

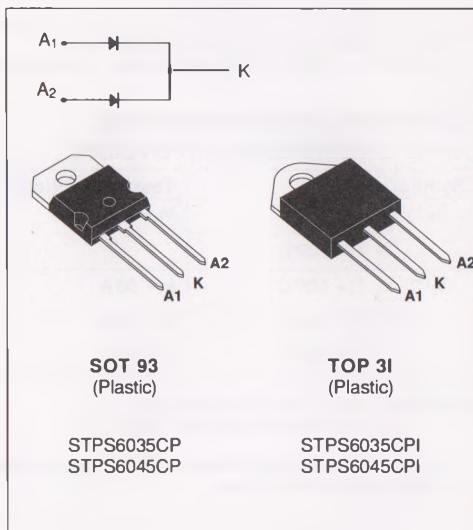
POWER SCHOTTKY RECTIFIER

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- EXTREMELY FAST SWITCHING
- LOW FORWARD VOLTAGE DROP
- HIGH AVALANCHE CAPABILITY
- LOW THERMAL RESISTANCE
- INSULATED PACKAGE :
 Insulating voltage = 2500V_{RMS}
 Capacitance = 12pF

DESCRIPTION

Dual center tap schottky rectifier suited for switch-mode power supply and high frequency DC to DC converters.

Packaged in SOT 93 and TOP 3I, this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter			Value	Unit	
$I_{F(RMS)}$	RMS Forward Current			Per diode	60	A
$I_{F(AV)}$	Average Forward Current $\delta = 0.5$	SOT 93	$T_c = 125^\circ\text{C}$	Per diode	30	A
		TOP 3I	$T_c = 105^\circ\text{C}$	Per device	60	
I_{FSM}	Surge Non Repetitive Forward Current		$T_p = 10 \text{ ms}$ Sinusoidal	Per diode	400	A
I_{RRM}	Peak Repetitive Reverse Current		$T_p = 2 \mu\text{s}$ $F = 1\text{KHz}$	Per diode	1	A
T_{stg} T_j	Storage and Junction Temperature Range			- 65 to + 150 - 65 to + 150	$^\circ\text{C}$	
dV/dt	Critical Rate of Rise of Reverse Voltage			1000	V/ μs	

Symbol	Parameter	STPS		Unit
		6035CP 6035CPI	6045CP 6045CPI	
V_{RRM}	Repetitive Peak Reverse Voltage	35	45	V

THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
R _{TH(j-c)}	Junction-case	SOT 93	Per diode total 0.95 0.55	°C/W
		TOP 3I	Per diode total 1.8 1.1	
R _{TH(c)}	Coupling	SOT 93	0.15	°C/W
		TOP 3I	0.4	

When the diodes 1 and 2 are used simultaneously :

$$\Delta T_J(\text{diode } 1) = P(\text{diode } 1) \times R_{TH}(\text{Per diode}) + P(\text{diode } 2) \times R_{TH(c)}$$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS PER DIODE

Symbol	Tests Conditions		Min.	Typ.	Max.	Unit
I _R *	T _J = 25°C	V _R = V _{RRM}			500	μA
	T _J = 125°C				80	mA
V _F **	T _J = 125°C	I _F = 60 A			0.78	V
	T _J = 125°C	I _F = 30 A			0.63	
	T _J = 25°C	I _F = 60 A			0.84	

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

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

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

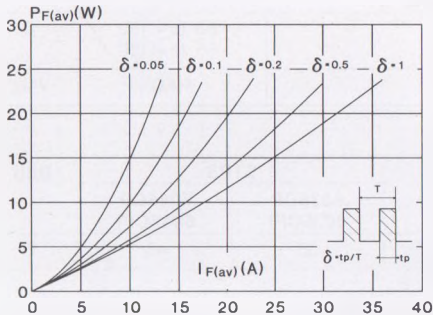


Fig. 2 : Average current versus ambient temperature. (duty cycle : 0.5) (Per diode) (SOT 93)

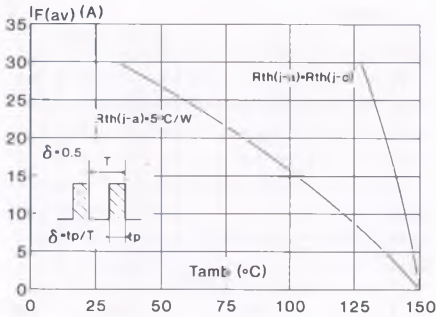


Fig. 3 : Average current versus ambient temperature. (duty cycle : 0.5) (Per diode) (TOP 31)

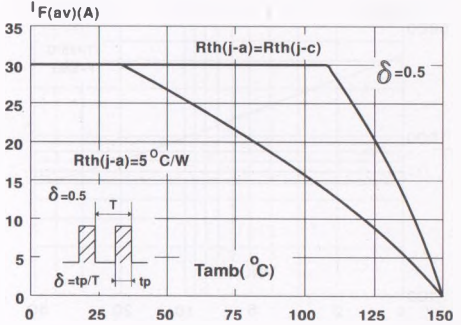


Fig. 4 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (Per diode) (SOT 93)

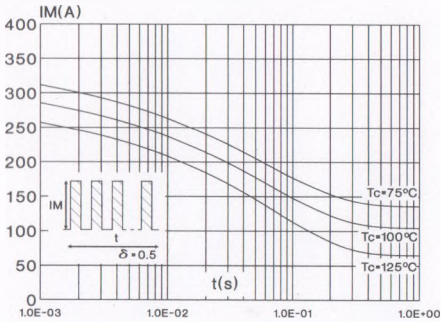


Fig. 5 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (Per diode) (TOP 31)

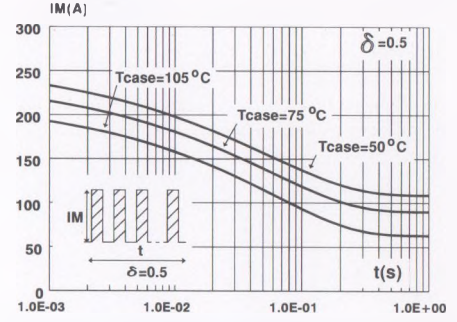


Fig. 6 : Relative variation of thermal transient impedance junction to case versus pulse duration.

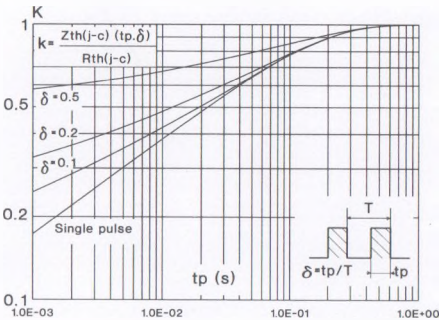


Fig. 7 : Reverse leakage current versus reverse voltage applied. (Typical values) (Per diode)

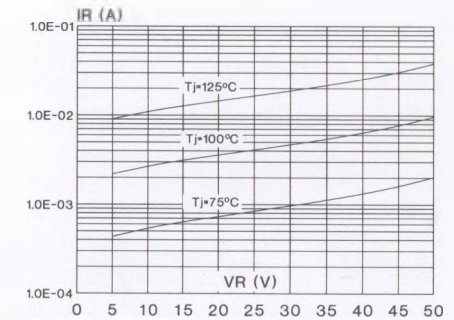


Fig. 8 : Junction capacitance versus reverse voltage applied. (Typical values) (Per diode)

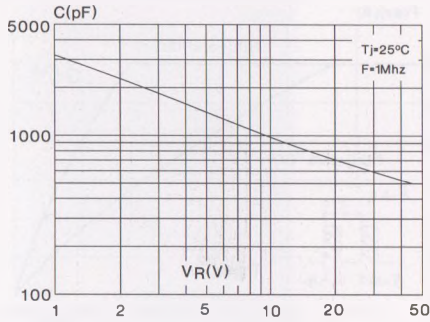


Fig. 9 : Forward voltage drop versus forward current. (Maximum values)

