

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2 x 10 A
V_{RRM}	60 V
$V_F (max)$	0.58 V

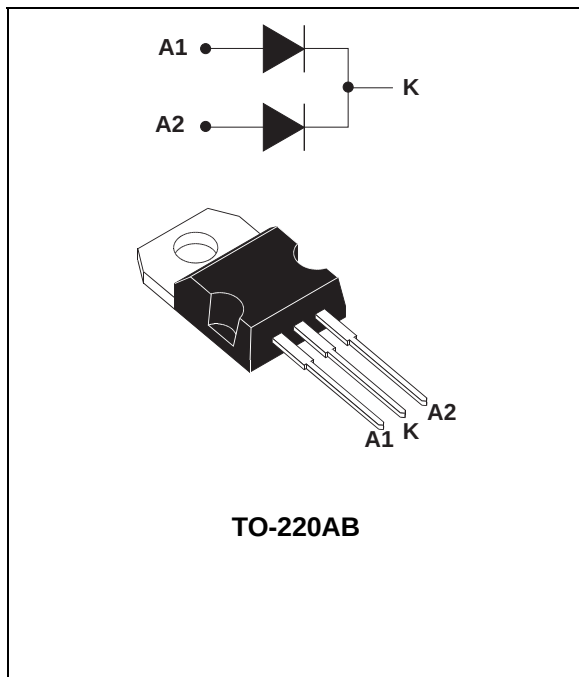
FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD DROP VOLTAGE
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY

DESCRIPTION

High voltage dual Schottky rectifier suited to Switch Mode Power Supplies and other Power Converters.

Packaged in TO-220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses are required.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			60	V
$I_{F(RMS)}$	RMS forward current		Per diode	30	A
$I_{F(AV)}$	Average forward current	$T_{case} = 120^{\circ}C$ $V_R = 60V$ $\delta = 0.5$	Per diode Per device	10 20	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10\text{ ms}$ Sinusoidal	Per diode	200	A
I_{RRM}	Repetitive peak reverse current	$t_p = 2\text{ }\mu s$ $F = 1\text{ kHz}$	Per diode	1	A
I_{RSM}	Non repetitive peak reverse current	$t_p = 100\text{ }\mu s$	Per diode	1	A
T_{stg}	Storage temperature range			- 65 to + 150	$^{\circ}C$
T_j	Maximum junction temperature			150	$^{\circ}C$
dV/dt	Critical rate of rise of reverse voltage			10000	V/ μs

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.6	°C/W
		Total	0.9	
$R_{th(c)}$		Coupling	0.15	°C/W

When the diodes 1 and 2 are used simultaneously :

$$T_j - T_c(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

ELECTRICAL STATIC CHARACTERISTICS (per diode)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$			70	μA
			$T_j = 125^\circ\text{C}$			33	mA
V_F^{**}	Forward voltage drop	$I_F = 20\text{ A}$	$T_j = 125^\circ\text{C}$			0.8	V
		$I_F = 10\text{ A}$	$T_j = 125^\circ\text{C}$		0.58	0.67	
		$I_F = 20\text{ A}$	$T_j = 25^\circ\text{C}$			0.94	
C	Capacitance	60 V, 1MHz	$T_j = 125^\circ\text{C}$		150		pF

Pulse test : * $t_p = 5\text{ ms}$, duty cycle $< 2\%$

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

To evaluate the conduction losses use the following equation :

$$P = 0.54 \times I_F(\text{AV}) + 0.013 \times I_F^2(\text{RMS})$$

PACKAGE MECHANICAL DATA
TO-220AB

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
F2	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
G1	2.40	2.70	0.094	0.106
H2	10	10.40	0.393	0.409
L2	16.4 typ.		0.645 typ.	
L4	13	14	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam.	3.75	3.85	0.147	0.151

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