

## POWER SCHOTTKY RECTIFIER

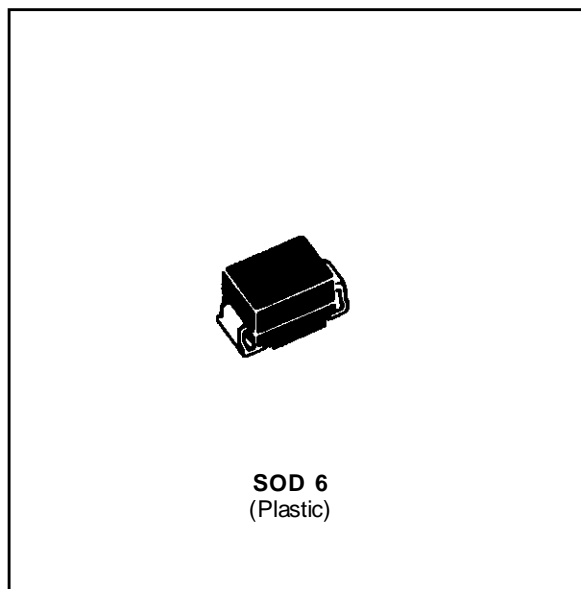
- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- LOW THERMAL RESISTANCE
- EXTREMELY FAST SWITCHING
- SURFACE MOUNTED DEVICE

### DESCRIPTION

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

Packaged in SOD6\*, this device is intended for surface mounting and use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

(\* ) in accordance with DO214AA standard.



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F(AV)}$	Average Forward Current	$T_L = 105^\circ\text{C}$ $\delta = 0.5$	3	A
$I_{FSM}$	Surge Non Repetitive Forward Current	$T_p = 10 \text{ ms}$ Sinusoidal	75	A
$I_{RRM}$	Peak Repetitive 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 - 65 to + 150	$^\circ\text{C}$
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/ $\mu\text{s}$

Symbol	Parameter	STPS			Unit
		320U	330U	340U	
$V_{RRM}$	Repetitive Peak Reverse Voltage	20	30	40	V

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{TH(j-l)}$	Junction-leads	20	$^\circ\text{C/W}$

# STPS320U/STPS330U/STPS340U

## ELECTRICAL CHARACTERISTICS

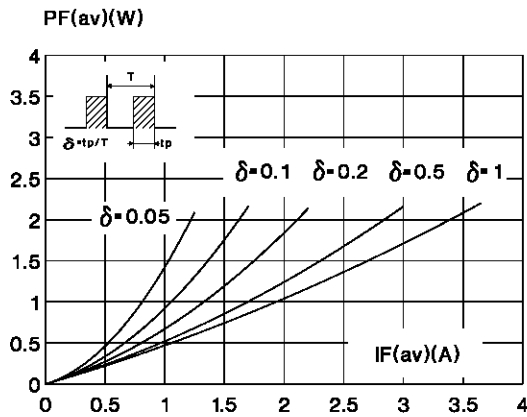
### STATIC CHARACTERISTICS

Symbol	Tests Conditions		Min.	Typ.	Max.	Unit
$I_R^{**}$	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			100	$\mu\text{A}$
	$T_j = 125^\circ\text{C}$				10	$\text{mA}$
$V_F^*$	$T_j = 125^\circ\text{C}$	$I_F = 6\text{ A}$			0.72	V
	$T_j = 125^\circ\text{C}$	$I_F = 3\text{ A}$			0.57	
	$T_j = 25^\circ\text{C}$	$I_F = 6\text{ A}$			0.84	

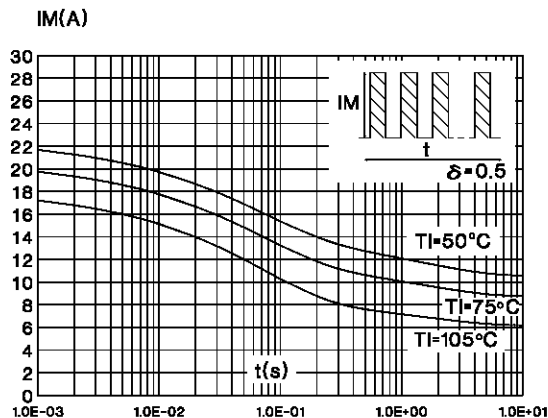
Pulse test : \*  $t_p = 380\ \mu\text{s}$ , duty cycle < 2 %  
 \*\*  $t_p = 5\ \text{ms}$ , duty cycle < 2%

To evaluate the conduction losses use the following equation :  
 $P = 0.42 \times I_{F(AV)} + 0.050 I_{F(RMS)}^2$

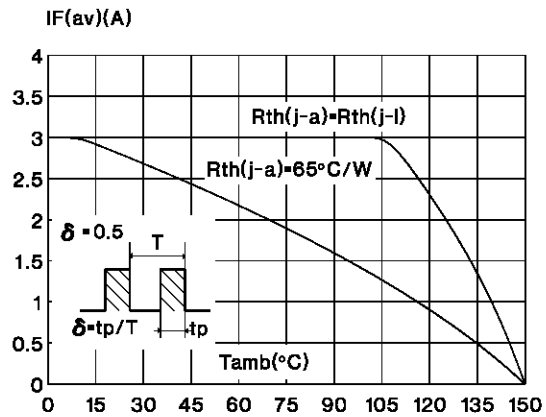
**Figure 1 :** Average forward power dissipation versus average forward current.



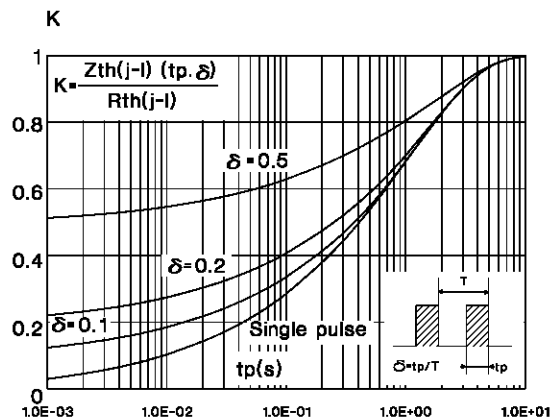
**Figure 3 :** Non repetitive surge peak forward current versus overload duration. (Maximum values)



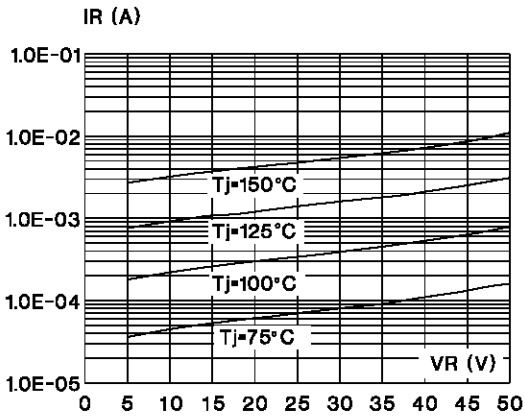
**Figure 2 :** Average current versus ambient temperature. (duty cycle : 0.5)



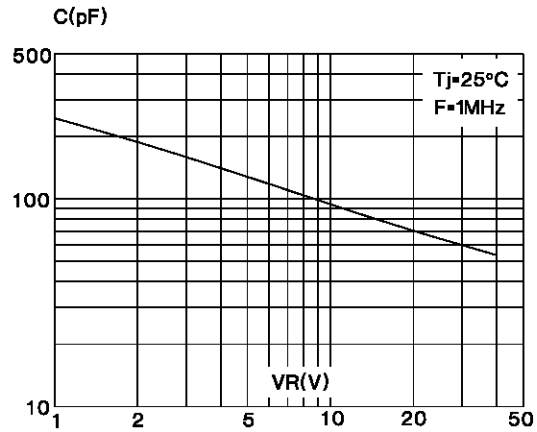
**Figure 4 :** Relative variation of thermal transient impedance junction to lead versus pulse duration.



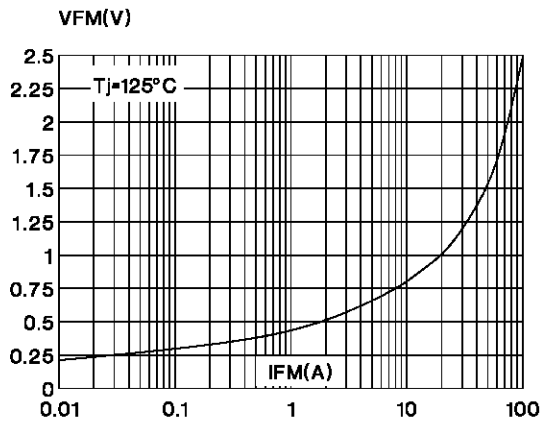
**Figure 5** : Reverse leakage current versus reverse voltage applied.  
(Typical values)



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



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

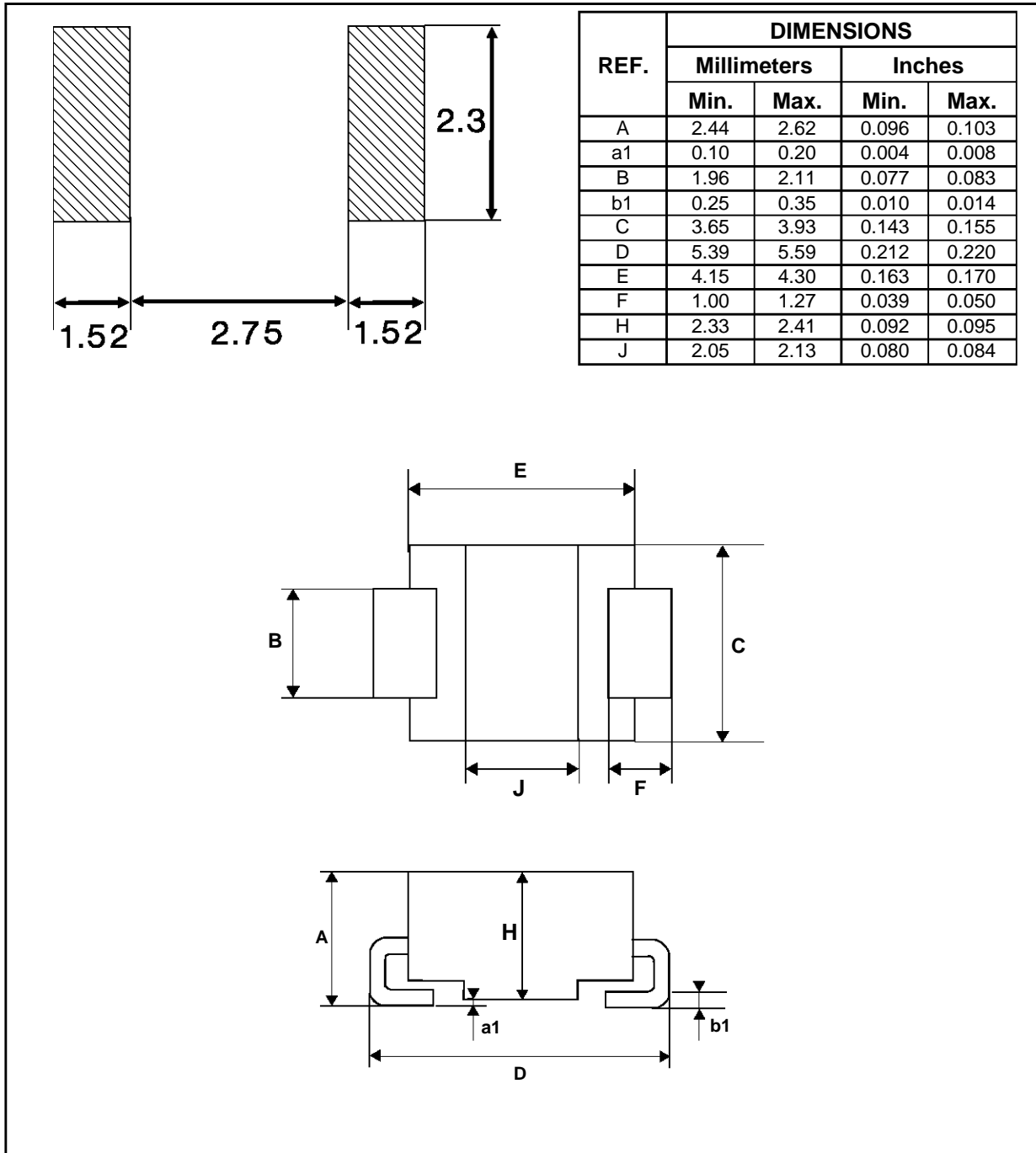


<b>Voltage (V)</b>	20	30	40
<b>Marking</b>	U32	U33	U34

Laser marking  
Logo indicates cathode

# STPS320U/STPS330U/STPS340U

## PACKAGE MECHANICAL DATA SOD6



Laser Marking  
Logo indicated cathode

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