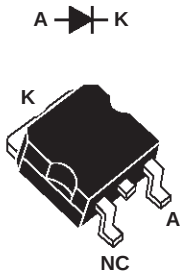
BYW29G-200

HIGH EFFICIENCY FAST RECOVERY DIODES

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	8 A
V_{RRM}	200 V
trr	35 ns
V_F	0.85 V



D^2PAK
(Plastic)

FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT
- SMD

DESCRIPTION

Single rectifier suited for switchmode power supply and high frequency DC to DC converters.
Packaged in a surface mount package D^2PAK, this 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		200	V
$I_{F(RMS)}$	RMS forward current		16	A
$I_{F(AV)}$	Average forward current	Tc=120°C δ = 0.5	8	A
I_{FSM}	Surge non repetitive forward current (All pins connected)	tp=10ms sinusoidal	80	A
I_{FRM}	Repetitive peak forward current	tp = 5 µs f = 5 kHz	75	A
Tstg Tj	Storage and junction temperature range		- 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction to case	2.8	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	$V_R = V_{RRM}$	$T_j = 25°C$			10	µA
			$T_j = 100°C$			0.6	mA
V_F **	Forward voltage drop	$I_F = 5$ A	$T_j = 125°C$			0.85	V
		$I_F = 10$ A	$T_j = 125°C$			1.05	
		$I_F = 10$ A	$T_j = 25°C$			1.15	

Pulse test : * tp = 5 ms, $\delta < 2$ %
** tp = 380 µs, $\delta < 2$ %

To evaluate the conduction losses use the following equation :
$P = 0.65 \times I_{F(AV)} + 0.040\ I_F{}^2{}_{(RMS)}$

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 $I_R = 1A$			25	ns
		$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = -50A/µs$ $V_R = 30V$			35	
t_{fr}	Forward recovery time	$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = 100A/µs$ $V_{FR} = 1.1 \times V_F$ max		15		ns
V_{FP}	Peak forward voltage	$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = 100A/µs$		2		V

PIN OUT configuration in D^2PAK:

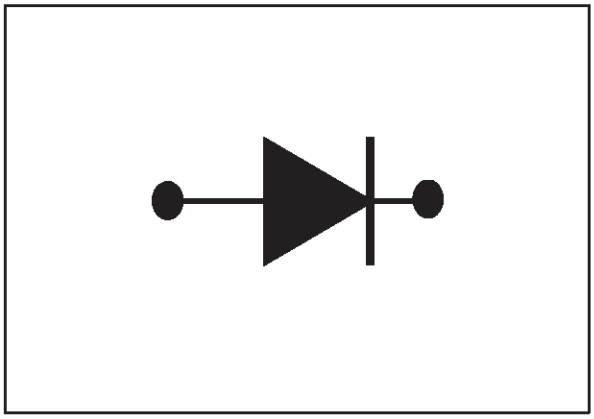


Fig.1 : Average forward power dissipation versus average forward current.

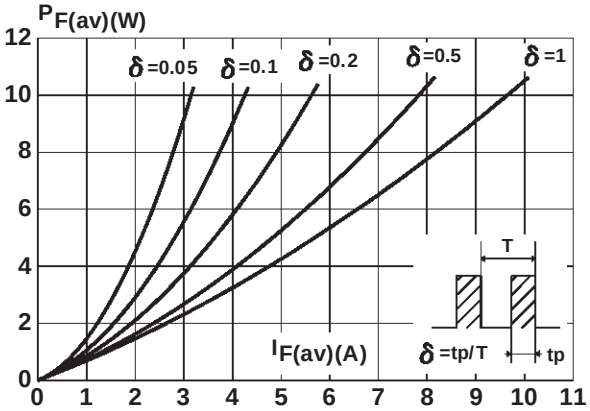


Fig.2 : Peak current versus form factor.

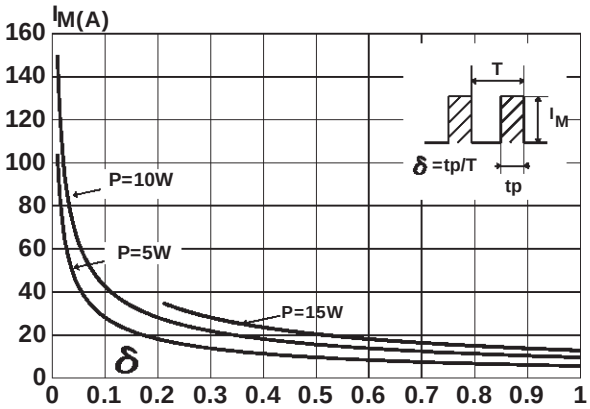


Fig.3 : Forward voltage drop versus forward current (maximum values).

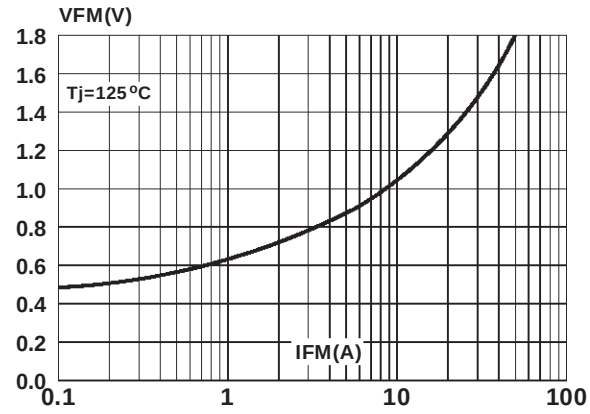


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration.

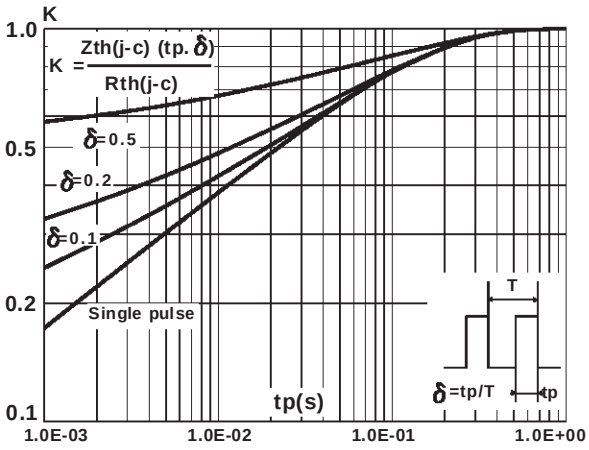


Fig.5 : Non repetitive surge peak forward current versus overload duration.

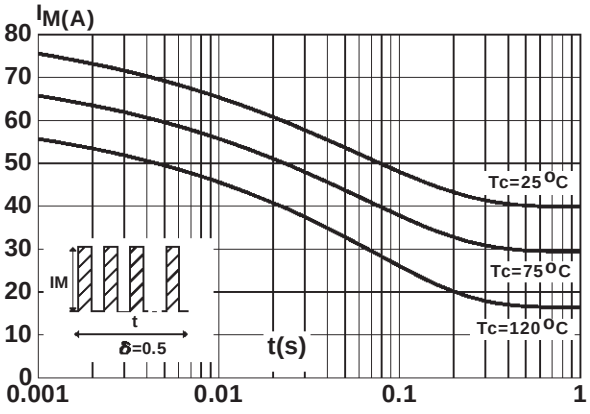


Fig.6 : Average current versus ambient temperature. (duty cycle : 0.5)

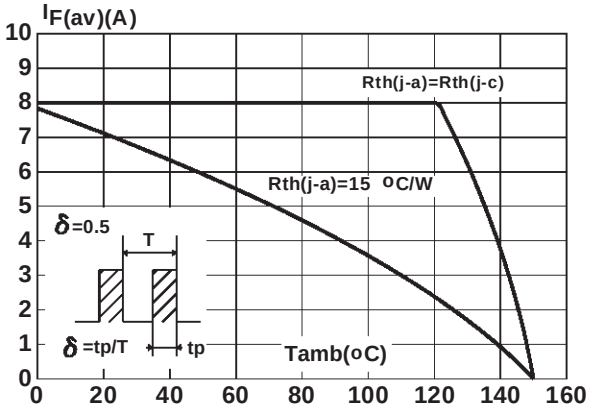


Fig.7 : Junction capacitance versus reverse voltage applied (Typical values).

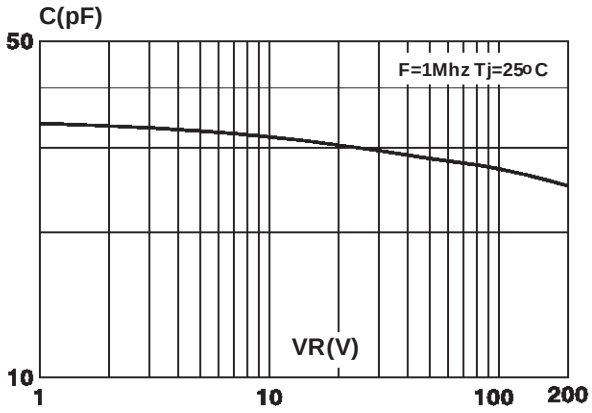


Fig.8 : Recovery charges versus dI_F/dt.

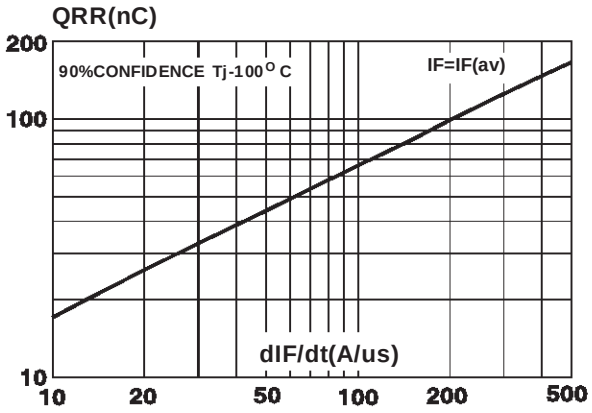


Fig.9 : Peak reverse current versus dIF/dt.

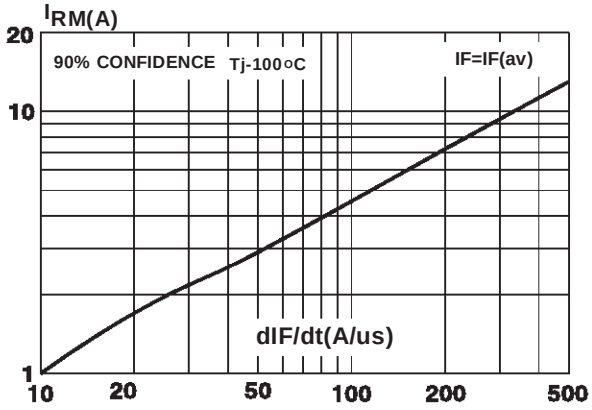
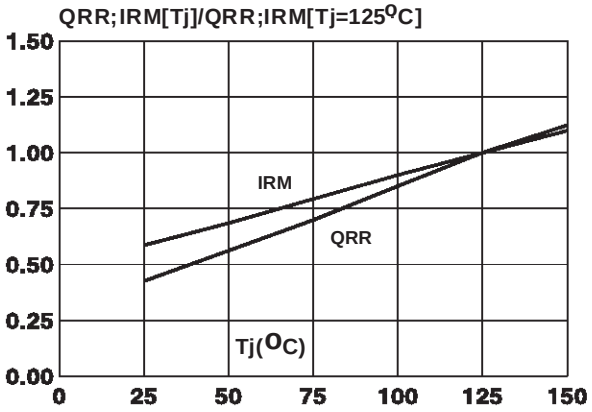
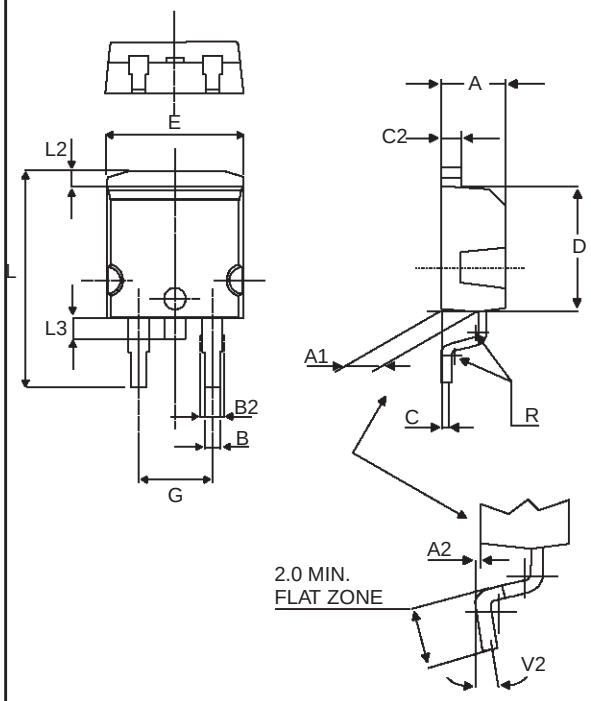


Fig.10 : Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

D^2PAK (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.60	0.169		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	1.25	1.40		0.049	0.055	
C	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	8.95		9.35	0.352		0.368
E	10.00		10.28	0.393		0.405
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
R		0.40			0.016	
V2	0°		8°	0°		8°

FOOT PRINT (in millimeters)