

POWER SCHOTTKY RECTIFIER
MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	7.5 A
V_{RRM}	45 V
V_F	0.57 V

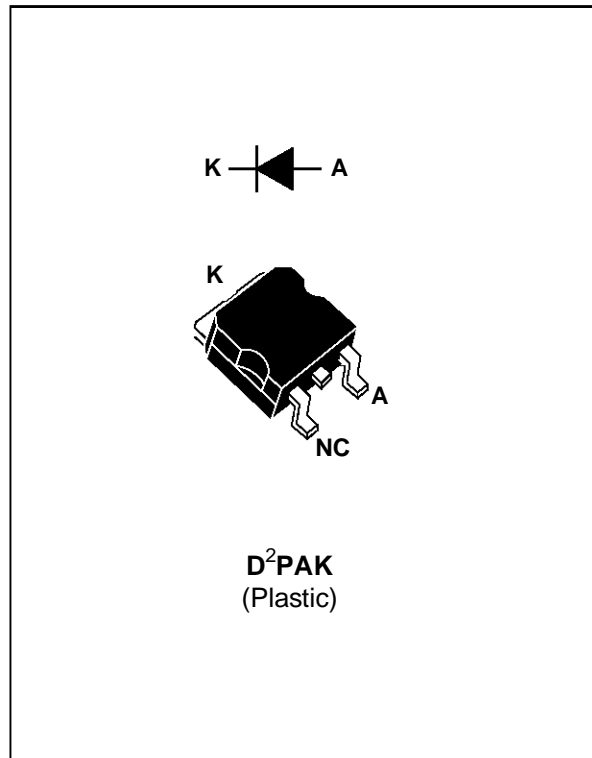
FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH AVALANCHE CAPABILITY
- SMD

DESCRIPTION

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

Packaged in D²PAK, this surface mount 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		20	A
$I_{F(AV)}$	Average Forward Current	$T_c = 135^\circ\text{C}$ $\delta = 0.5$	7.5	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10 \text{ ms}$ Sinusoidal	150	A
I_{RRM}	Repetitive Peak Reverse Current	$t_p = 2 \mu\text{s}$ $F = 1\text{KHz}$	1	A
T_{stg} T_j	Storage and Junction Temperature Range		- 65 to + 150	$^\circ\text{C}$
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/ μs

STPS745G

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{TH(j-c)}$	Junction to Case Thermal Resistance		$^{\circ}C/W$

STATIC ELECTRICAL CHARACTERISTICS (Per diode)

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit		
I_R^*	Reverse leakage Current	$T_j = 25^{\circ}C$			100	μA		
		$T_j = 125^{\circ}C$			15	mA		
V_F^{**}	Forward Voltage drop	$T_j = 125^{\circ}C$	$I_F = 15 A$			0.72	V	
		$T_j = 125^{\circ}C$				$I_F = 7.5 A$		0.57
		$T_j = 25^{\circ}C$				$I_F = 15 A$		0.84

Pulse test : * $t_p = 5 ms$, duty cycle $< 2\%$
 ** $t_p = 380 \mu s$, duty cycle $< 2\%$

To evaluate the conduction losses use the following equation :
 $P = 0.42 \times I_{F(AV)} + 0.020 I_{F(RMS)}^2$

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

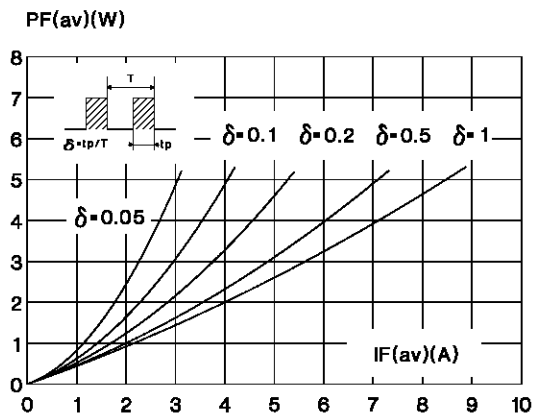


Fig. 2 : Average current versus ambient temperature. ($\delta : 0.5$)

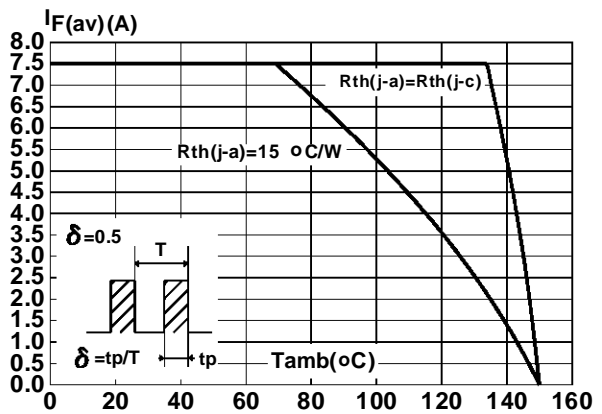


Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values)

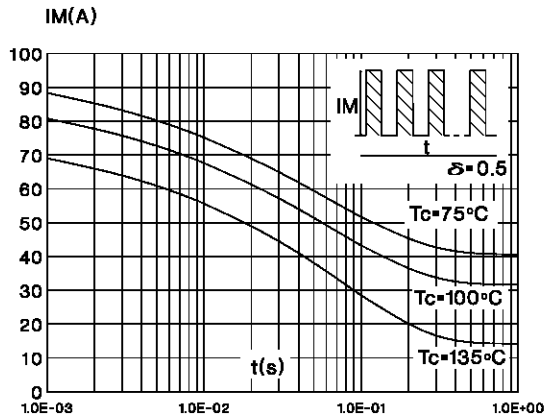


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

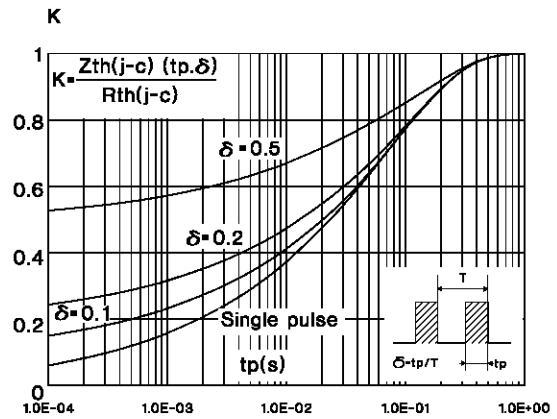


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values)

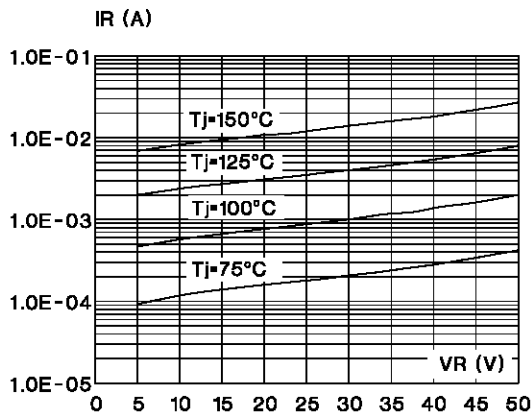


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values)

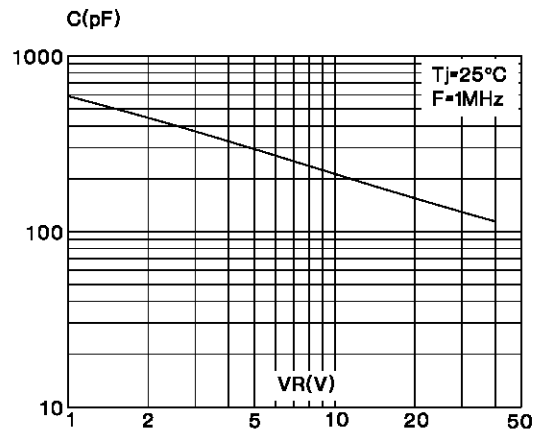
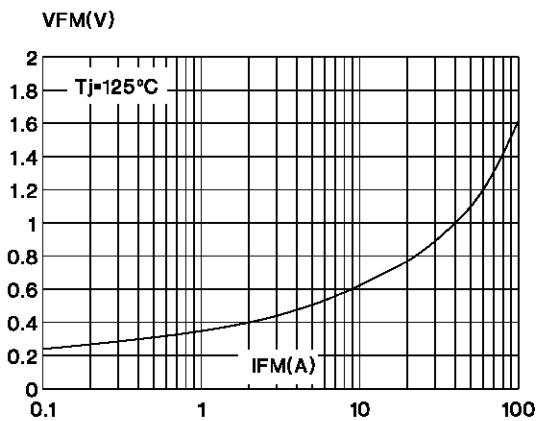
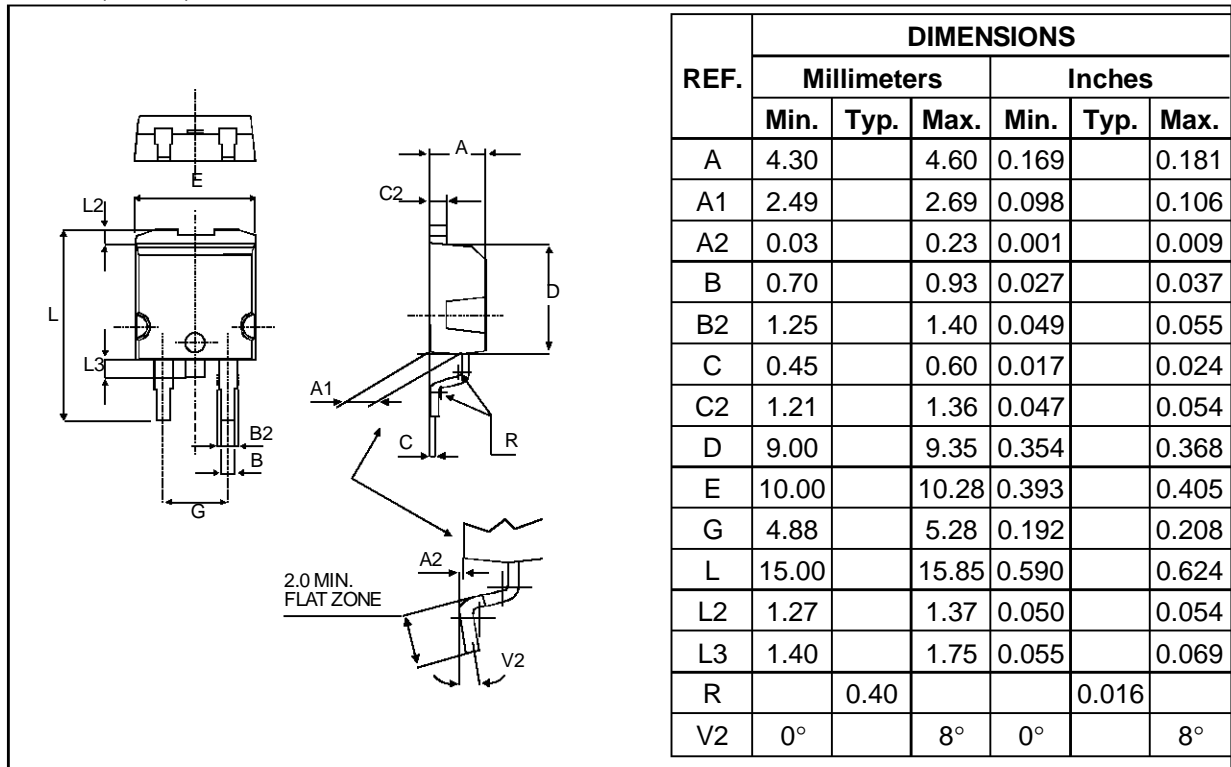


Fig. 7 : Forward voltage drop versus forward current. (Maximum values)



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PACKAGE MECHANICAL DATA D²PAK (Plastic)



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