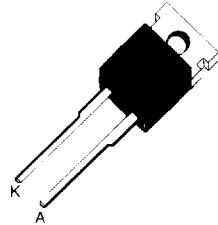




HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

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

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS(limiting values)

Symbol	Parameter	Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	100 A
$I_F (RMS)$	RMS Forward Current		20 A
$I_F (AV)$	Average Forward Current	$T_C = 125^\circ C$ $\delta = 0.5$	8 A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100 A
P_{Tot}	Power Dissipation	$T_C = 100^\circ C$	20 W
T_{stg} T_J	Storage and Junction Temperature Range		- 40 to 150 °C

Symbol	Parameter	BYW 80-				Unit
		50A	100A	150A	200A	
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	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R	T _J = 25°C	V _R = V _{RHM}			10	μA
	T _J = 100°C				1	mA
V _F	T _J = 25°C	I _F = 22A			1.25	V
	T _J = 100°C	I _F = 7A			0.85	

RECOVERY CHARACTERISTICS

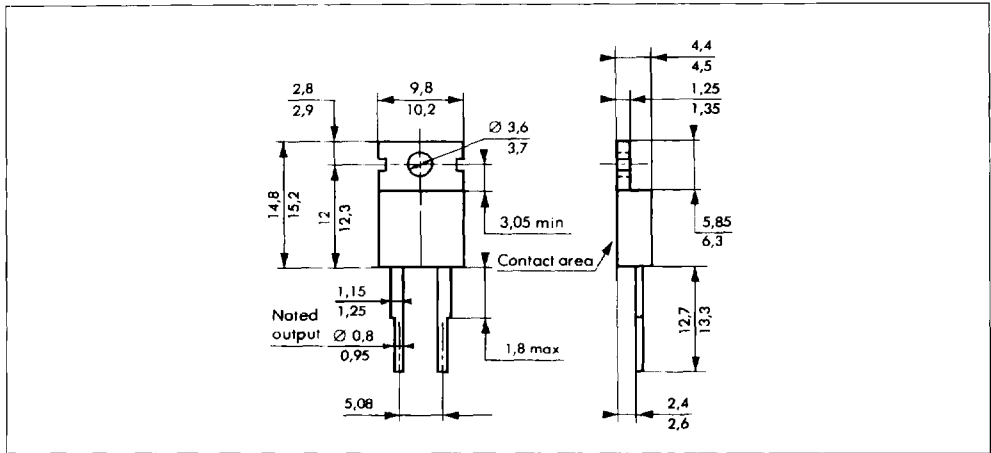
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t _{rr}	T _J = 25°C V _R = 30V	I _F = 1A see figure 12	dI _F /dt = - 50A/μs		35	ns
Q _{rr}	T _J = 25°C V _R ≤ 30V	I _F = 2A	dI _F /dt = - 20A/μs		15	nC
t _{fr}	T _J = 25°C Measured at 1.1 x V _F	I _F = 1A	t _r = 5ns	15		ns
V _{FP}	T _J = 25°C	I _F = 1A	t _r = 5ns	2		V

To evaluate the conduction losses use the following equations :

$$V_F = 0.66 + 0.014 I_F \quad P = 0.66 \times I_{F(AV)} + 0.014 I_F^2 (RMS)$$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2.4g

Recommended torque value : 80cm. N

Maximum torque value : 100cm. N

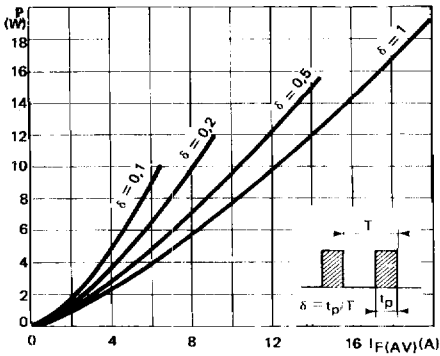


FIGURE 1 : Power losses versus average current

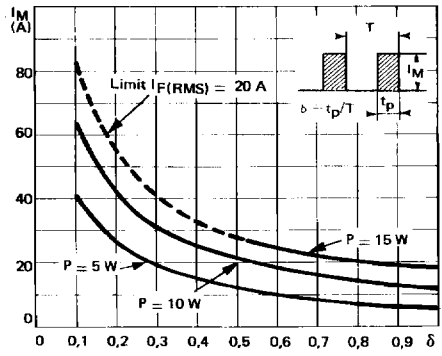


FIGURE 2 : Peak current versus form factor

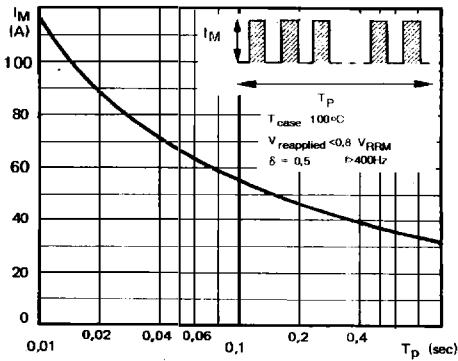


FIGURE 3 : Non repetitive peak surge current versus duration

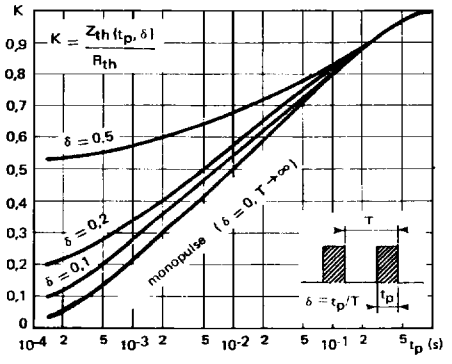


FIGURE 4 : Thermal impedance versus pulse width

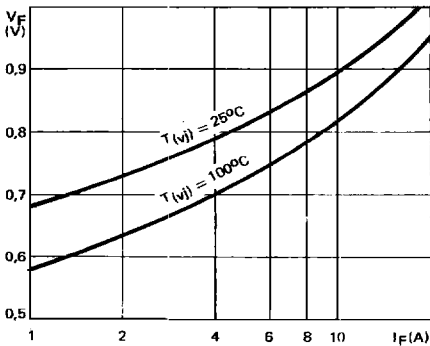


FIGURE 5 : Voltage drop versus forward current

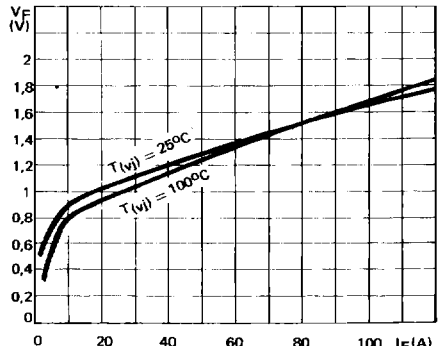


FIGURE 6 : Voltage drop versus forward current

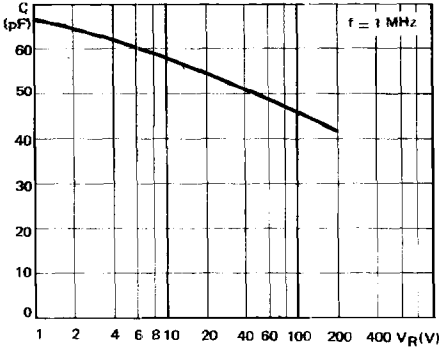


FIGURE 7 : Capacitance versus reverse voltage applied

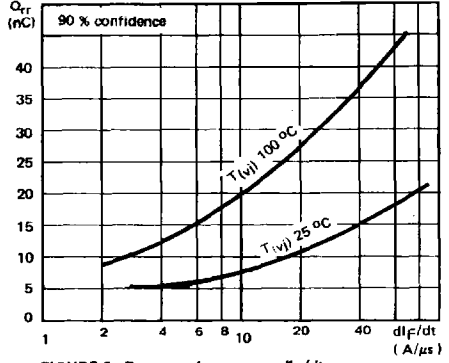


FIGURE 8 : Recovery charge versus di/dt

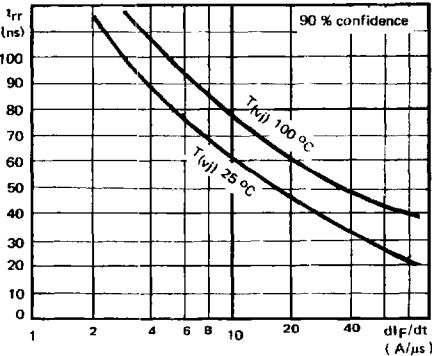


FIGURE 9 : Recovery time versus di/dt

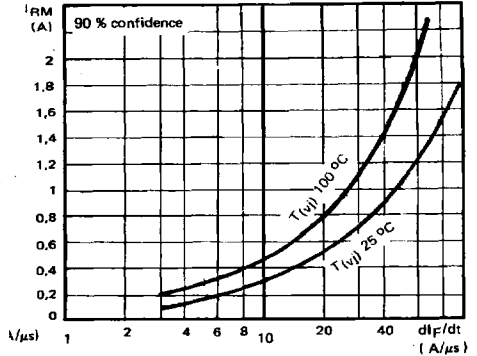


FIGURE 10 : Peak reverse current versus di/dt

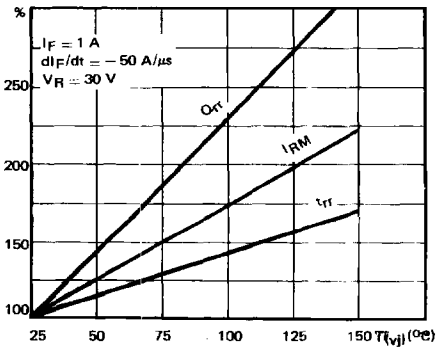


FIGURE 11 : Dynamic parameters versus junction temperature

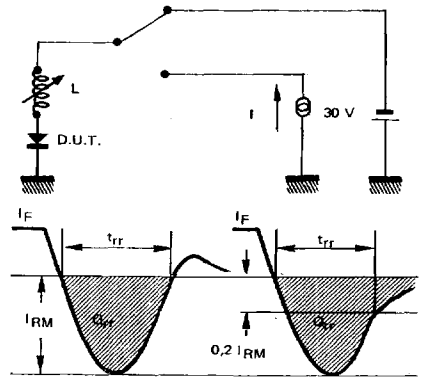


FIGURE 12 : Measurement of trr (fig.9) and IRM