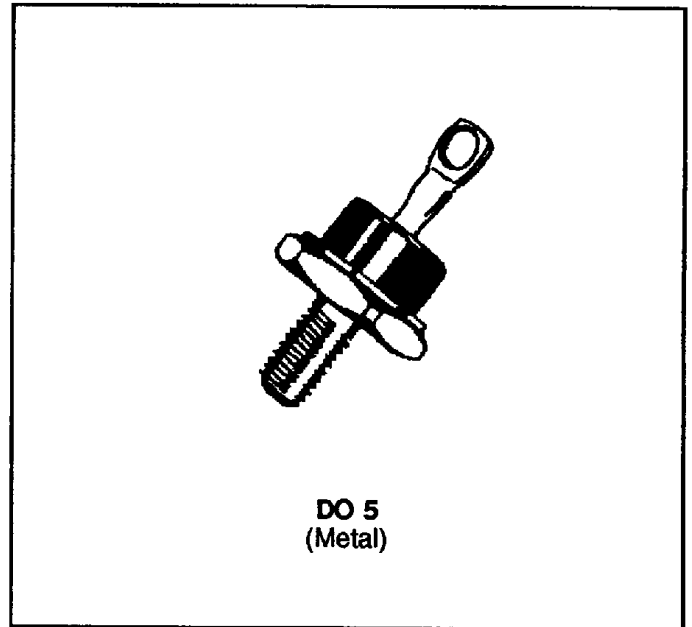


HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_C = 115^\circ C$ $\delta = 0.5$	35	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 100^\circ C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	°C

Symbol	Parameter	BYW 92-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R	T _J = 25°C	V _R = V _{RRM}			50	μA
	T _J = 100°C				5	mA
V _F	T _J = 25°C	I _F = 100A			1.3	V
	T _J = 100°C	I _F = 35A			0.92	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t _{rr}	T _J = 25°C V _R = 30V	I _F = 1A see figure 12	di _F /dt = - 50A/μs			50	ns
Q _{rr}	T _J = 25°C V _R ≤ 30V	I _F = 2A	di _F /dt = - 20A/μs			20	nC
t _{fr}	T _J = 25°C Measured at 1.1 x V _F	I _F = 1A	t _r = 5ns		10		ns
V _{FP}	T _J = 25°C	I _F = 1A	t _r = 5ns		1.5		V

To evaluate the conduction losses use the following equations:

$$V_F = 0.66 + 0.0047 I_F$$

$$P = 0.66 \times I_{F(AV)} + 0.0047 I_{F(RMS)}^2$$

Figure 1. Power losses versus average current

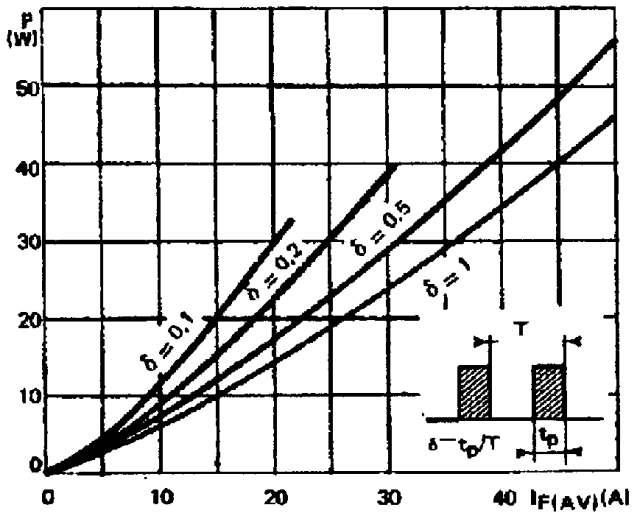


Figure 2. Peak current versus form factor

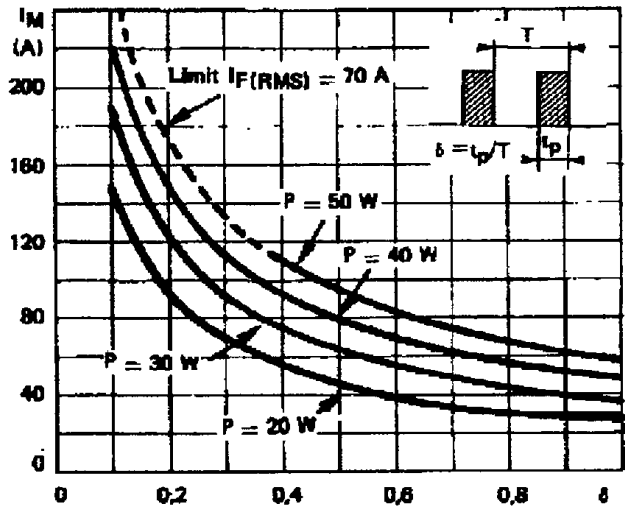


Figure 3. Non repetitive peak surge current versus duration

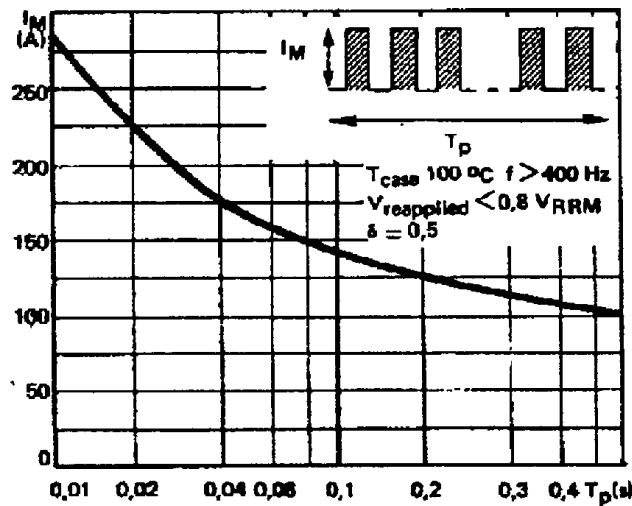


Figure 4. Thermal impedance versus pulse width

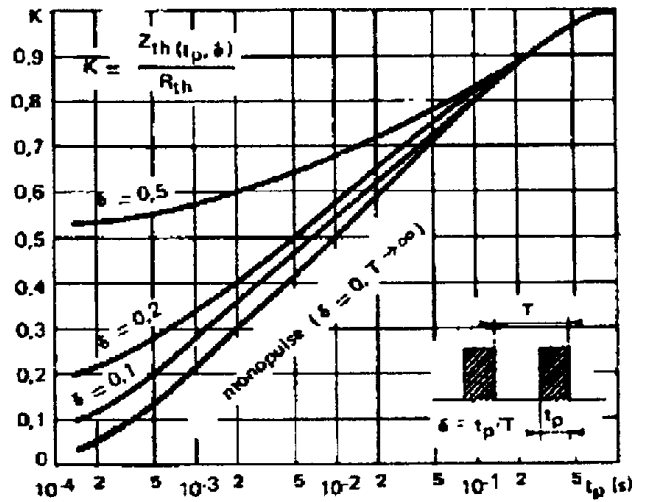


Figure 5. Voltage drop and spread versus forward current

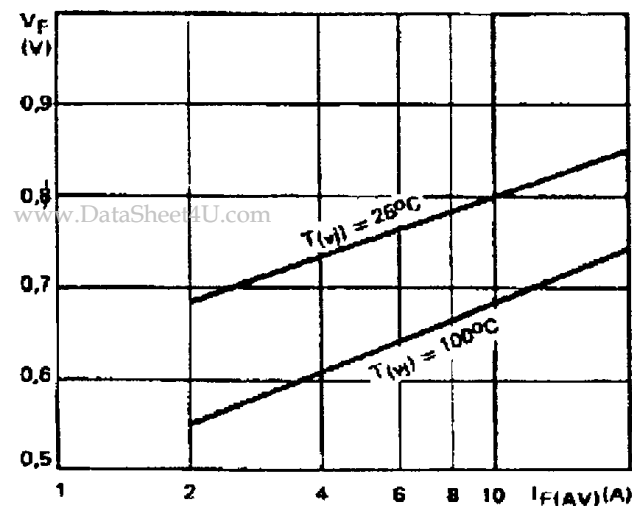


Figure 6. Voltage drop versus forward current

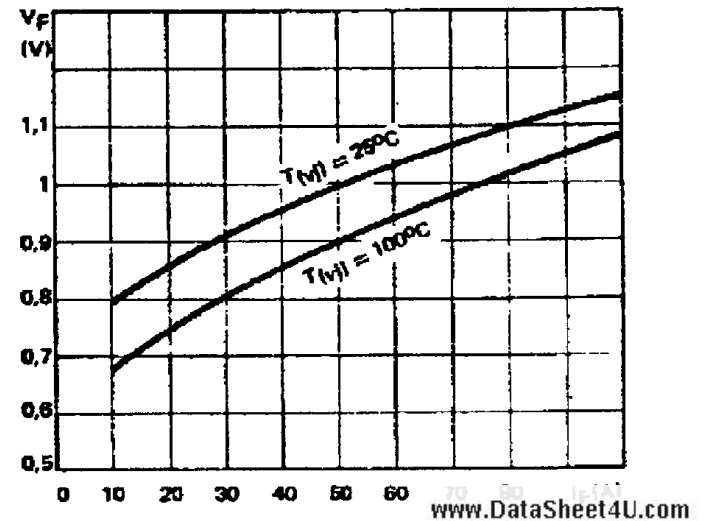


Figure 7. Capacitance versus reverse voltage applied

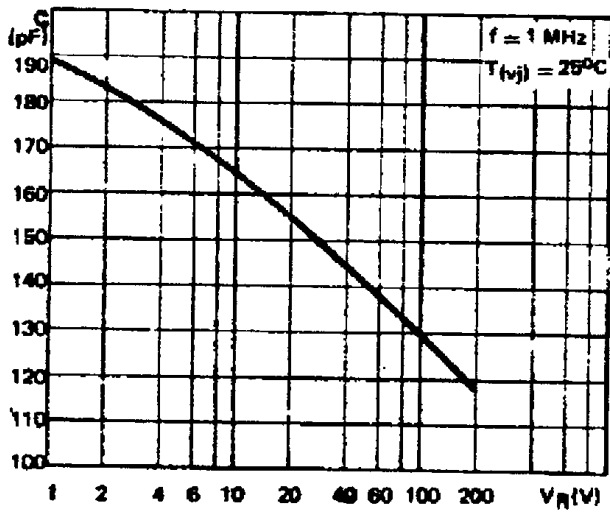


Figure 8. Recovery charge versus di_F/dt

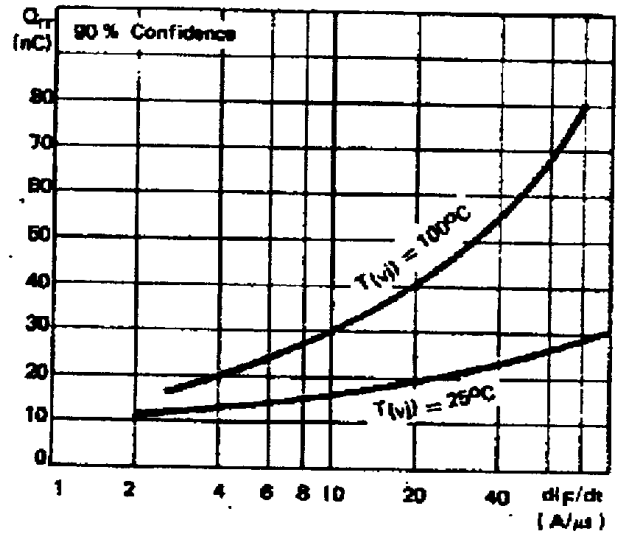


Figure 9. Recovery time versus di_F/dt

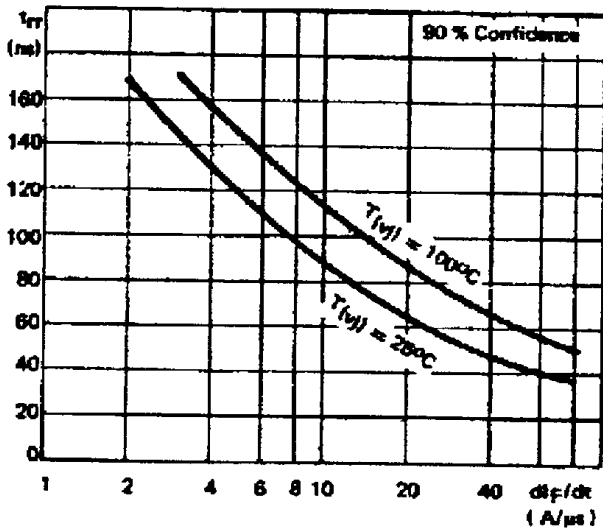


Figure 10. Peak reverse current versus di_F/dt

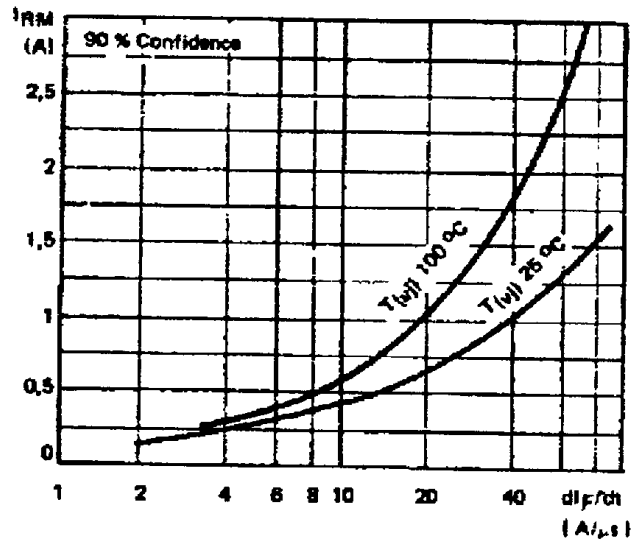


Figure 11. Dynamic parameters versus junction temperature

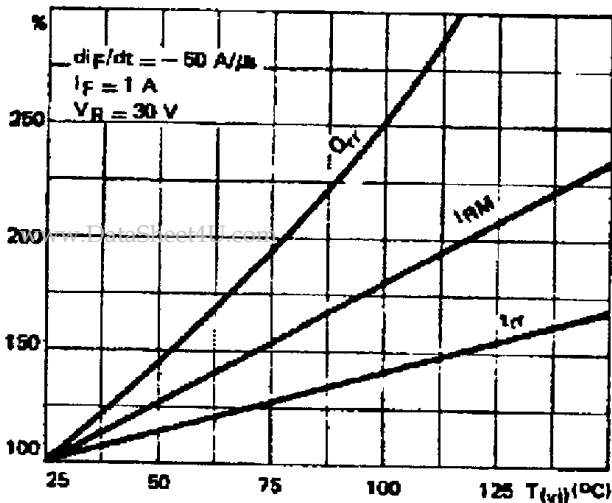
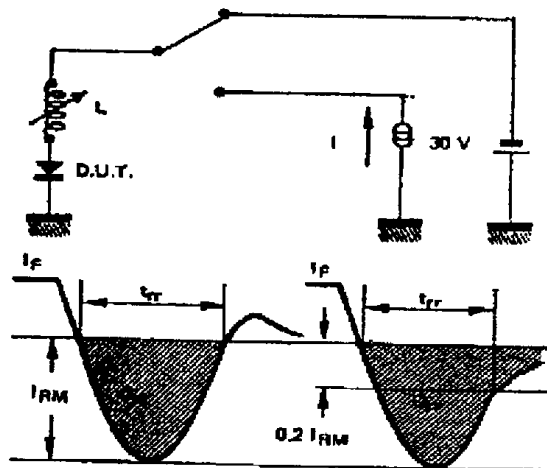
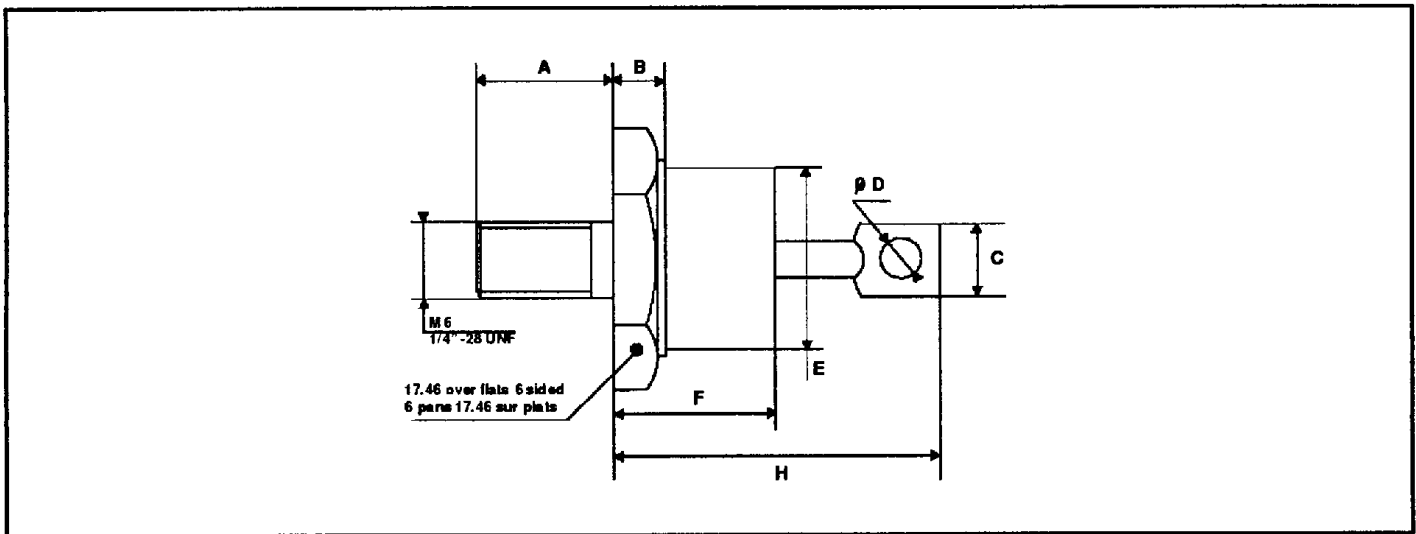


Figure 12. Measurement of t_{rr} (fig. 9) and I_{RM}



PACKAGE MECHANICAL DATA
DO 5 Metal



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	10.72		12.70	0.422		0.500
B	2.93		5.08	0.115		0.200
C			9.52			0.375
D	3.56		4.44	0.140		0.175
E			16.94			0.667
F			12.70			0.500
H			25.40			1

Cooling method: by conduction (method C)
 Marking: Cathode connected to case : type number
 Anode connected to case : type number + suffix R (Consult us for these reverse version datasheets)
 Weight: 18.84g
 Recommended torque value: 250cm. N
 Maximum torque value: 310cm. N

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