

LOW DROP 3.3V POWER SCHOTTKY RECTIFIER

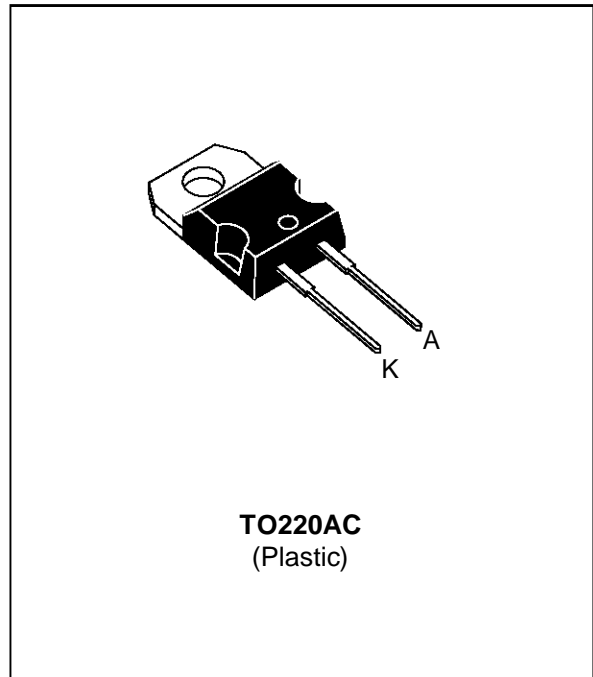
MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	10 A
V_{RRM}	25 V
$V_F (max)$	0.35 V

PRELIMINARY DATASHEET

FEATURES AND BENEFITS

- VERY LOW FORWARD VOLTAGE DROP
- OPTIMIZED CONDUCTION / REVERSE LOSSES TRADE-OFF
- 3.3V RAIL RECTIFICATION



DESCRIPTION

Single Schottky rectifier suited to Switched Mode Power Supplies and high frequency DC to DC converters.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		25	V
$I_{F(RMS)}$	RMS Forward Current		30	A
$I_{F(AV)}$	Average Forward Current	$T_c = 115^\circ\text{C}$ $\delta = 0.5$	10	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10 \text{ ms}$ Sinusoidal	200	A
I_{RRM}	Repetitive Peak Reverse Current	$t_p = 2 \mu\text{s}$ $F = 1\text{KHz}$	1	A
T_{stg}	Storage Temperature Range		- 65 to + 150	$^\circ\text{C}$
T_j	Max. Junction Temperature		125	$^\circ\text{C}$
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	$\text{V}/\mu\text{s}$

STPS10L25D

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case Thermal Resistance	1.5	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage Current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$		800	μA
		$T_j = 125^\circ\text{C}$		125	400	mA
V_F^*	Forward Voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 10\text{ A}$		0.46	V
		$T_j = 125^\circ\text{C}$	$I_F = 10\text{ A}$	0.30	0.35	
		$T_j = 125^\circ\text{C}$	$I_F = 20\text{ A}$		0.48	

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

To evaluate the maximum conduction losses use the following equation :

$$P = 0.22 \times I_{F(AV)} + 0.013 I_{F(RMS)}^2$$

Typical junction capacitance, $V_R = 15\text{V}$ $F = 1\text{MHZ}$ $T_j = 25^\circ\text{C}$: 700pF

PACKAGE MECHANICAL DATA
TO220AC Plastic

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	10.0	10.4	0.393	0.409
B	15.2	15.9	0.598	0.626
C	13	14	0.511	0.551
D	6.2	6.6	0.244	0.260
E	16.4 typ.		0.645 typ.	
F	3.5	4.2	0.137	0.165
G	2.65	2.95	0.104	0.116
H	4.4	4.6	0.173	0.181
I	3.75	3.85	0.147	0.151
J	1.23	1.32	0.048	0.051
K	1.27 typ.		0.050 typ.	
L	0.49	0.70	0.019	0.027
M	2.4	2.72	0.094	0.107
N	4.95	5.15	0.194	0.203
O	1.14	1.70	0.044	0.067
P	0.61	0.88	0.024	0.034

Marking : STPS10L25D

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