STPS1L60

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	1 A
V_{RRM}	60 V
Tj (max)	150°C
V_F (max)	0.56 V

DO-41

FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP

DESCRIPTION

Axial Power Schottky rectifier suited for Switch Mode Power Supplies and high frequency DC to DC converters. Packaged in DO-41, this device is intended for use in low voltage, high frequency inverters and small battery chargers.

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	Tc = 120°C δ = 0.5	1	A
I_{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	40	A
T_{stg}	Storage temperature range		- 65 to + 150	°C
Tj	Maximum 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	100	°C/W
$R_{th(j-l)}$	Junction to leads	Lead length = 10 mm	45	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	Tj = 25°C	V_R = 60V			50	µA
		Tj = 100°C				5	mA
V_F *	Forward voltage drop	Tj = 25°C	I_F = 1 A			0.57	V
		Tj = 100°C				0.56	

Pulse test : * tp = 380 µs, δ < 2%

To evaluate the maximum conduction losses use the following equation:

$P = 0.44 \times I_{F(AV)} + 0.12 \times I_F{}^2{}_{(RMS)}$

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

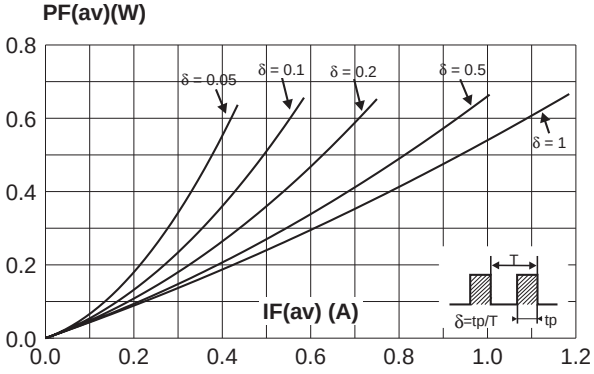


Fig. 2: Average forward current versus ambient temperature (δ = 0.5).

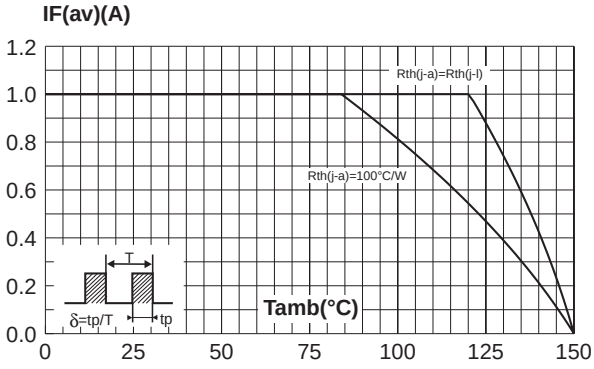


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values).

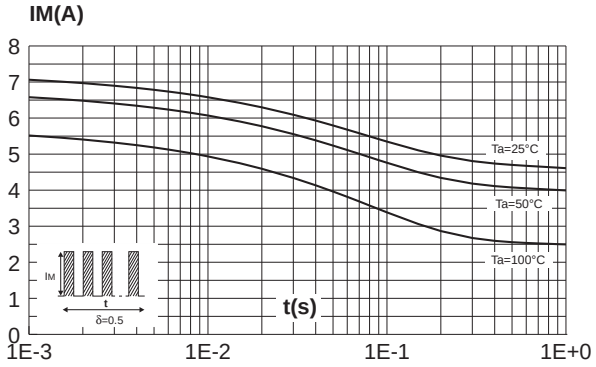


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

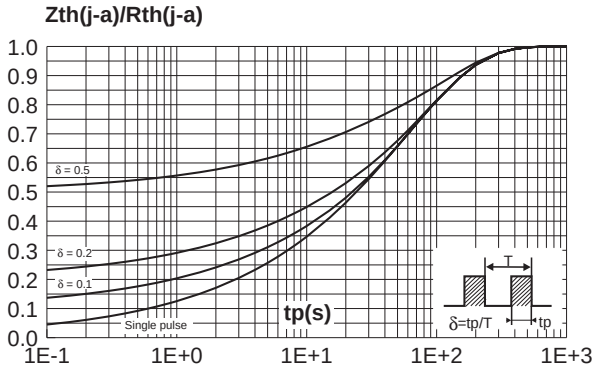


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values).

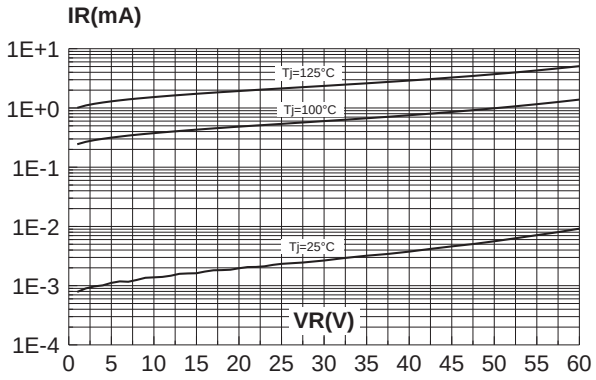


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

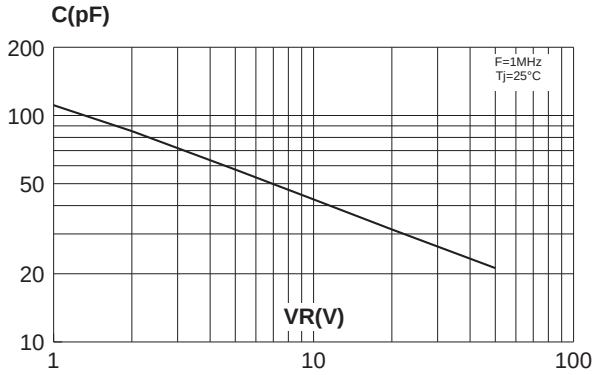


Fig. 7-1: Forward voltage drop versus forward current (low level, maximum values).

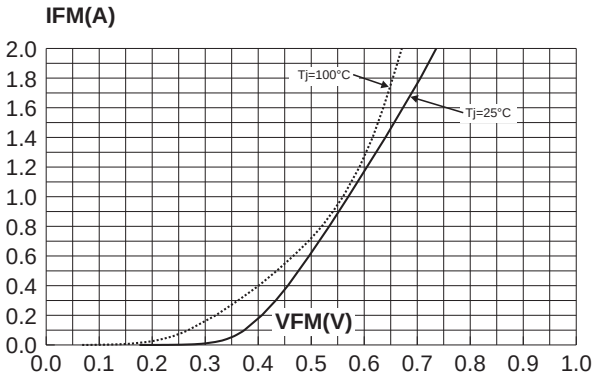
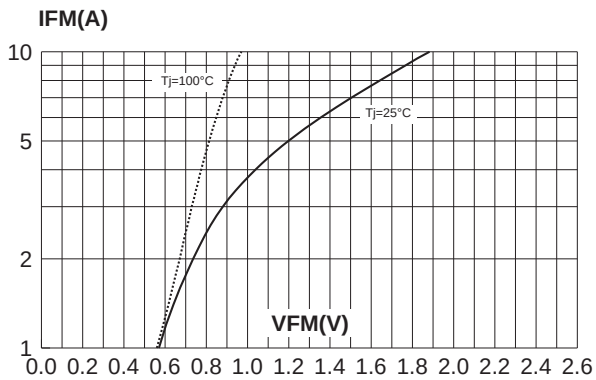
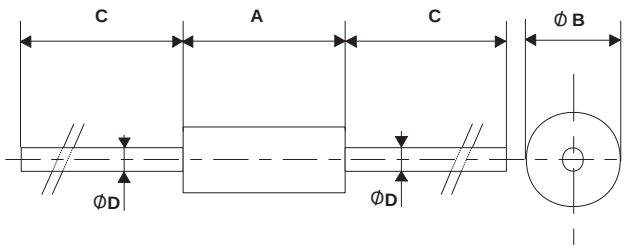


Fig. 7-2: Forward voltage drop versus forward current (high level, maximum values).



PACKAGE MECHANICAL DATA

DO-41 plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.07	5.20	0.160	0.205
B	2.04	2.71	0.080	0.107
C	28		1.102	

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS1L60	Partnumber cathode ring	DO-41	0.34g	2000	Ammopack
STPS1L60	Partnumber cathode ring	DO-41	0.34g	5000	Tape and reel

- Epoxy meets UL94,V0

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