

STPS3045CG

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

I _{F(AV)}	2*15 A
VRRM	45 V
V _F (max)	0.57 V

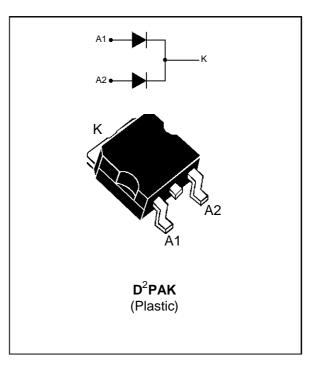
FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- EXTREMELY FAST SWITCHING
- LOW FORWARD VOLTAGE DROP
- HIGH AVALANCHE CAPABILITY
- LOW THERMAL RESISTANCE
- SMD PACKAGE

DESCRIPTION

Dual center tap Schottky rectifier suited for Switched Mode Power Supplies and high frequency DC to DC converters.

Packaged in D^2PAK , this device is especially intended for use as a Rectifier at the secondary of SMPS or DC/DC units.



ABSOLUTE RATING (limiting values)

Symbol	Parameter			Value	Unit
Vrrm	Repetitive Peak Reverse Voltage		Per diode	45	V
I _{F(AV)}	Average Forward Current	Tcase = 135°C δ = 0.5	Per diode Per device	15 30	A
I _{FSM}	Surge Non Repetitive Forward Current	tp = 10 ms Sinusoidal Per diode		220	A
Irrm	Repetitive Peak Reverse Current			1	A
Tstg	Storage Temperature Range			- 65 to + 150	°C
Tj	Max. Junction Temperature			150	°C
dV/dt	Critical Rate of Rise of Reverse Voltage			1000	V/µs

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THERMAL RESISTANCES

Symbol	Parameter	Value	Unit	
Rth (j-c)	Junction to Case Thermal Resistance	Per diode	1.60	°C/W
		Total	0.85]
Rth (c)	Coupling		0.10	

When the diodes 1 and 2 are used simultaneously :

 Δ Tj (diode 1) = P(diode1) x R_{th}(per diode) + P(diode 2) x R_{th(C)}

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Tests Conditions	Tests Conditions		Min.	Тур.	Max.	Unit
I _R *	Reverse leakage Current	$Tj = 25^{\circ}C$ $V_R = V_{RRM}$				200	μA
		Tj = 125°C				40	mA
V _F **	Forward Voltage drop	Tj =25°C	I _F = 30 A			0.84	V
		Tj = 125°C	I _F = 30 A			0.72	
		Tj = 125°C	IF = 15 A			0.57	

Pulse test : * tp = 5 ms, duty cycle < 2 % ** tp = 380 μ s, duty cycle < 2%

To evaluate the conduction losses use the following equation :

 $P = 0.42 \text{ x } I_{F(AV)} + 0.01 I_{F}^{2}(RMS)$

Typical junction capacitance, $V_R = 5V$ F = 1MHZ Tj = 25°C : 700pF

Fig. 1 : Average forward power dissipation versus	
average forward current. (Per diode)	

PF(av)(W)

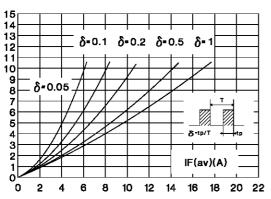


Fig. 2 : Average current versus ambient temperature.

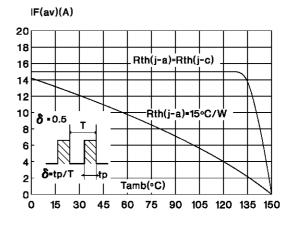




Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (Per diode)

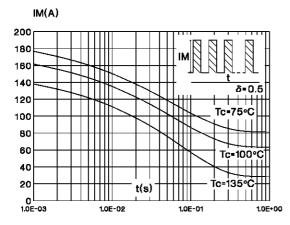


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values) (Per diode)

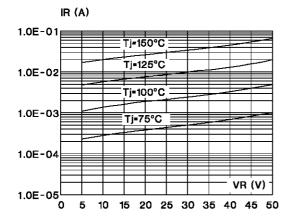
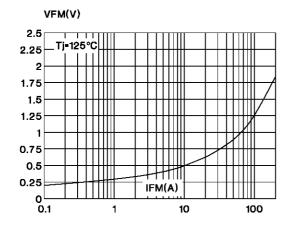
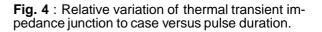


Fig. 7 : Forward voltage drop versus forward current. (Maximum values) (Per diode)





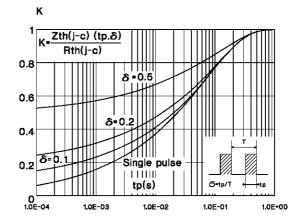
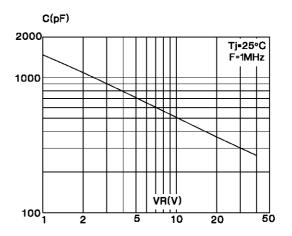
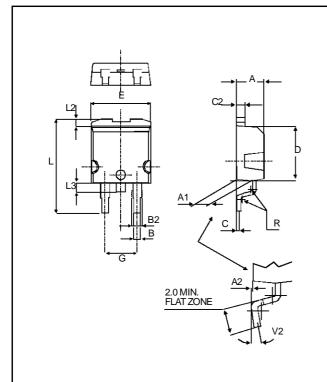


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values) (Per diode)





PACKAGE MECHANICAL DATA D²PAK Plastic



	DIMENSIONS					
REF.	Millimeters		Inches			
	Min.	Тур.	Max.	Min.	Тур.	Max.
Α	4.30		4.60	0.169		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
В	0.70		0.93	0.027		0.037
B2	1.25		1.40	0.049		0.055
С	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	9.00		9.35	0.354		0.368
E	10.00		10.28	0.393		0.405
G	4.88		5.28	0.192		0.208
L	15.00		15.85	0.590		0.624
L2	1.27		1.37	0.050		0.054
L3	1.40		1.75	0.055		0.069
R		0.40			0.016	
V2	0°		8 °	0°		8°

Cooling method : C Marking : Type number Weight : 1.8 g.

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