



STPS3045G

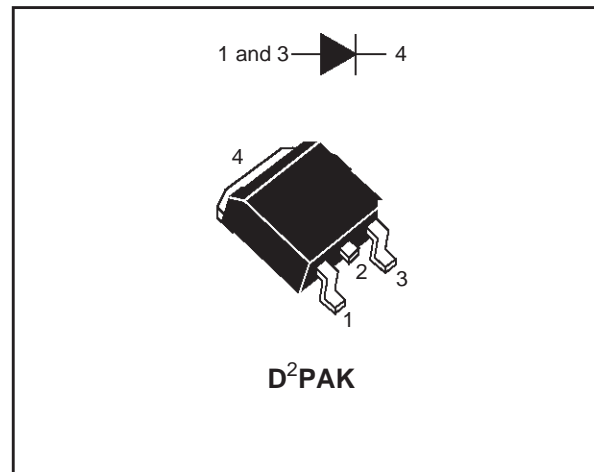
POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	30 A
V_{RRM}	45 V
V_F	0.63 V

FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH DISSIPATION MINIATURE PACKAGE
- SMD PACKAGE



DESCRIPTION

Dual schottky rectifier suited for switchmode power supply and high frequency DC to DC converters.

Packaged in a surface mount package D²PAK, this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	
V_{RRM}	Repetitive peak reverse voltage	45	V	
$I_{F(RMS)}$	RMS forward current (all pins connected)	52	A	
$I_{F(AV)}$	Average forward current	$T_c = 125^\circ\text{C}$ $\delta = 0.5$	30	A
I_{FSM}	Surge non repetitive forward current (all pins connected)	$t_p = 10 \text{ ms}$ Sinusoidal	200	A
I_{RRM}	Repetitive peak reverse current	$t_p = 2 \mu\text{s}$ $F = 1 \text{ kHz}$	1	A
Tstg	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	

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THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case	1	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			500	μA
		$T_j = 125^\circ\text{C}$			20	80	mA
V_F^{**}	Forward voltage drop	$T_j = 125^\circ\text{C}$	$I_F = 60\text{ A}$		0.68	0.78	V
		$T_j = 125^\circ\text{C}$	$I_F = 30\text{ A}$		0.53	0.63	
		$T_j = 25^\circ\text{C}$	$I_F = 60\text{ A}$			0.84	

Pulse test : * $t_p = 5\text{ ms}$, $\delta < 2\%$
 ** $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$

To evaluate the conduction losses use the following equation :
 $P = 0.48 \times I_{F(AV)} + 0.005 I_{F(RMS)}^2$

PIN OUT configuration in D²PAK:

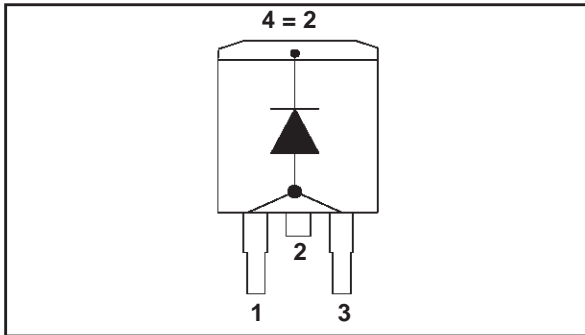


Fig. 1: Average forward power dissipation versus average forward current.

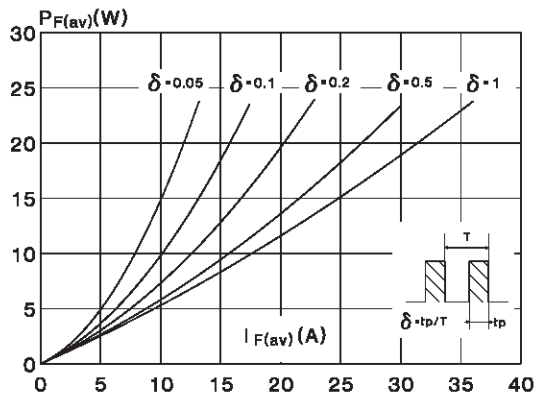


Fig. 2: Average current versus ambient temperature ($\delta=0.5$).

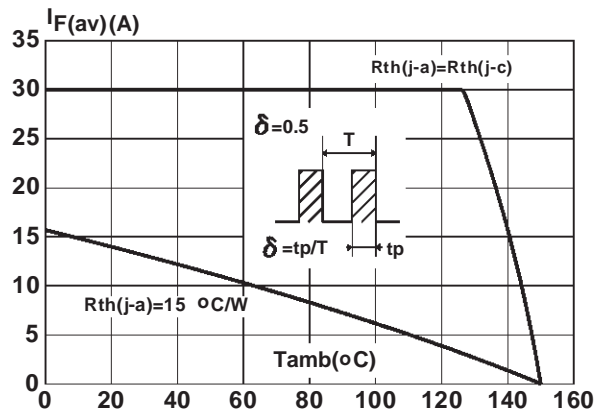


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values).

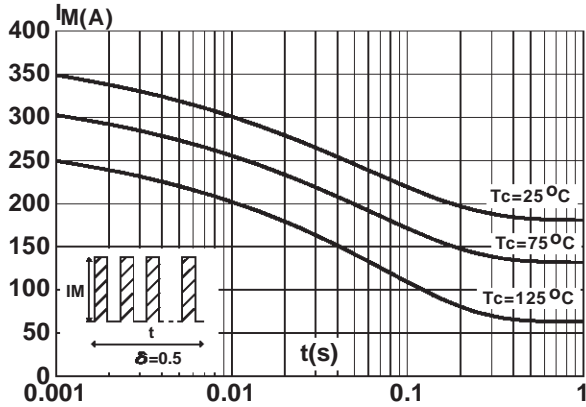


Fig. 4: Relative variation of thermal transient impedance junction to case versus pulse duration.

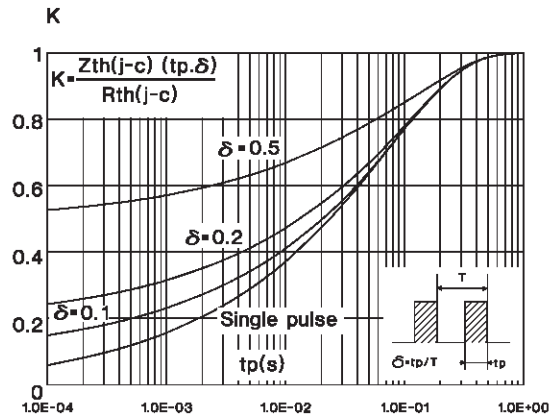


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values)

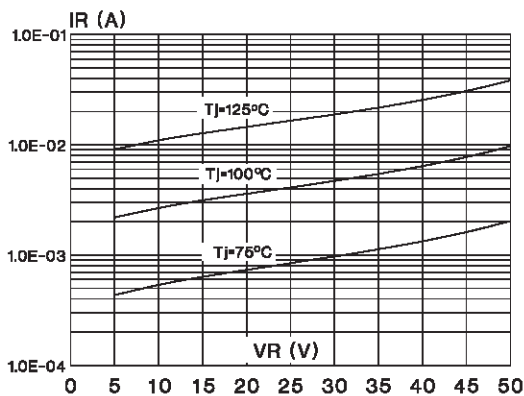


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

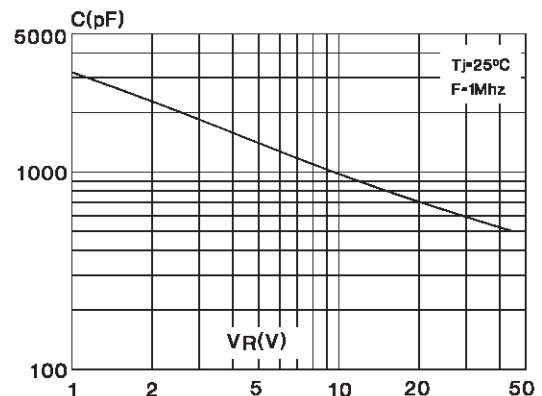
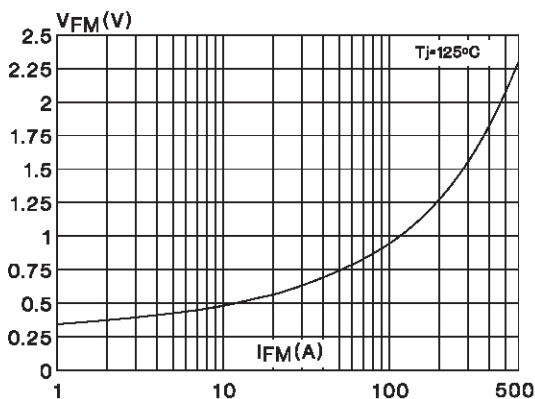
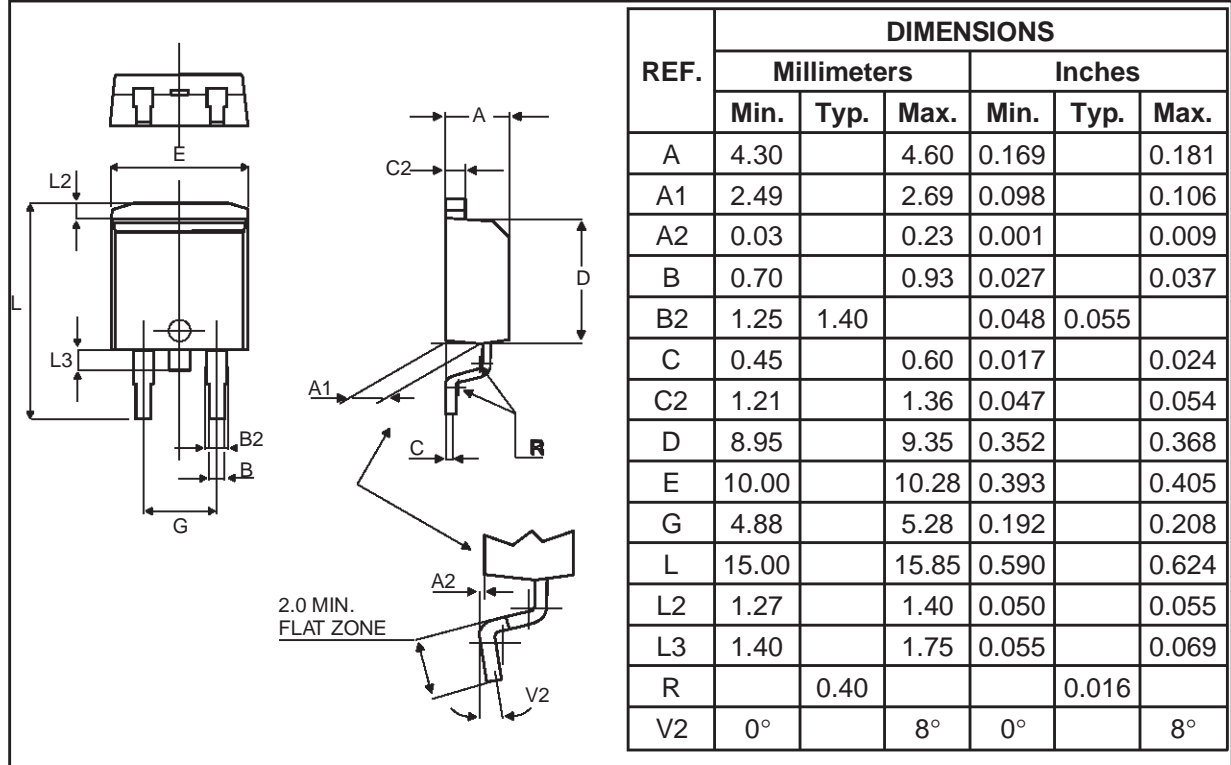


Fig. 7: Forward voltage drop versus forward current (maximum values).

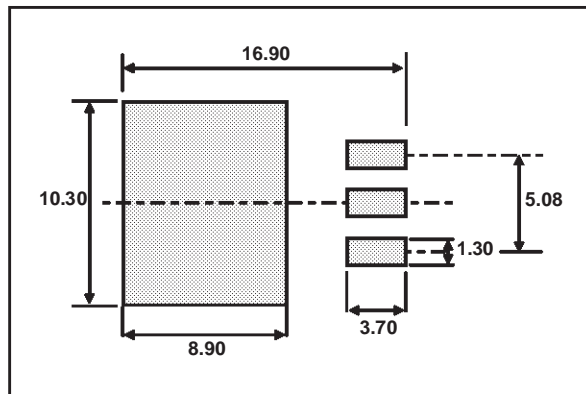


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PACKAGE MECHANICAL DATA D²PAK



FOOTPRINT DIMENSIONS (in millimeters)



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