SGS-THOMSON MICROELECTRONICS

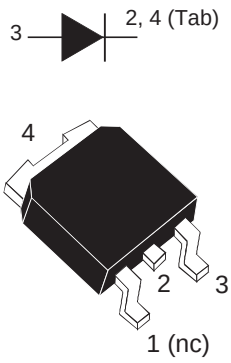
BYT3400B(-TR)

FAST RECOVERY RECTIFIER DIODE

PRELIMINARY DATASHEET

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	**3 A**
V_{RRM}	**400 V**
V_F **(max)**	**1.4 V**



DPAK
(Plastic)

FEATURES AND BENEFITS

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- SURFACE MOUNT PACKAGE
- TAPE AND REEL OPTION : -TR

DESCRIPTION

Single high voltage rectifier suited to Switch Mode Power Supplies and other power converters.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		400	V
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F(AV)}$	Average Forward Current	Tcase = ℃ δ = 0.5	3	A
I_{FSM}	Surge Non Repetitive Forward Current	tp = 10 ms Sinusoidal	60	A
Tstg	Storage Temperature Range		- 40 to + 150	°C
Tj	Max. Junction Temperature		150	℃

THERMAL RESISTANCES

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

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage Current	Tj = 25°C	$V_R = V_{RRM}$			20	µA
		Tj = 100°C				0.5	mA
V_F **	Forward Voltage drop	Tj = 25°C	I_F = 3 A			1.5	V
		Tj = 100°C	I_F = 3 A			1.4	

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

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	Tj = 25°C	I_F = 0.5A I_R = 1A	Irr = 0.25A			25	ns
		I_F = 1A V_R = 30V	dI_F/dt = -15 A/µs			60	ns

TURN-OFF SWITCHING CHARACTERISTICS

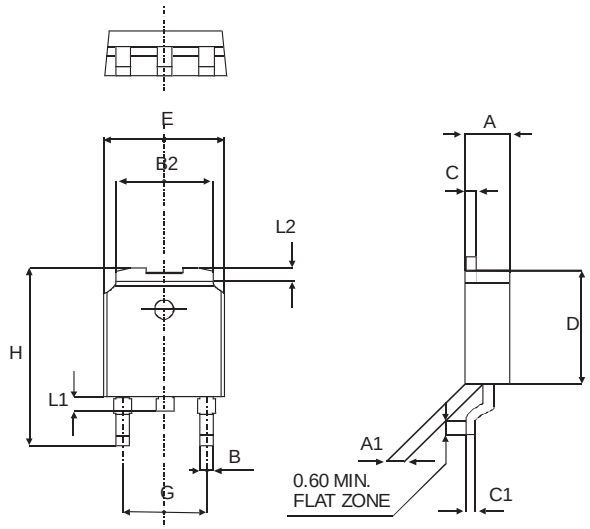
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{IRM}	Vcc = 200V Tj = 100°C	I_F = 3A dI_F/dt = -50 A/µs	Lp ≤ 0.05µH		35	50	ns
I_{RM}					1.5	2	A

To evaluate the maximum conduction losses use the following equation :

$P = 1.1 \times I_{F(AV)} + 0.08\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DPAK



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.094
A1	0.90		1.10	0.035		0.043
B	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.212
C	0.45		0.60	0.017		0.023
C1	0.48		0.60	0.018		0.023
D	6.00		6.20	0.236		0.244
E	6.40		6.60	0.251		0.259
G	4.40		4.60	0.173		0.181
H	9.35		10.10	0.368		0.397
L1	0.60		1.00	0.023		0.039
L2		0.80			0.031	