SGS-THOMSON MICROELECTRONICS

STPS10L25D

LOW DROP 3.3V POWER SCHOTTKY RECTIFIER

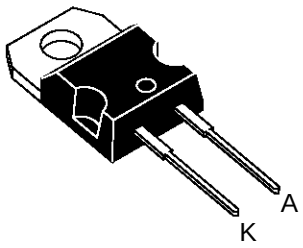
MAIN PRODUCT CHARACTERISTICS

PRELIMINARY DATASHEET

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

FEATURES AND BENEFITS

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



TO220AC
(Plastic)

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	Tc = 115°C δ = 0.5	10	A
I_{FSM}	Surge Non Repetitive Forward Current	tp = 10 ms Sinusoidal	200	A
I_{RRM}	Repetitive Peak Reverse Current	tp = 2 µs F = 1KHz	1	A
T_{stg}	Storage Temperature Range		- 65 to + 150	°C
Tj	Max. Junction Temperature		125	°C
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/µs

THERMAL RESISTANCE

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

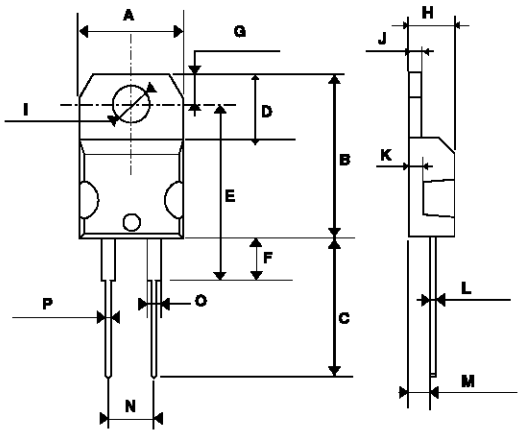
STATIC ELECTRICAL CHARACTERISTICS

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

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

To evaluate the maximum conduction losses use the following equation :
$P = 0.22 \times I_{F(AV)} + 0.013\ I_F{}^2{}_{(RMS)}$
Typical junction capacitance, V_R = 15V F = 1MHZ Tj = 25°C : 700pF

PACKAGE MECHANICAL DATA
TO220AC Plastic



Marking : STPS10L25D

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