



BYT200PIV-400

ULTRAFAST POWER RECTIFIER DIODE

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2*100 A
V_{RRM}	400 V
$V_F (max)$	1.4 V

PRELIMINARY DATASHEET

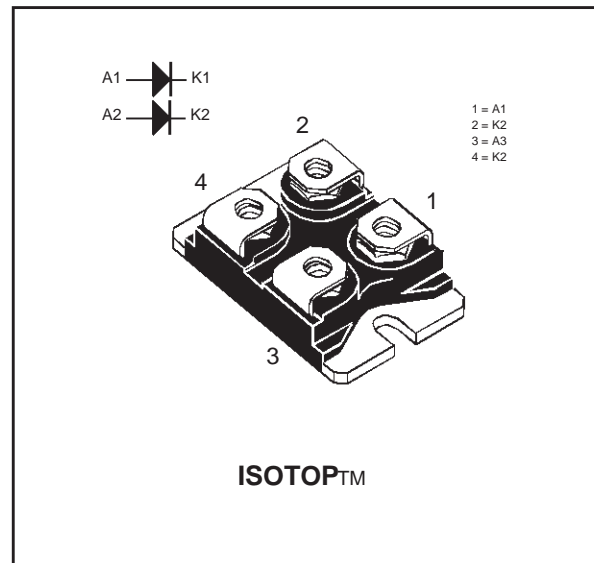
FEATURES AND BENEFITS

- LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH AVALANCHE CAPABILITY
- ISOLATED PACKAGE :
2500 V_{DC}
CAPACITANCE 42pF

DESCRIPTION

High current power rectifier diode suited for Switched Mode Power Supply and high frequency DC to DC converters.

Packaged in ISOTOP, this device is intended for use in a medium voltage high current applications such as **welding equipment and Telecom supplies.**



ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	400	V
$I_{F(RMS)}$	RMS forward current	150	A
$I_{F(AV)}$	Average forward current	$T_c = 80^\circ\text{C}$ $\delta = 0.5$	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ Sinusoidal	A
I_{FRM}	Repetitive peak forward current	$t_p \leq 10 \mu\text{s}$	A
T_{stg}	Storage temperature range	- 40 to + 150	$^\circ\text{C}$
T_j	Maximum junction temperature	150	$^\circ\text{C}$

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THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	Junction to case	Per leg	0.55	°C/W
		Total	0.33	
R _{th(c)}		Coupling	0.1	

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}			120	μA
		T _j = 100°C			4	12	mA
V _F **	Forward voltage drop	T _j = 25°C	I _F = 100 A			1.6	V
		T _j = 125°C	I _F = 100 A		0.95	1.4	

Pulse test : * tp = 5 ms, duty cycle < 2 %
** tp = 380 μs, duty cycle < 2%

RECOVERY CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{rr}	Reverse recovery time	I _F =0.5A I _R =1A I _{rr} =0.25A I _F =1A dI/dt=-50A/μs V _R =30V		55	100	ns
I _{RM}	Reverse recovery current	dI _F /dt=-200A/μs T _j =125°C V _R =400V I _F =100A			40	A
S factor	Softness factor	dI _F /dt=-200A/μs T _j =125°C V _R =400V I _F =100A		0.25		
t _{fr}	Forward recovery time	I _F =100A dI _F /dt=500A/μs Measured at 1.1 x V _F max.			500	ns
V _{FP}	Peak forward voltage	T _j =25°C			12	V

To evaluate the conduction losses use the following equation :

$$P = 0.8 \times I_{F(AV)} + 0.00228 \times I_{F(RMS)}^2$$

PACKAGE MECHANICAL DATA
 ISOTOP

REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	11.80		12.20	0.465		0.480
A1	8.90		9.10	0.350		0.358
B	7.8		8.20	0.307		0.323
C	0.75		0.85	0.030		0.033
C2	1.95		2.05	0.077		0.081
D	37.80		38.20	1.488		1.504
D1	31.50		31.70	1.240		1.248
E	25.15		25.50	0.990		1.004
E1	23.85		24.15	0.939		0.951
E2		24.80			0.976	
G	14.90		15.10	0.587		0.594
G1	12.60		12.80	0.496		0.504
G2	3.50		4.30	0.138		0.169
F	4.10		4.30	0.161		0.169
F1	4.60		5.00	0.181		0.197
P	4.00		4.30	0.157		0.69
P1	4.00		4.40	0.157		0.173
S	30.10		30.30	1.185		1.193

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