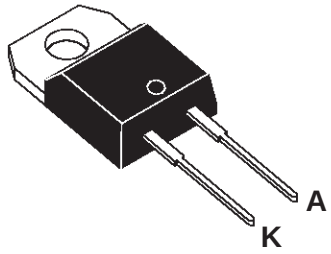
BYT 08PI-1000

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED: Capacitance 7pF

Insulting voltage 2500 V_{RMS}



Isolated
TO220AC
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	100	A
$I_{F\ (RMS)}$	RMS Forward Current		16	A
$I_{F\ (AV)}$	Average Forward Current	$T_c = 80°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	50	A
P	Power Dissipation	$T_c = 80°C$	17	W
T_{stg} T_j	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				2	mA
V_F	T_j = 25°C	I_F = 8A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A	dI_F/dt = - 15A/µs	V_R = 30V			155	ns
		I_F = 0.5A	I_R = 1A	I_{rr} = 0.25A			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = - 32A/µs	V_{CC} = 200 V I_F = 8A $L_p \leq 0.05\mu H$ T_j = 100°C See Figure 1			200	ns
	dI_F/dt = - 64A/µs			120		
I_{RM}	dI_F/dt = - 32A/µs				5.5	A
	dI_F/dt = - 64A/µs			6		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C dI_F/dt = - 8A/µs	V_{CC} = 200V L_p = 2µH	$I_F = I_{F(AV)}$ See figure 2			4.5	

To evaluate the conduction losses use the following equation:

$V_F = 1.47 + 0.04\ I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.04\ I_F{}^2{}_{(RMS)}$

Figure 1. Turn-off switching characteristics (without series inductance).

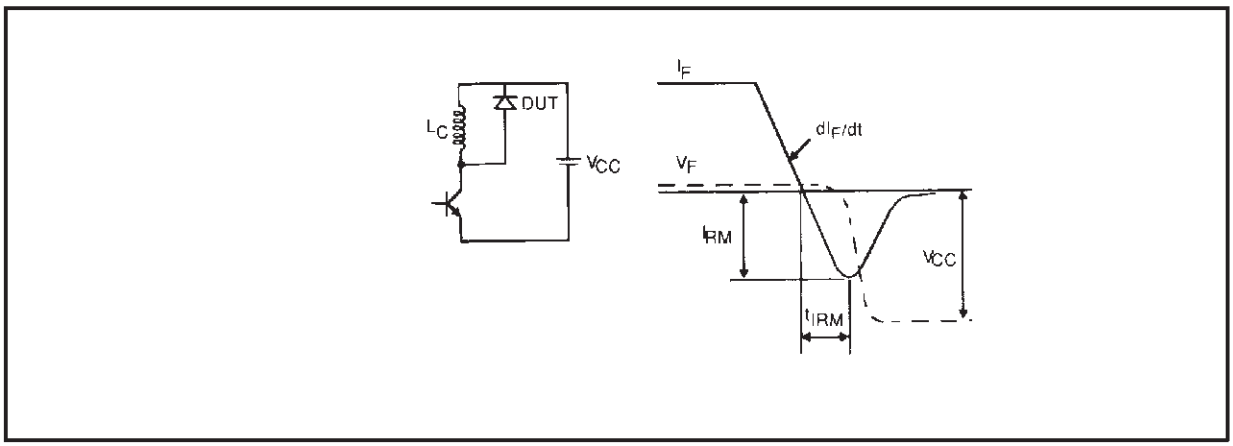
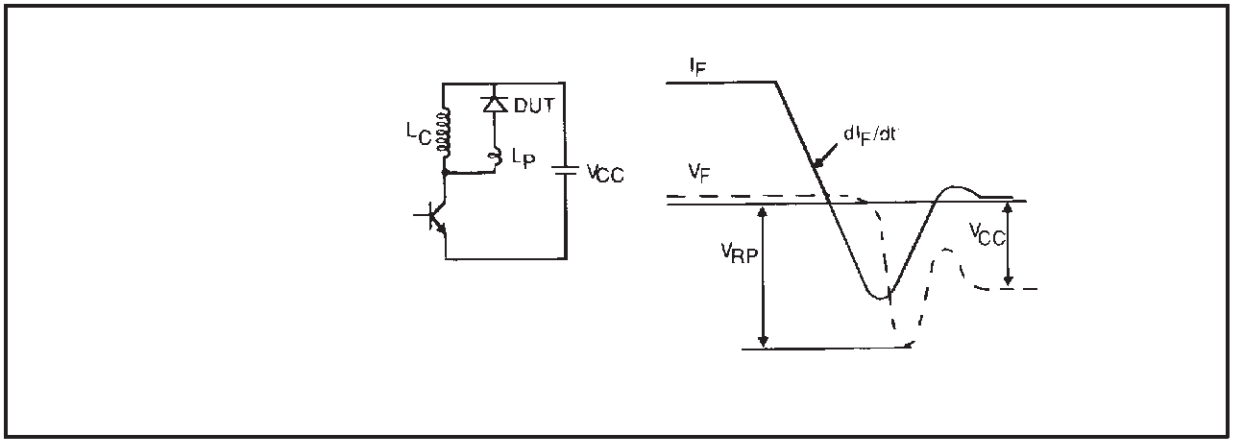
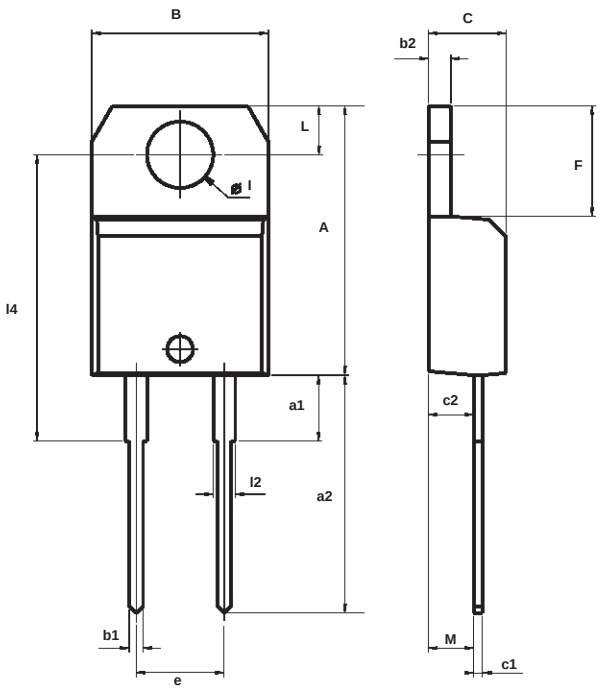


Figure 2. Turn-off switching characteristics (with series inductance).



PACKAGE MECHANICAL DATA : TO220AC Plastic



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	4.80		5.40	0.189		0.212
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		0.151
l4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
l2	1.14		1.70	0.044		0.066
M		2.60			0.102	

Cooling method: by conduction (method C)
Marking: type number
Weight: 2.1g
Recommended torque value: 80cm. N
Maximum torque value: 100cm. N