage drop	Tj = 25°C	I_F = 3 A			0.62	V
		Tj = 100°C	I_F = 3 A			0.61	

Pulse test : * tp = 380 µs, δ < 2%

To evaluate the maximum conduction losses use the following equation:

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

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

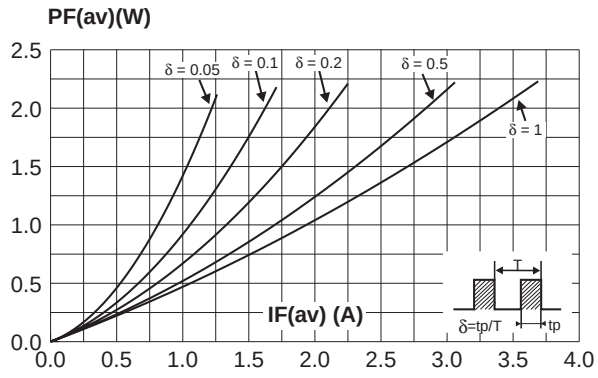


Fig. 2: Average forward current versus ambient temperature (δ = 0.5).

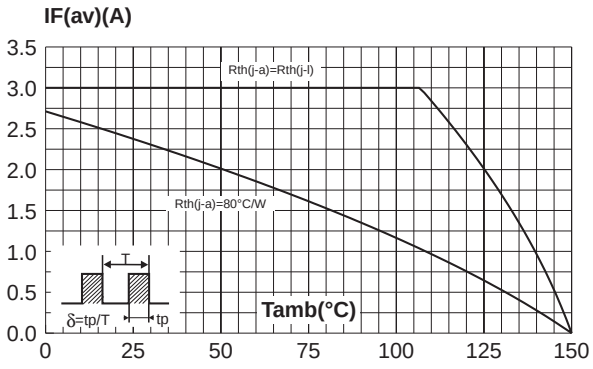


Fig. 3: Normalized avalanche power derating versus pulse duration.

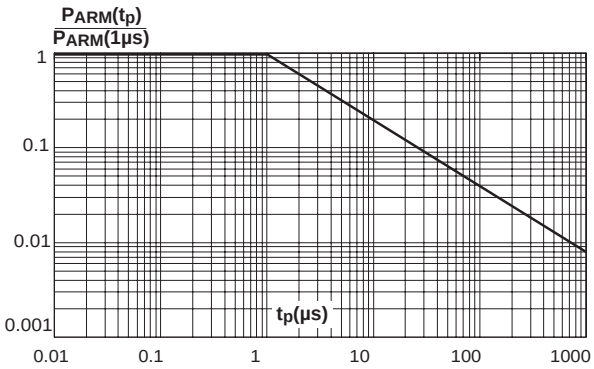


Fig. 4: Normalized avalanche power derating versus junction temperature.

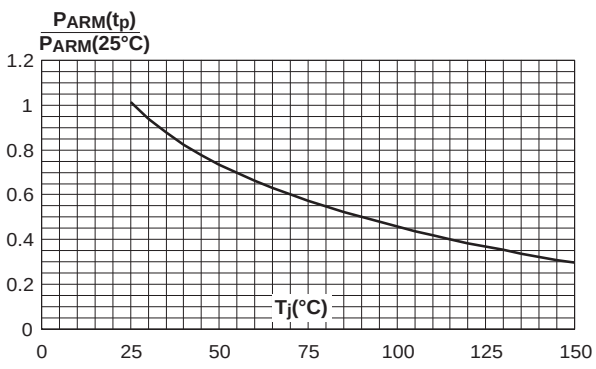


Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values).

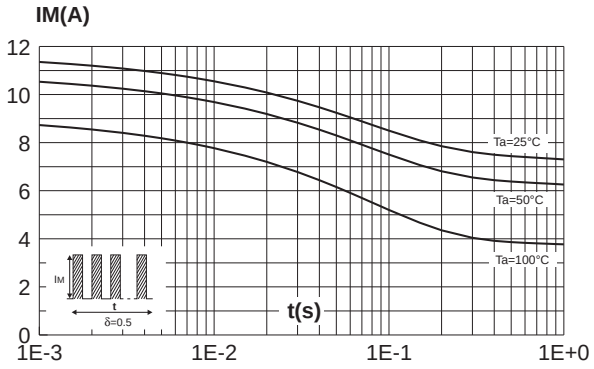


Fig. 6: Relative variation of thermal impedance junction to ambient versus pulse duration.

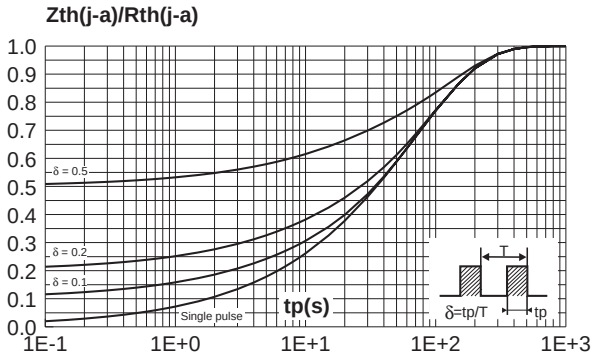


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values).

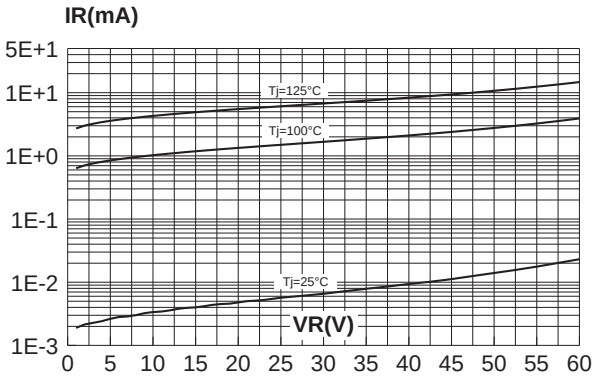


Fig. 8: Junction capacitance versus reverse voltage applied (typical values).

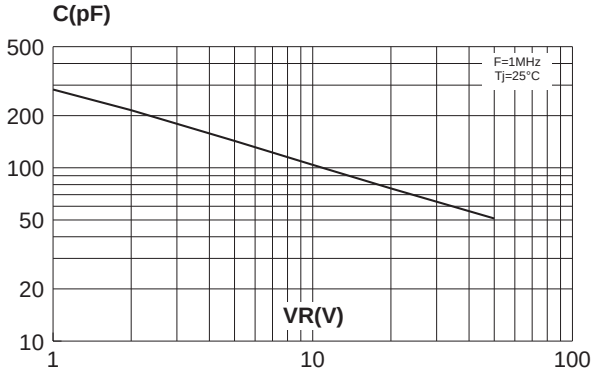


Fig. 9-1: Forward voltage drop versus forward current (high level, maximum values).

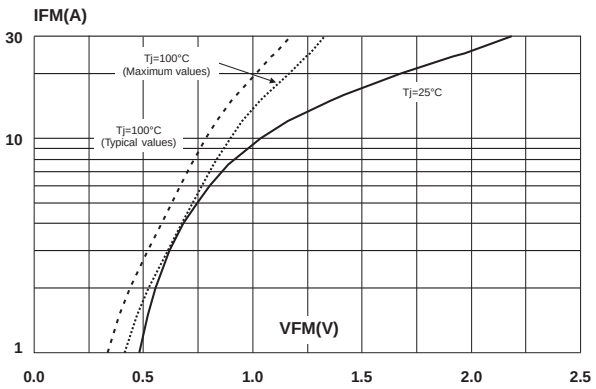
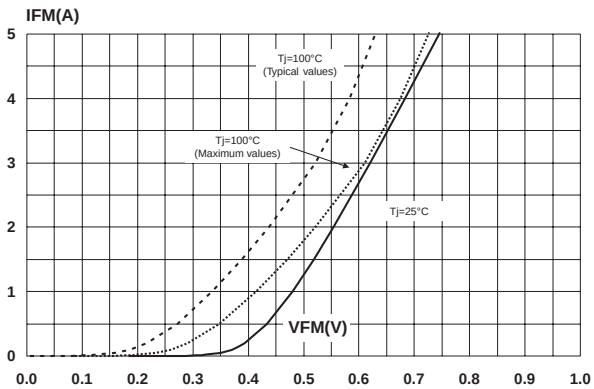
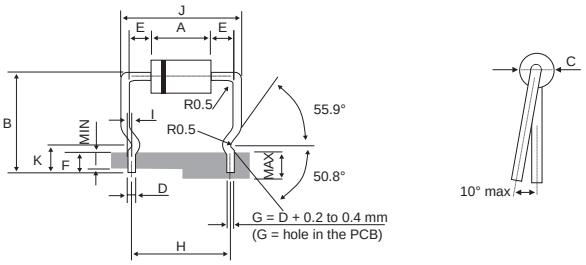


Fig. 9-2: Forward voltage drop versus forward current (low level, maximum values).



PACKAGE MECHANICAL DATA

DO-201AD plastic



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			9.5			0.374
B	13.75		17.75	0.541		0.699
C			5.3			0.208
D			1.3			0.051
E		3.53			0.139	
F	2.4	3.15	3.9	0.094	0.124	0.153
G		1.6			0.063	
H	14.9		15.6	0.587		0.614
I	0.5	0.6	0.7	0.019	0.024	0.027
J		18.78			0.739	
K	3.8		4.8	0.150		0.189

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