

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

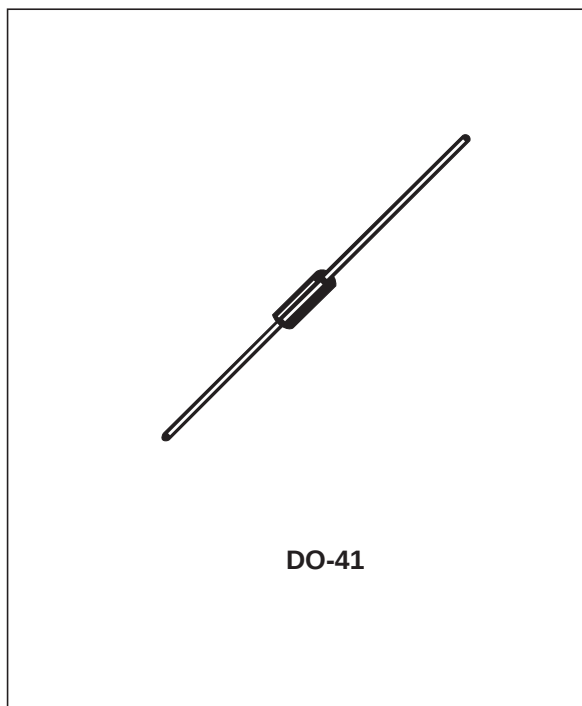
$I_{F(AV)}$	1 A
V_{RRM}	60 V
T_j (max)	150°C
V_F (max)	0.56 V

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	$T_c = 120^\circ\text{C} \quad \delta = 0.5$	1	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms} \quad \text{Sinusoidal}$	40	A
T_{stg}	Storage temperature range		- 65 to + 150	°C
T_j	Maximum 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

STPS1L60

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	$T_j = 25^\circ\text{C}$	$V_R = 60\text{V}$			50	μA
		$T_j = 100^\circ\text{C}$				5	mA
V_F^*	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 1\text{A}$			0.57	V
		$T_j = 100^\circ\text{C}$				0.56	

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

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.

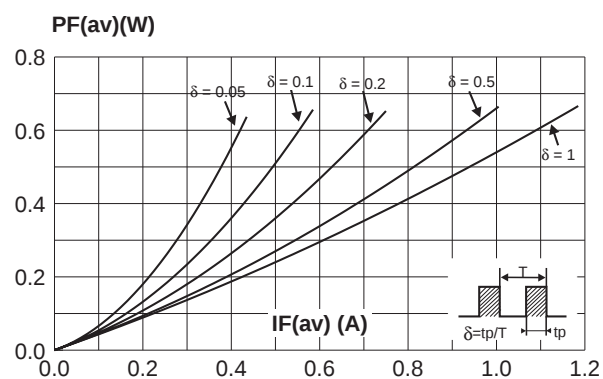


Fig. 2: Average forward current versus ambient temperature ($\delta = 0.5$).

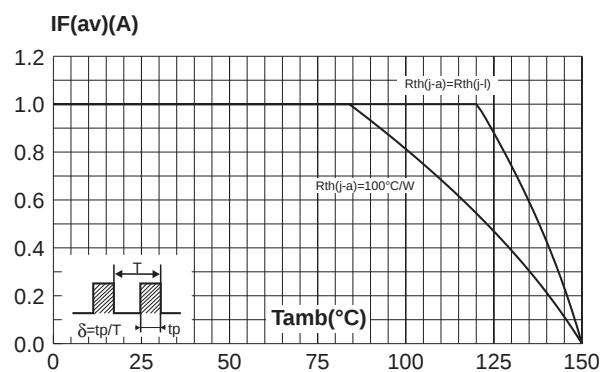


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values).

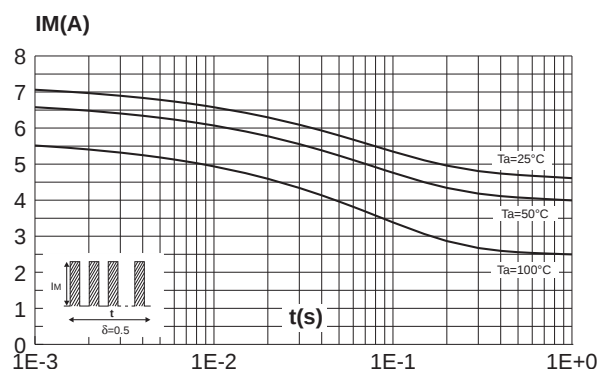


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

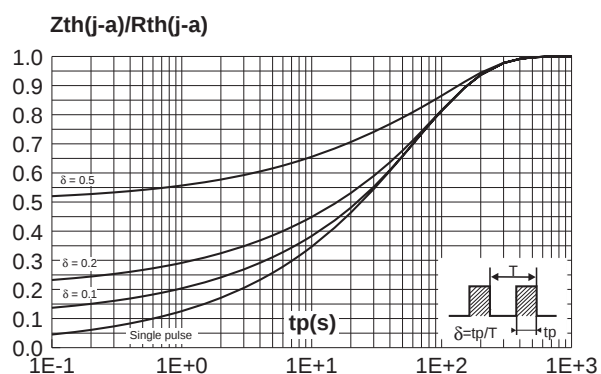


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values).

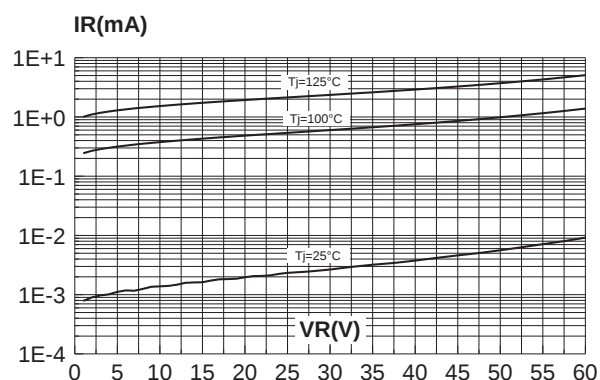


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

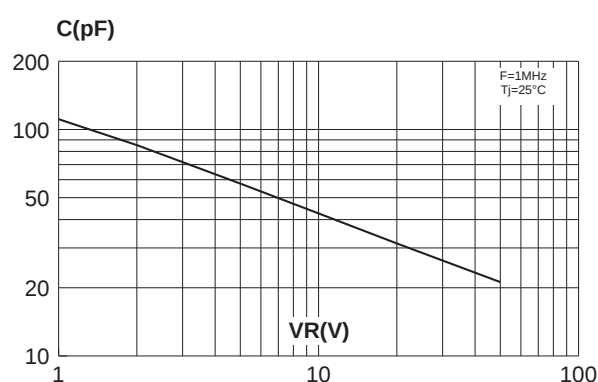


Fig. 7-1: Forward voltage drop versus forward current (low level, maximum values).

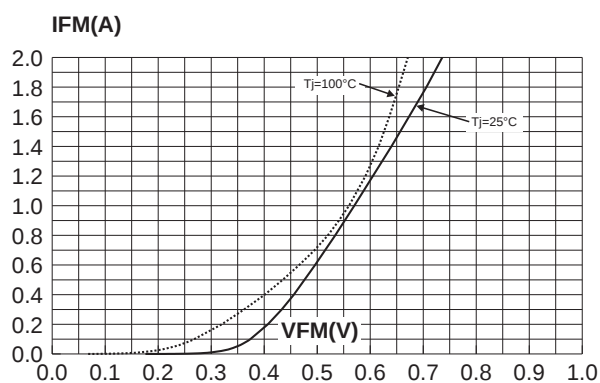
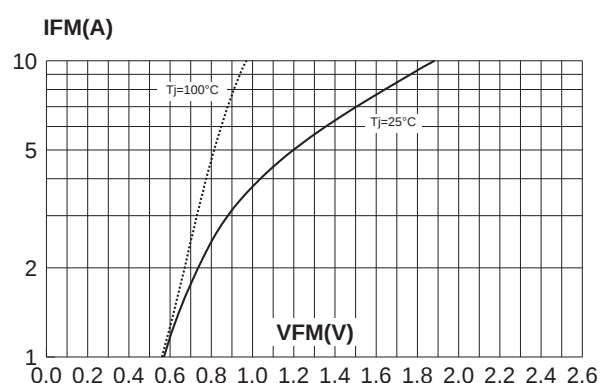


Fig. 7-2: Forward voltage drop versus forward current (high level, maximum values).



PACKAGE MECHANICAL DATA

DO-41 plastic

The diagram illustrates the mechanical dimensions of the STPS1L60 DO-41 plastic package. It features a side view and a cross-sectional view. The side view shows a central rectangular body of length A, flanked by two leads of length C. The diameter of the leads is labeled as ØD. The cross-sectional view shows the circular profile of the package with a diameter of ØB. A dashed line in the side view indicates the center of the package.

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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