

LOW DROP OR-ing POWER SCHOTTKY DIODE

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	15 A
V_{RRM}	10 V
$V_F (max)$	0.33 V

PRELIMINARY DATASHEET

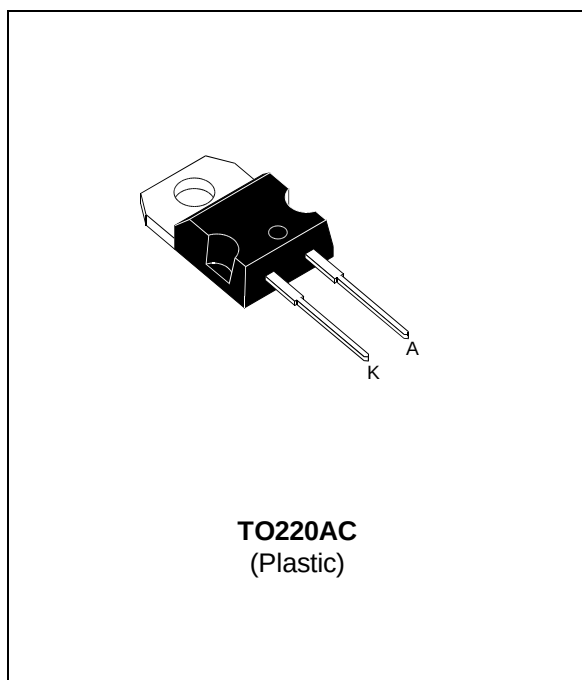
FEATURES AND BENEFITS

- VERY LOW FORWARD VOLTAGE DROP FOR LESS POWER DISSIPATION AND REDUCED HEATSINK
- OPTIMIZED CONDUCTION/REVERSE LOSSES TRADE-OFF WHICH MEANS THE HIGHEST YIELD IN THE APPLICATIONS

DESCRIPTION

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

Packaged in TO220AC, this device is especially intended for use as a OR-ing diode in fault tolerant power supplies equipments.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		10	V
$I_{F(RMS)}$	RMS Forward Current		30	A
$I_{F(AV)}$	Average Forward Current	$T_C = 90^\circ\text{C}$ $\delta = 0.5 \quad V_R = 10\text{V}$	15	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10 \text{ ms}$ Sinusoidal	310	A
I_{RRM}	Repetitive Peak Reverse Current	$t_p = 2 \mu\text{s}$ $F = 1\text{KHz}$	2	A
T_{stg}	Storage Temperature Range		- 65 to + 150	$^\circ\text{C}$
T_j	Max. Junction Temperature		100	$^\circ\text{C}$
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	$\text{V}/\mu\text{s}$

STPS15L10D

THERMAL RESISTANCES

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

STATIC ELECTRICAL CHARACTERISTICS

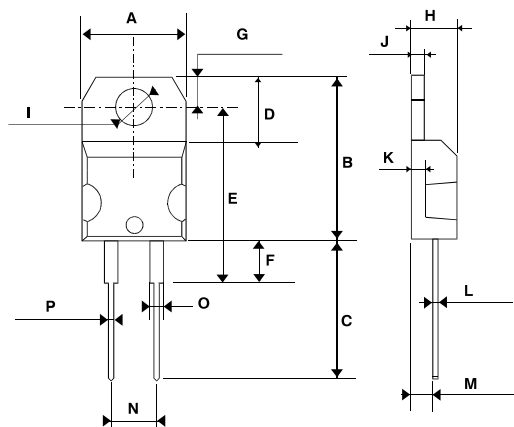
Symbol	Tests Conditions	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse Leakage Current	$T_j = 100^\circ\text{C}$	$V_R = 5\text{V}$		80		mA
		$T_j = 25^\circ\text{C}$	$V_R = 10\text{V}$			4	
		$T_j = 100^\circ\text{C}$			120	420	
V_F^*	Forward Voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 15\text{ A}$			0.41	V
		$T_j = 100^\circ\text{C}$	$I_F = 15\text{ A}$		0.28	0.33	

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

To evaluate the conduction losses use the following equation :

$$P = 0.19 \times I_{F(AV)} + 8.5 \cdot 10^{-3} \times I_{F(RMS)}^2$$

Typical junction capacitance, $V_R = 5\text{V}$ $F = 1\text{MHz}$ $T_j = 25^\circ\text{C}$: 1.5nF

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

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1996 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.