SGS-THOMSON MICROELECTRONICS

STPS320S
STPS330S
STPS340S

POWER SCHOTTKY RECTIFIER

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

SOD 15
(Plastic)

DESCRIPTION

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

Packaged in SOD 15, this device is intended for surface mounting and 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		10	A
$I_{F(AV)}$	Average Forward Current	T_L = 105°C δ = 0.5	3	A
I_{FSM}	Surge Non Repetitive Forward Current	Tp = 10 ms Sinusoidal	75	A
I_{RRM}	Peak Repetitive Reverse Current	Tp = 2 µs F = 1KHz	1	A
Tstg Tj	Storage and Junction Temperature Range		- 65 to + 150 - 65 to + 150	°C
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/µs

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

THERMAL RESISTANCE

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

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Tests Conditions		Min.	Typ.	Max.	Unit
I_R *	Tj = 25°C	$V_R = V_{RRM}$			100	µA
	Tj = 125°C				10	mA
V_F **	Tj = 125°C	I_F = 6 A			0.72	V
	Tj = 125°C	I_F = 3 A			0.57	
	Tj = 25°C	I_F = 6 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 :
$P = 0.42 \times I_{F(AV)} + 0.050\ I_{F^2(RMS)}$

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

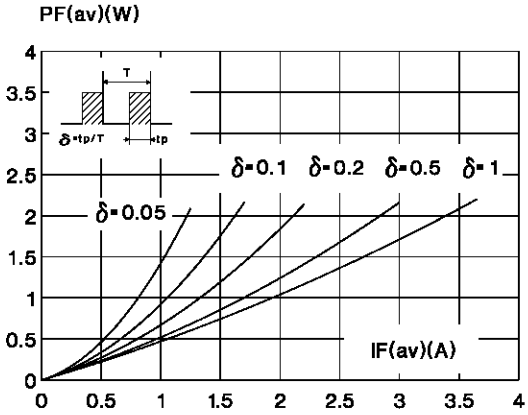


Figure 2 : Average current versus ambient temperature.
(duty cycle : 0.5)

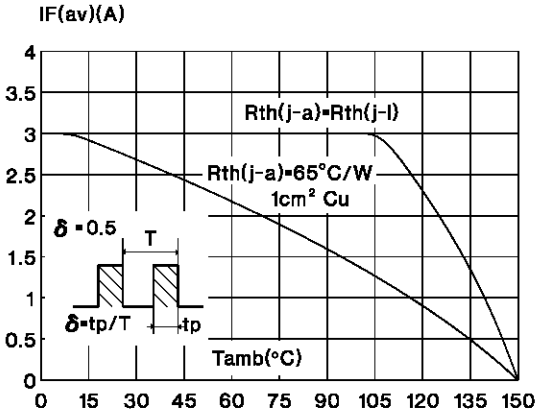


Figure 3 : Non repetitive surge peak forward current versus overload duration.
(Maximum values)

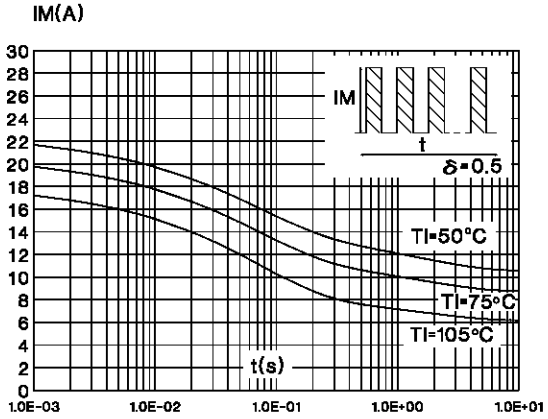


Figure 4 : Relative variation of thermal transient impedance junction to lead versus pulse duration.

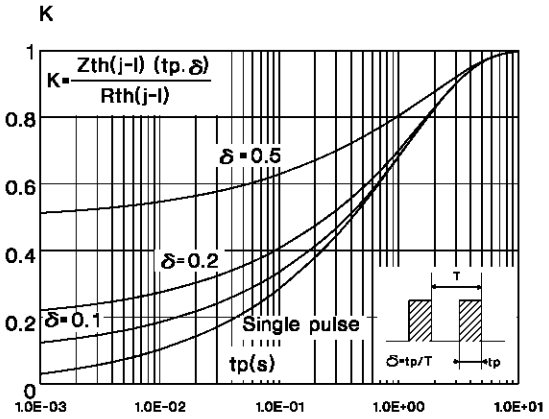


Figure 5 : Reverse leakage current versus reverse voltage applied. (Typical values)

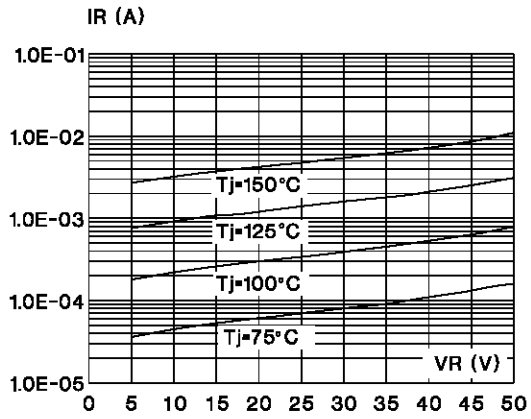


Figure 6 : Junction capacitance versus reverse voltage applied. (Typical values)

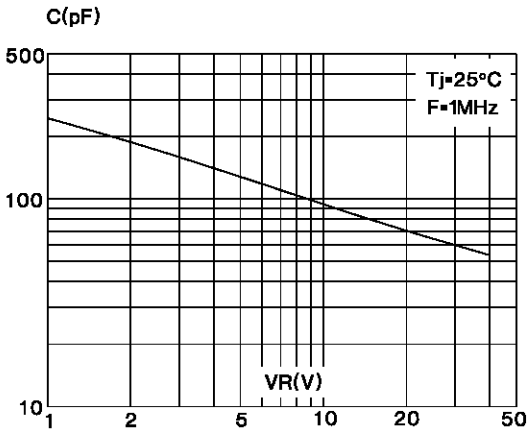
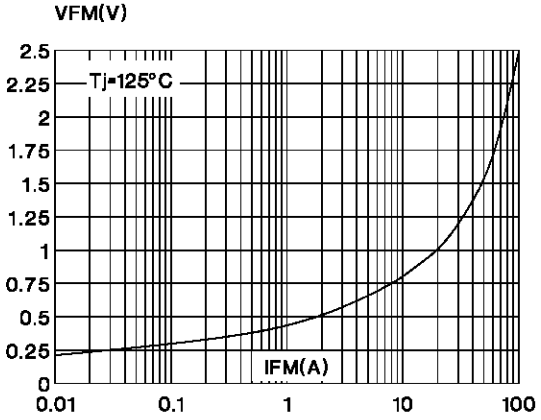


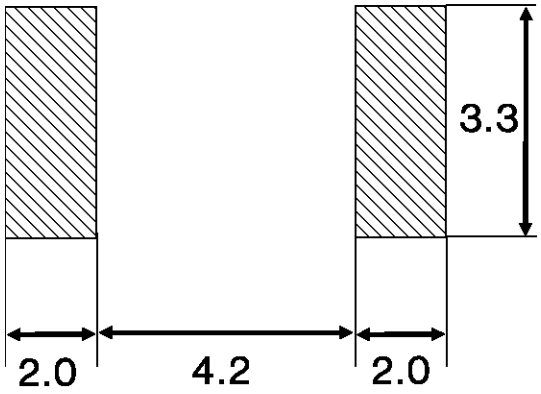
Figure 7 : Forward voltage drop versus forward current. (Maximum values)



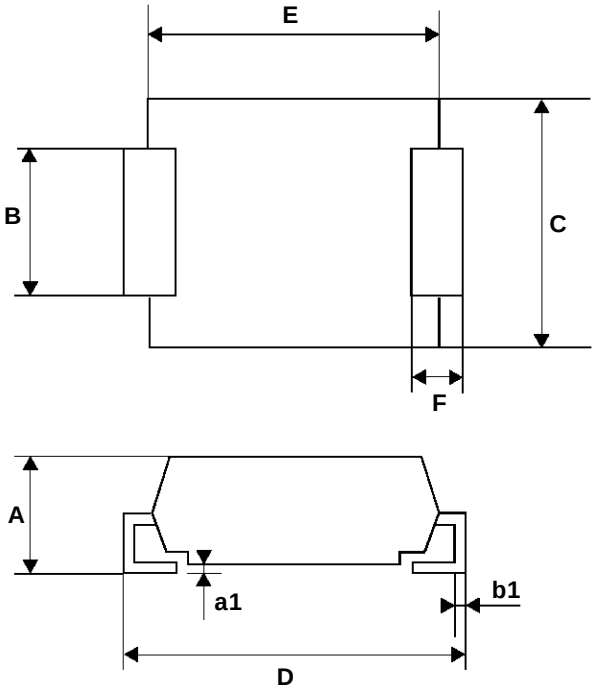
Voltage (V)	20	30	40
Marking	S32	S33	S34

Laser marking
Logo indicates cathode

PACKAGE MECHANICAL DATA
SOD15



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.90	3.10	0.114	0.122
b1	0.29	0.32	0.011	0.012
C	4.80	5.20	0.189	0.204
D	7.60	8.00	0.299	0.315
E	6.30	6.60	0.225	0.259
F	1.30	1.70	0.051	0.056



Laser Marking
Logo indicated cathode