Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

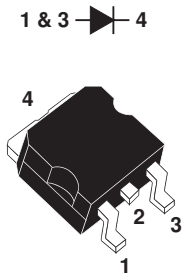
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

BYT30G-400

HIGH EFFICIENCY FAST RECOVERY DIODES

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	30 A
V_{RRM}	400 V
trr	50 ns
V_F	1.4 V



D^2PAK
(Plastic)

FEATURES AND BENEFITS

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- SMD PACKAGE

DESCRIPTION

Single rectifier suited for freewheeling in converters and motor control circuits.
Packaged in D^2PAK, this surface mount device is intended for use in high frequency inverters, free wheeling and polarity protection applications.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		400	V
$I_{F(RMS)}$	RMS forward current		50	A
$I_{F(AV)}$	Average forward current	Tc=100°C δ = 0.5	30	A
I_{FSM}	Surge non repetitive forward current	tp=10ms sinusoidal	350	A
I_{FRM}	Repetitive peak forward current	tp = 5µs f = 5 kHz	280	A
Tstg Tj	Storage and junction temperature range		- 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
Rth (j-c)	Junction to case	1	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	$V_R = V_{RRM}$	T_j = 25°C			35	µA
			T_j = 100°C			6	mA
V_F **	Forward voltage drop	I_F = 30 A	T_j = 100°C			1.4	V
		I_F = 30 A	T_j = 25°C			1.5	

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

To evaluate the conduction losses use the following equation :
$P = 1.1 \times I_{F(AV)} + 0.0095\ I_F^2{}_{(RMS)}$

RECOVERY CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	T_j = 25°C I_F = 0.5A Irr = 0.25 A I_R = 1A			50	ns
		T_j = 25°C I_F = 1A dI_F/dt = -15A/µs V_R = 30V			100	

TURN-OFF SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	Maximum reverse recovery time	T_j = 100°C	dI_F/dt = -120A/µs			75	ns
		I_F = 30 A	dI_F/dt = -240A/µs		50		
I_{RM}	Maximum reverse recovery current	V_{CC} = 200 V	dI_F/dt = -120A/µs			9	ns
		Lp < 0.05 µH	dI_F/dt = -240A/µs		12		
C factor	Turn-off overvoltage coefficient	T_j = 100°C $I_F = I_{F(AV)}$ V_{CC} = 60 V Lp = 1 µH dI_F/dt = -30A/µs			3.3		/

PIN OUT configuration in D^2PAK:

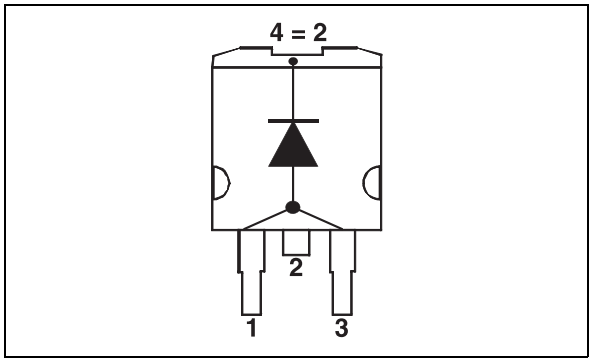


Fig.1 : Average forward power dissipation versus average forward current.

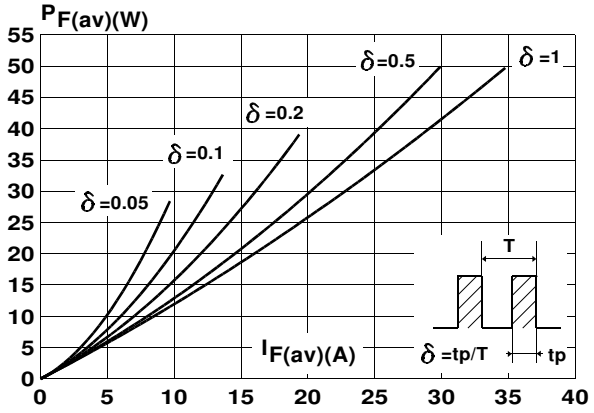


Fig.2 : Peak current versus form factor.

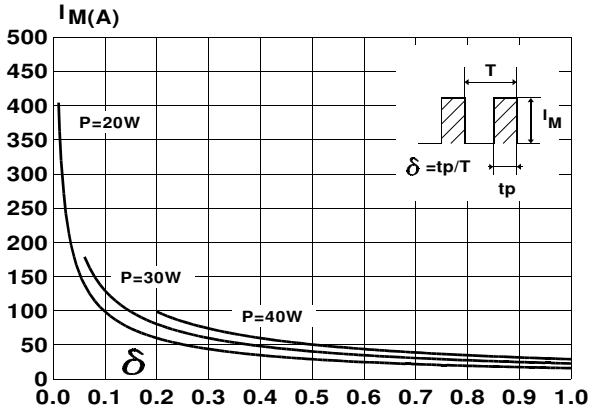


Fig.3 : Forward voltage drop versus forward current (maximum values).

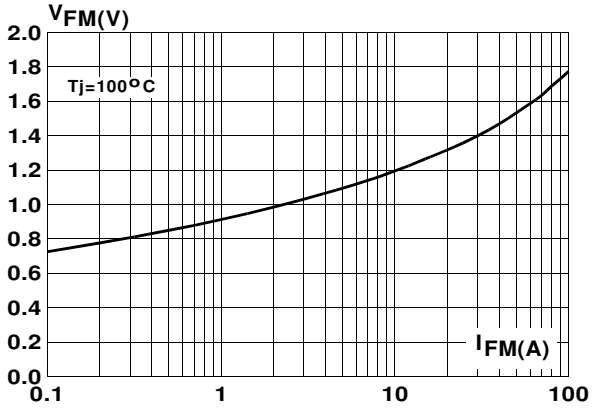


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration.

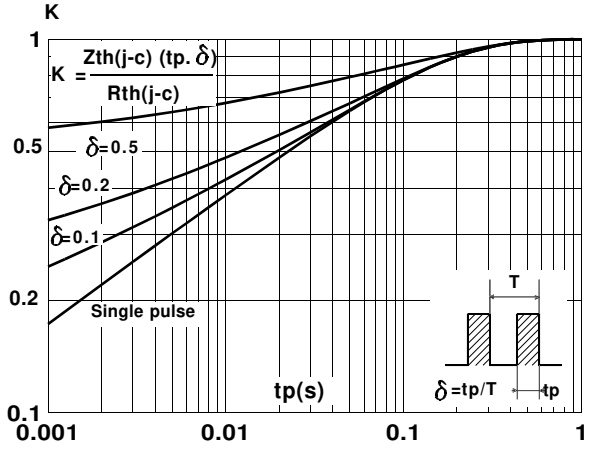


Fig.5 : Non repetitive surge peak forward current versus overload duration.

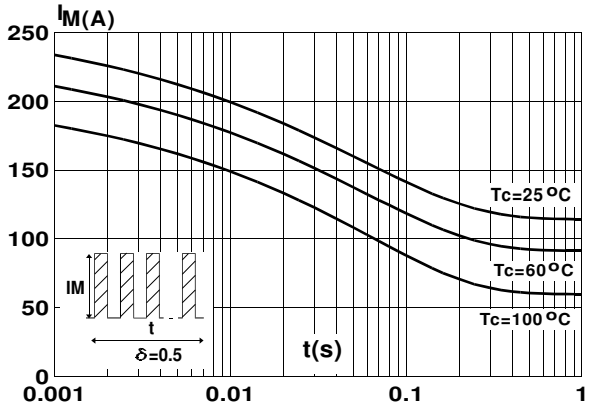


Fig.6 : Average current versus ambient temperature. (δ: 0.5)

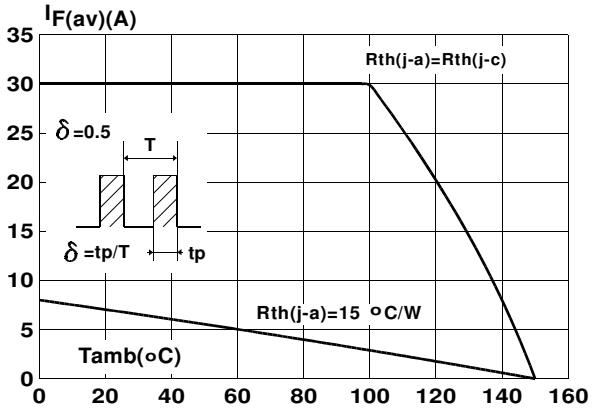


Fig.7 : Reverse recovery charge versus dI_F/dt.

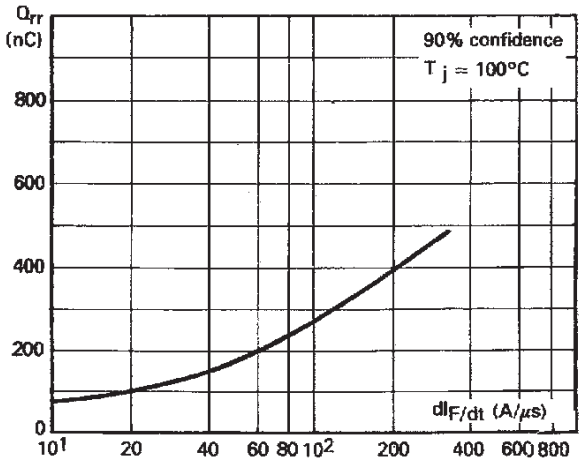


Fig.8 : Forward recovery times versus dI_F/dt.

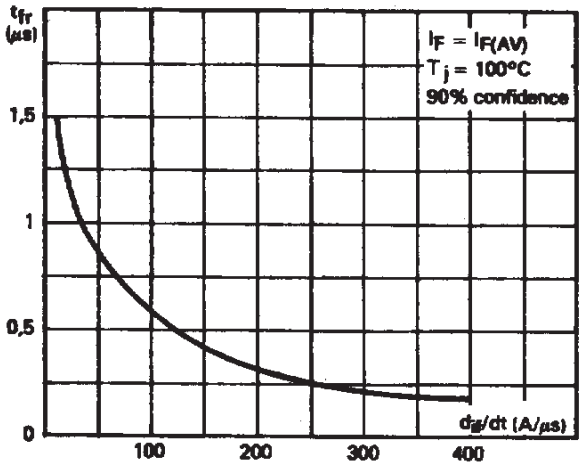


Fig.9 : Peak reverse current versus dI_F/dt.

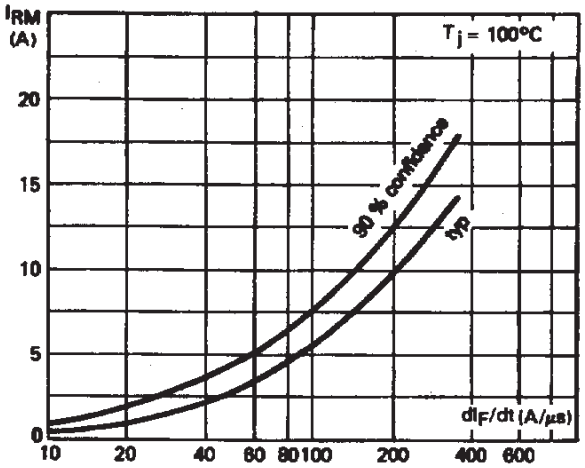


Fig.10 : Peak forward voltage versus dI_F/dt.

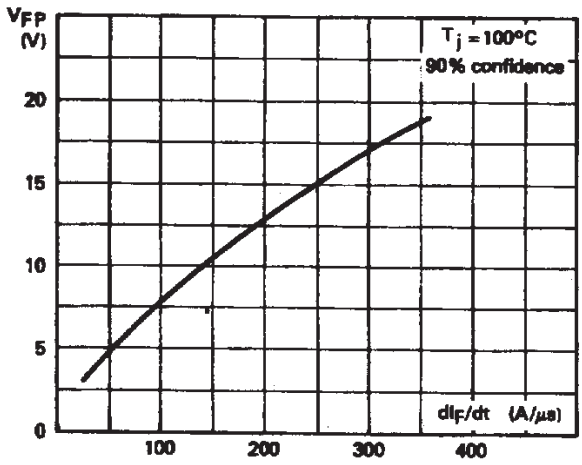
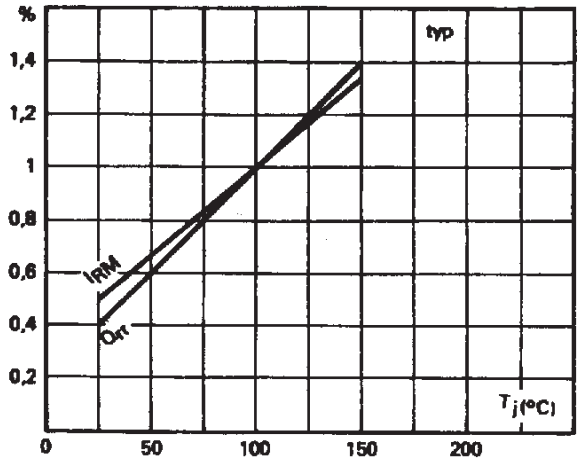
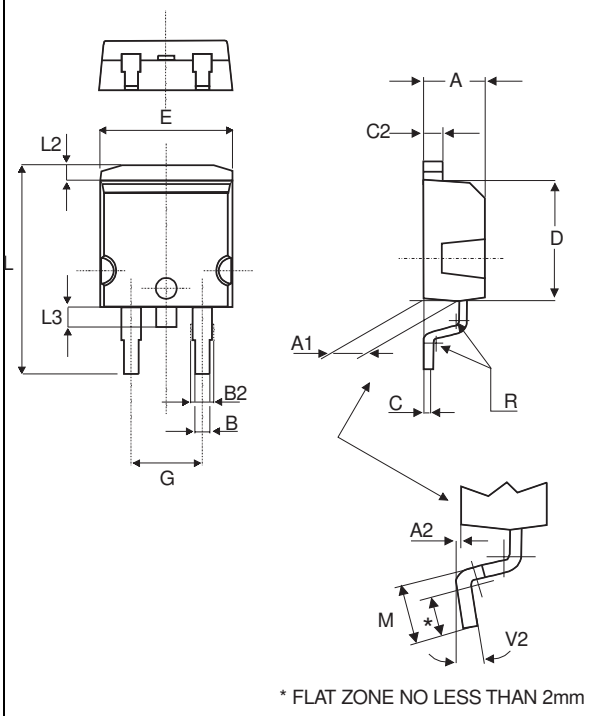


Fig.11: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

D^2PAK (Plastic)



* FLAT ZONE NO LESS THAN 2mm

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
A1	2.49	2.69	0.098	0.106
A2	0.03	0.23	0.001	0.009
B	0.70	0.93	0.027	0.037
B2	1.14	1.70	0.045	0.067
C	0.45	0.60	0.017	0.024
C2	1.23	1.36	0.048	0.054
D	8.95	9.35	0.352	0.368
E	10.00	10.40	0.393	0.409
G	4.88	5.28	0.192	0.208
L	15.00	15.85	0.590	0.624
L2	1.27	1.40	0.050	0.055
L3	1.40	1.75	0.055	0.069
M	2.40	3.20	0.094	0.126
R	0.40 typ.		0.016 typ.	
V2	0°	8°	0°	8°

FOOT PRINT (in millimeters)