

STPS340U/S/B

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

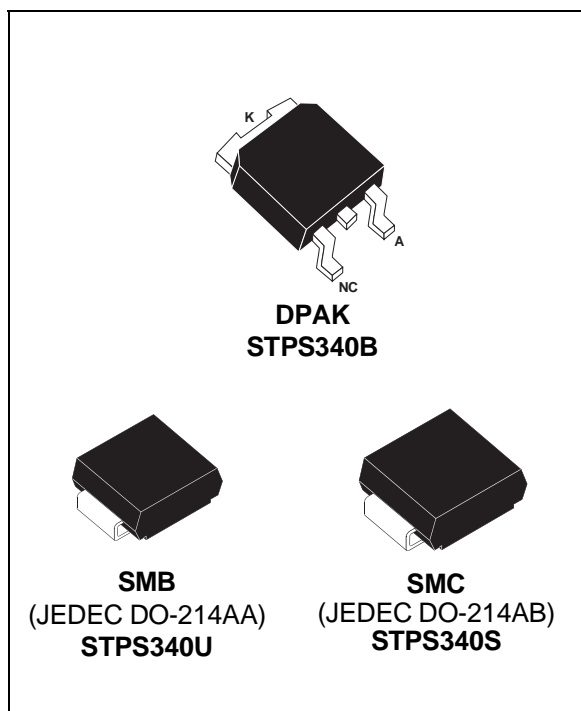
$I_{F(AV)}$	3 A
V_{RRM}	40 V
$T_j(\text{max})$	150 °C
$V_F(\text{max})$	0.57 V

- 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 Switch Mode Power Supplies and high frequency DC to DC converters.

Packaged in SMB, SMC and DPAK this device is intended for use in low and medium voltage operation, high frequency inverters, free wheeling and polarity protection applications where low switching losses are required.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit	
V_{RRM}	Repetitive peak reverse voltage		40	V	
$I_{F(RMS)}$	RMS forward current		DPAK	6	A
			SMB / SMC	10	
$I_{F(AV)}$	Average forward current	$T_c = 135^\circ\text{C} \delta = 0.5$	DPAK	3	A
		$T_L = 105^\circ\text{C} \delta = 0.5$	SMB / SMC		
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ Sinusoidal	75	A	
I_{RRM}	Repetitive peak reverse current	$t_p = 2 \mu\text{s}$ $F = 1\text{kHz}$ square	1	A	
T_{stg}	Storage temperature range		- 65 to + 150	°C	
T_j	Maximum operating junction temperature		+ 150	°C	
dV/dt	Critical rate of rise of reverse voltage		10000	V/ μs	

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THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-l)}	Junction to leads	SMC	20	°C/W
		SMB	25	
R _{th(j-c)}	Junction to case	DPAK	5.5	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C V _R = V _{RRM}			20	μA
		T _j = 125°C V _R = V _{RRM}		2	10	mA
V _F *	Forward voltage drop	T _j = 25°C I _F = 3 A			0.63	V
		T _j = 25°C I _F = 6 A			0.84	
		T _j = 125°C I _F = 3 A		0.52	0.57	
		T _j = 125°C I _F = 6 A		0.63	0.72	

Pulse test : * t_p = 380 μs, δ < 2 %

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

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

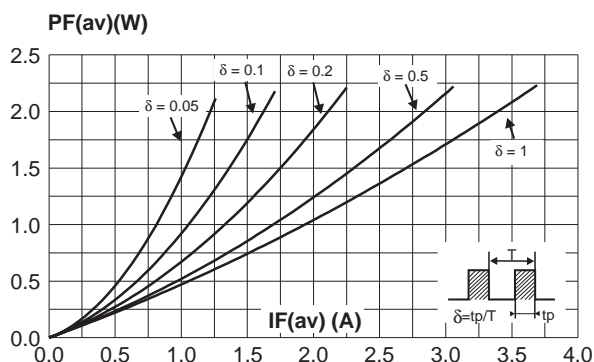
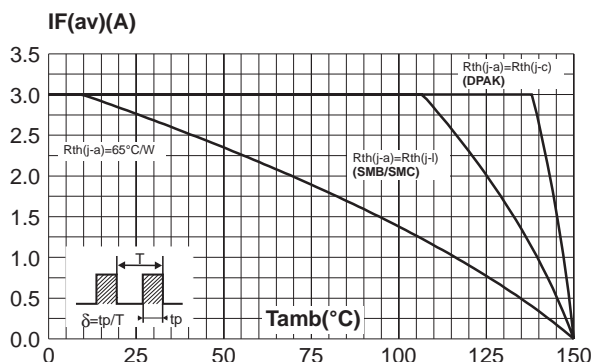
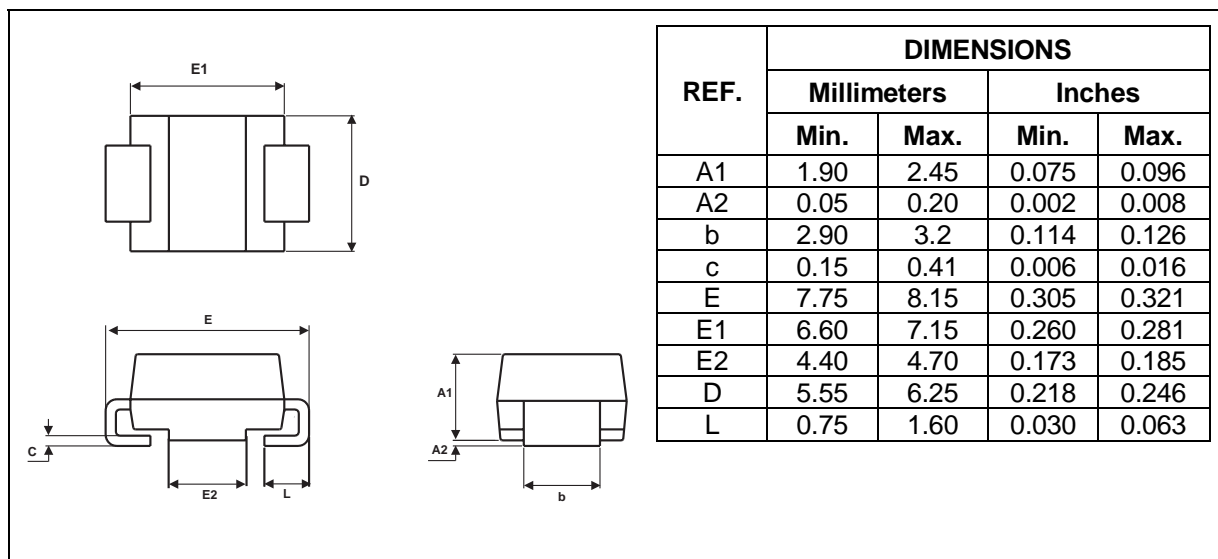


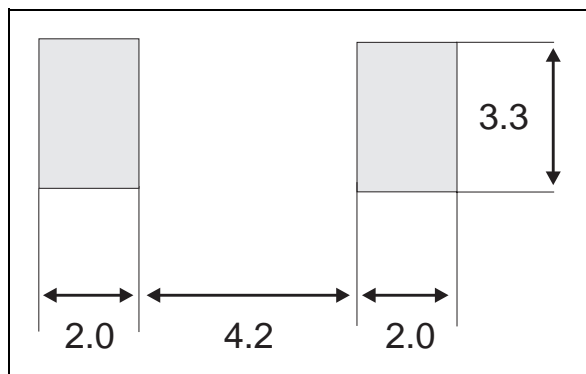
Fig. 2: Average current versus ambient temperature (δ = 0.5).



PACKAGE MECHANICAL DATA
SMC



FOOTPRINT DIMENSIONS (in millimeters)



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS340U	U34	SMB	0.107g	2500	Tape and reel
STPS340S	S34	SMC	0.243g	2500	Tape and reel
STPS340B	S340	DPAK	0.30g	75	Tube
STPS340B-TR	S340	DPAK	0.30g	2500	Tape and reel

- Band indicates cathode on SMB, SMC
- Epoxy meets UL94,V0