Fast Recovery Silicon Power Diode

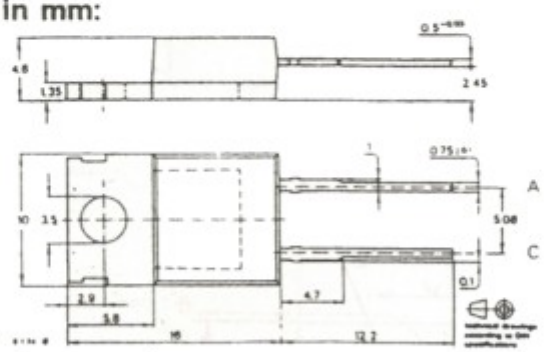
Application:
- Fast switched mode power supplies
- Freewheeling diodes and snubber diodes in motor control circuits

Features:

BYT 08P /600A /800A

- Multiple diffusion
- Mesa glasspassivated
- Low switch on power losses
- Good soft recovery behavior
- Fast forward recovery time
- Fast reverse recovery time
- Low reverse current
- Very low turn on transient peak voltage
- Very good reverse current stability at high temperature
- Low thermal resistance

Dimensions in mm:



Cathode connected with metallic surface

plastic case DO 220

Absolute maximum ratings

		BYT 08P/600	BYT 08P/800	
Reverse voltage, Repetitive peak reverse voltage	$V_R = V_{RRM}$	600	800	V
Surge forward current $t_p = 10$ ms	I_{FSM}		50	A
Repetitive peak forward current	I_{FRM}		16	A
Junction temperature	T_j		150	°C
Storage temperature	T_{stg}	-40... + 150		°C

Maximum thermal resistances

Junction case	R_{thJC}	2.0	K/W
Junction ambient	R_{thJA}	85	K/W

Characteristics

T_j = 25°C, unless otherwise specified

		Typ.	Max.	
Forward voltage				
I_F = 8 A	V_F		1.7	V
I_F = 8 A, T_j = 100 °C	V_F		1.6	V
Reverse current				
$V_R = V_{RRM}$	I_R		35	µA
$V_R = V_{RRM}$, T_j = 100 °C	I_R		2	mA
Forward recovery time				
I_F = 8 A, $di_F/dt \leq$ 50 A/µs	t_{fr}	350		ns
Turn ON transient peak voltage, Fig.1	V_{FP}		4,5	V
Turn OFF switching characteristic Fig.2				
I_F = 8 A, $di_F/dt \leq$ -32 A/µs, V_{Batt} = 200 V, T_j = 100 °C				
Reverse recovery current	I_{RM}		4	A
Reverse recovery time	t_{rRM}		160	ns
$i_R = 0{,}25 \times I_{RM}$	t_{rr}	100		ns
I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A	t_{rr}		50	ns

Turn OFF switching characteristic Fig.2

I_F = 1 A, $di_F/dt \leq$ -50 A/µs,
V_{Batt} = 200 V,

Reverse recovery current	I_{RM}	1.7	A
Reverse recovery time			
$I_R = 0{,}25 \times I_{RM}$	t_{rr}	75	ns

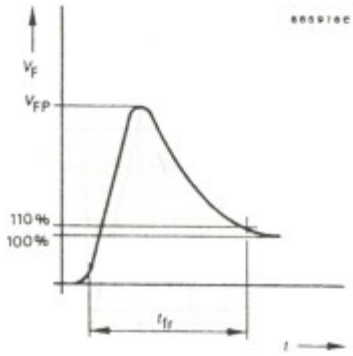


Fig. 1 Turn ON transient peak voltage

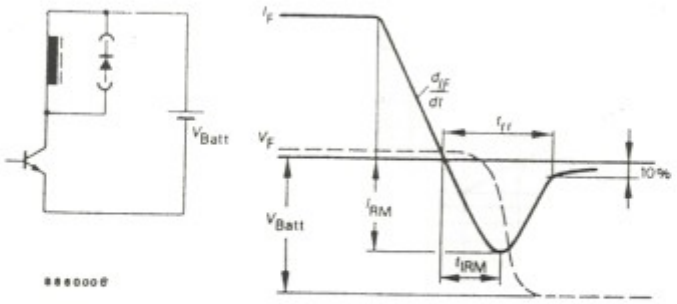
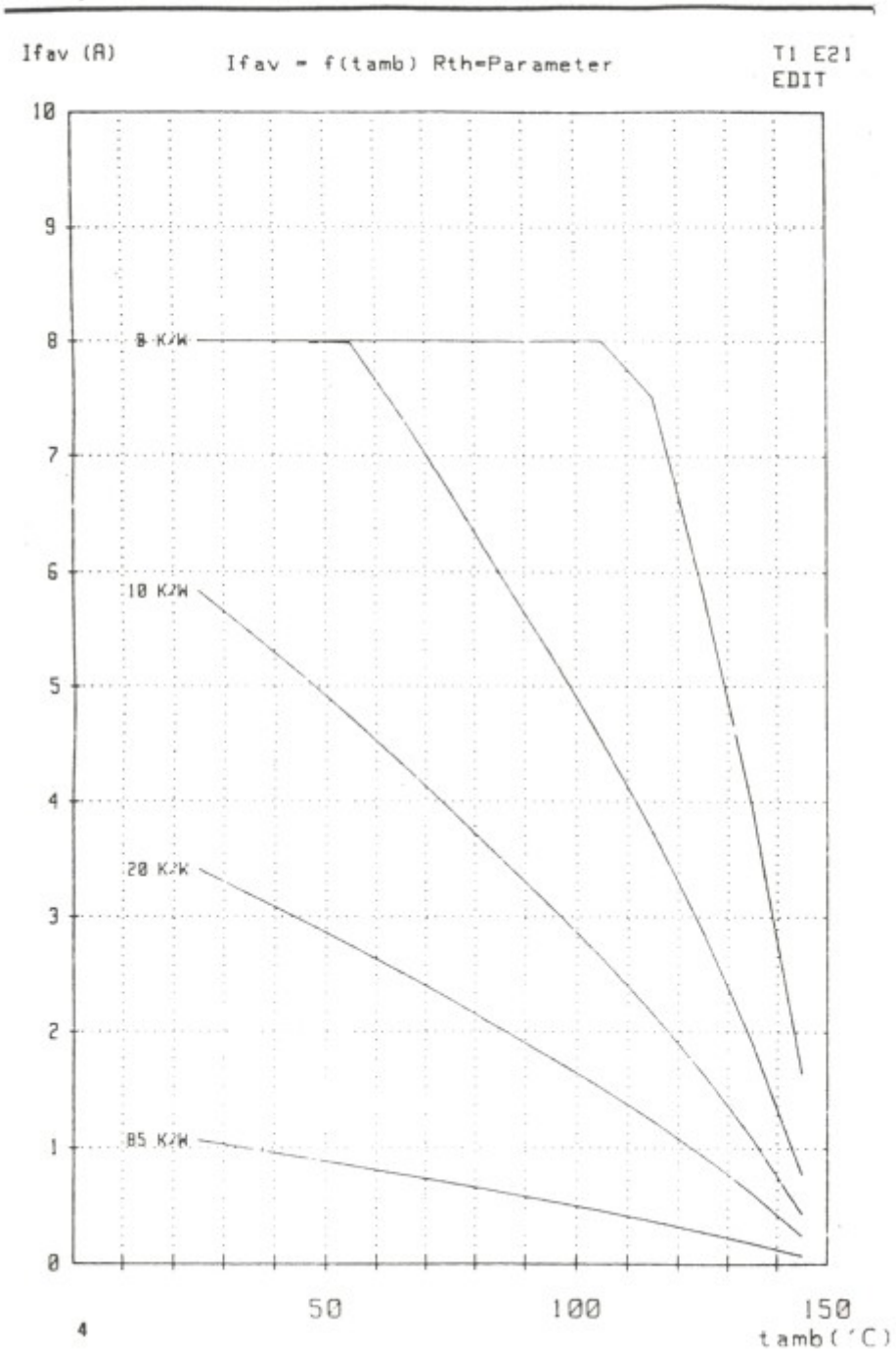
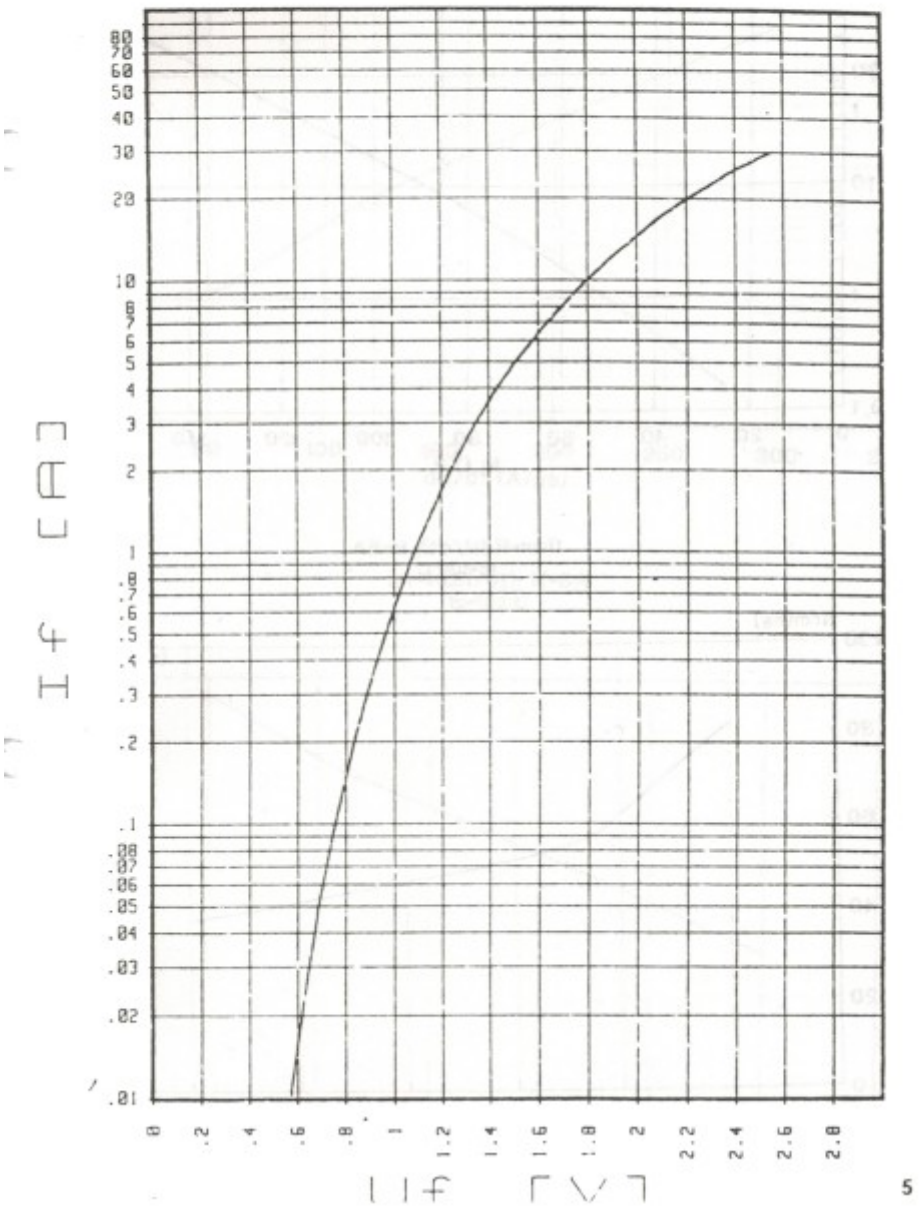


Fig. 2 Test circuit

BYT 08P /600A /800A

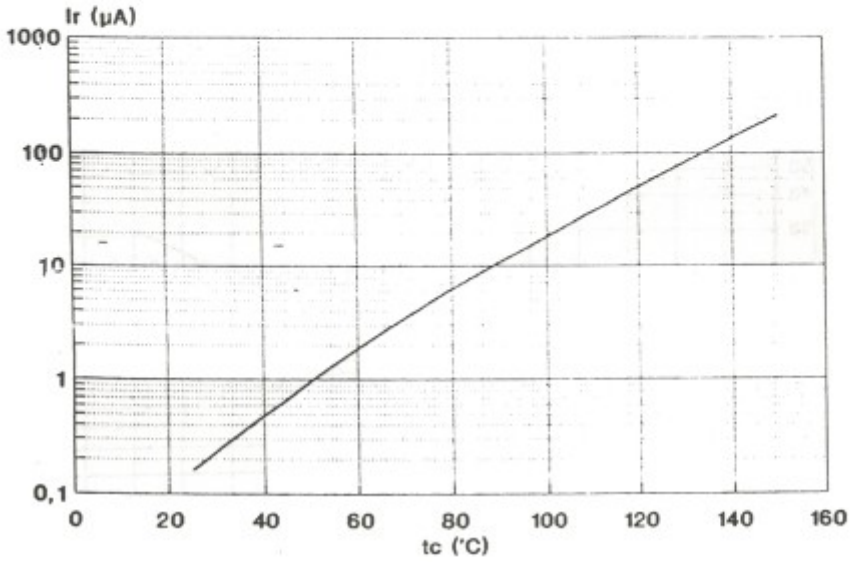


Uf = f(If)

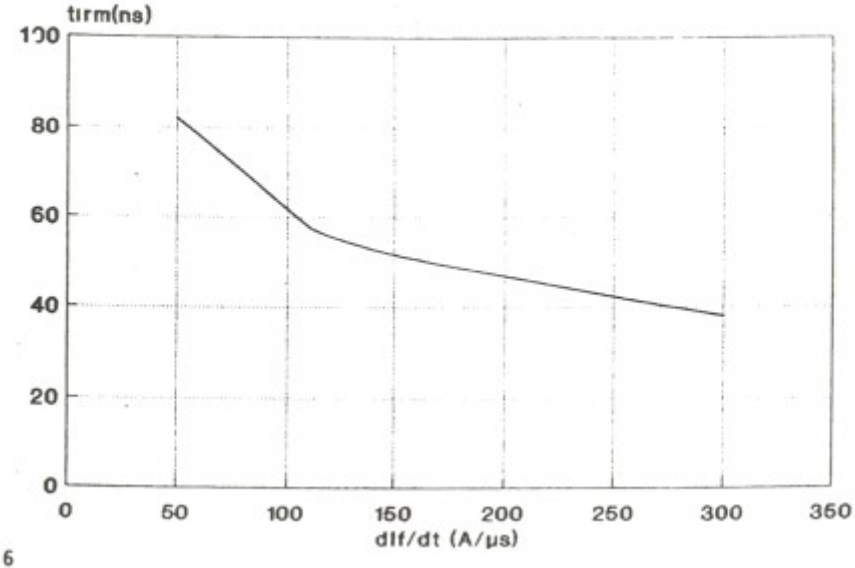


BYT 08P /600A /800A

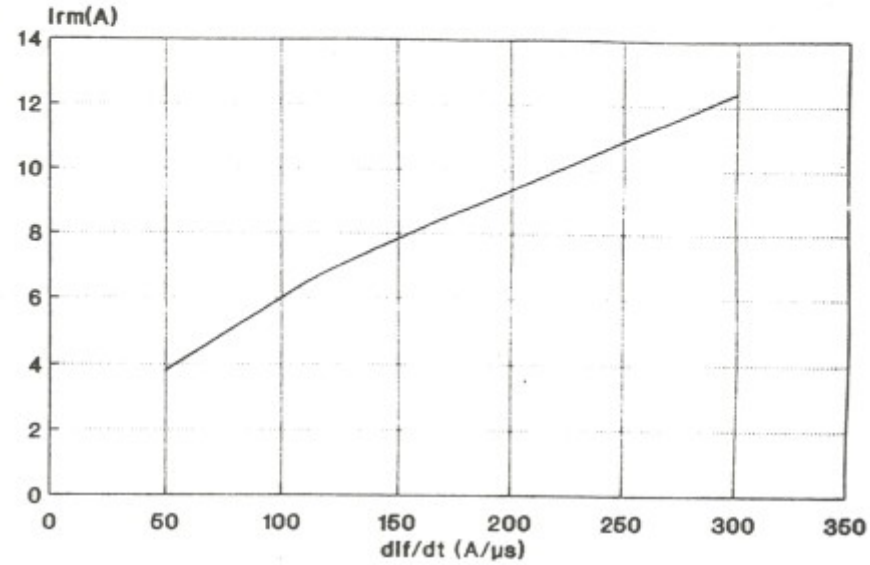
Ir=f(tc); Ur=Parameter



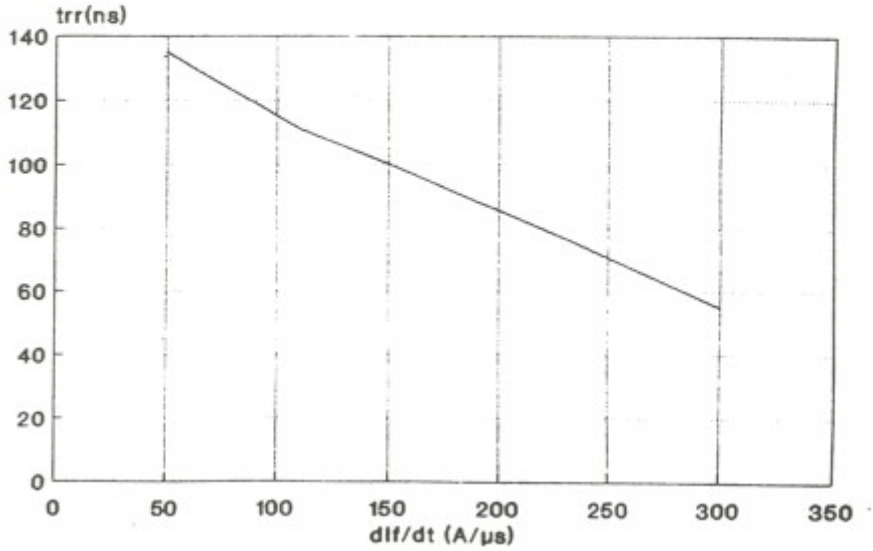
trrm=f(dIf/dt); If=8A
tc=100°C



Irm=f(dIf/dt); If=8A
tc=100°C



trr=f(dIf/dt); If=8A
tc=100°C



BYT 08P /600A /800A

Qrr=f(dIf/dt); If=8A
tc=100°C