

Silicon Diode

BYT08P/600A

600V / 16A

DATASHEET

OEM – Temic

Source: Temic Datasheet Paperware

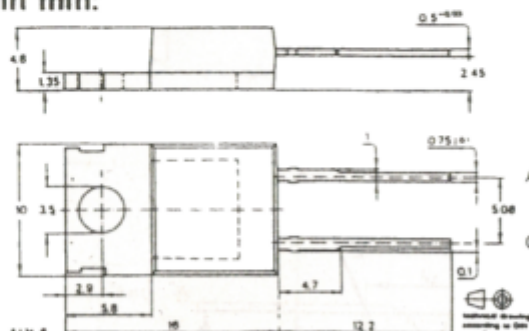
Fast Recovery Silicon Power Diode

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

- Features:**
- 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

BYT 08P /600A /800A

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
Surge forward current			
$t_D = 10$ ms	I_{FSM}	50	A
Repetitive peak forward current	I_{FRM}	16	A
Junction temperature	T_J	150	°C
Storage temperature	T_{sig}	-40... + 150	°C

BYT 08P /600A /800A**Maximum thermal resistances**

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

Characteristics

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

BYT 08P /600A /800A

Turn OFF switching characteristic Fig.2

$$I_F = 1 \text{ A, } di_F/dt \leq -50 \text{ A}/\mu\text{s,}$$

$$V_{\text{Batt}} = 200 \text{ V,}$$

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

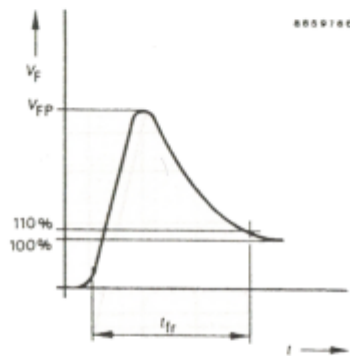


Fig. 1 Turn ON transient peak voltage

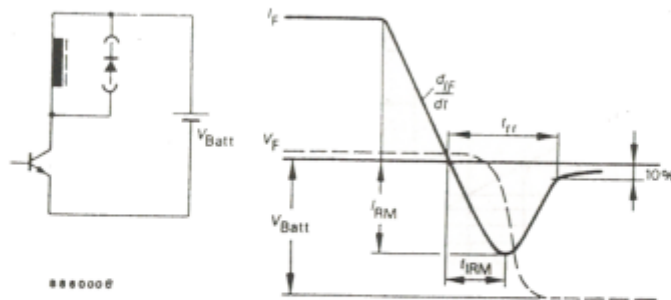
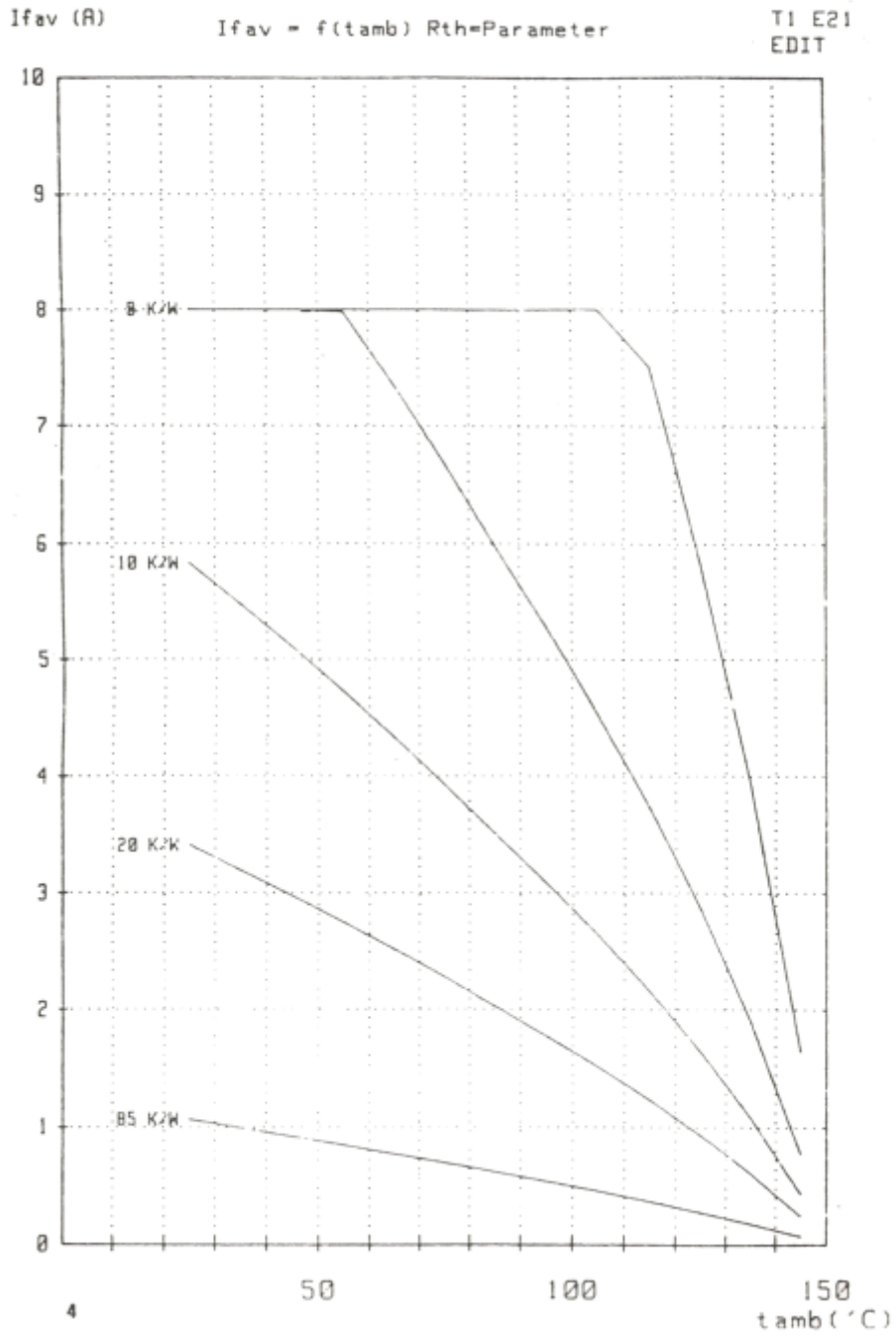


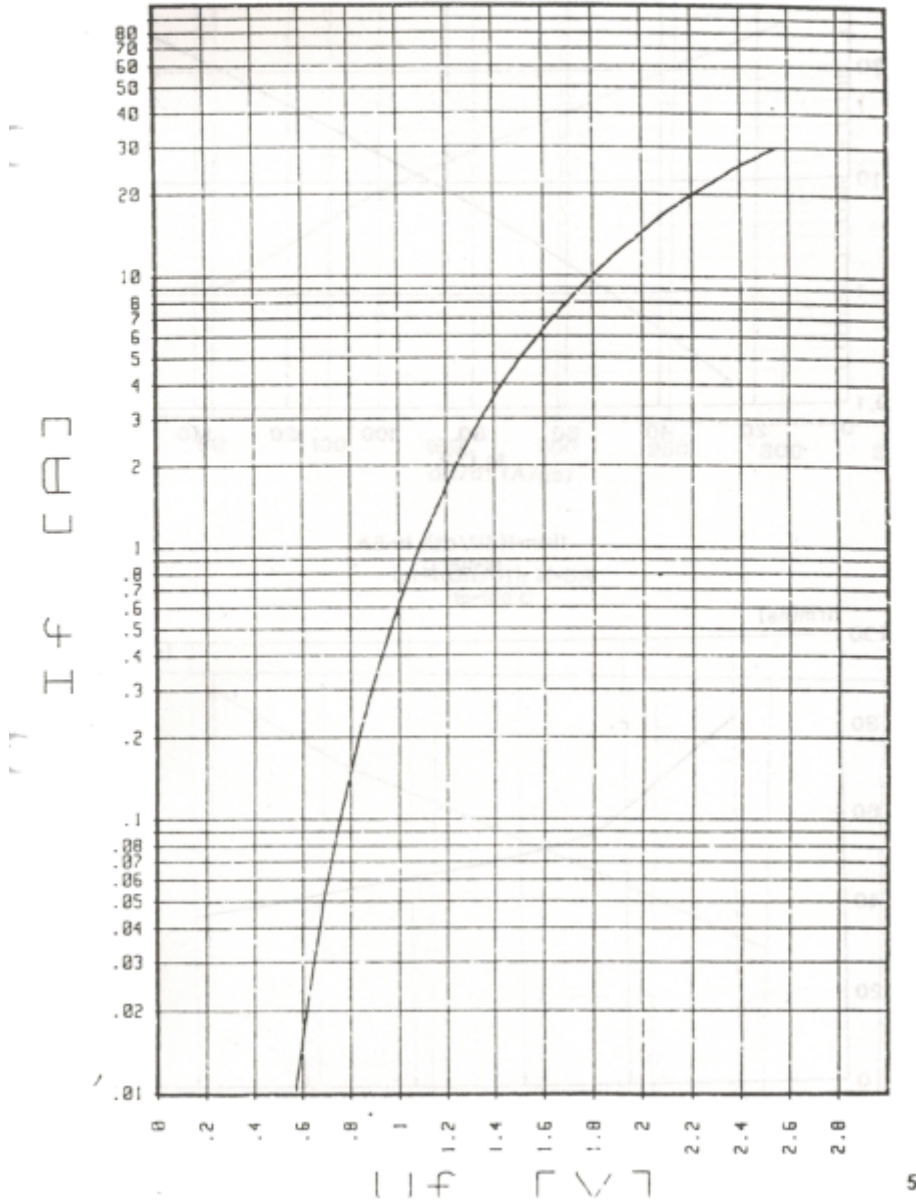
Fig. 2 Test circuit

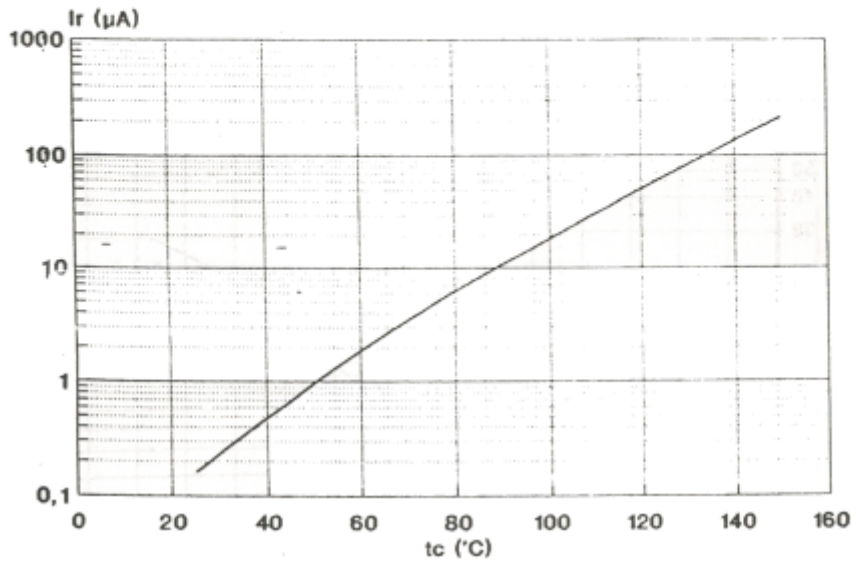
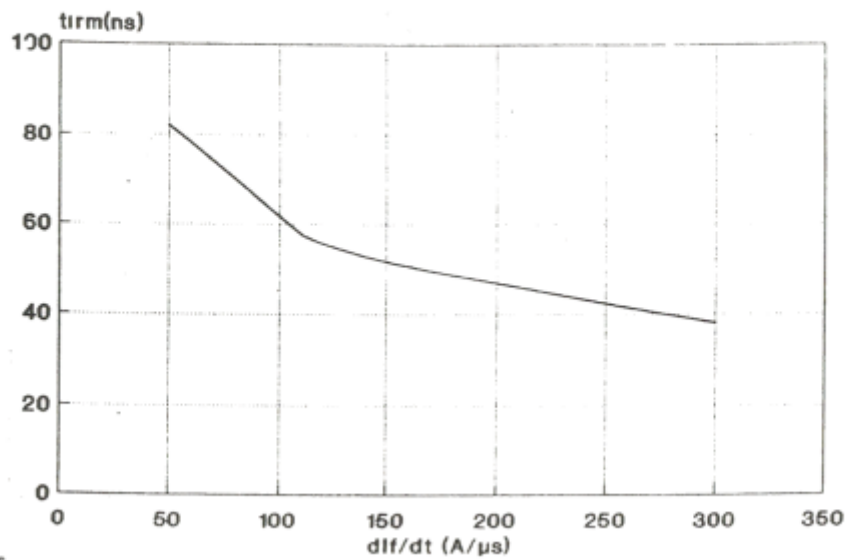
BYT 08P /600A /800A



BYT 08P /600A /800A

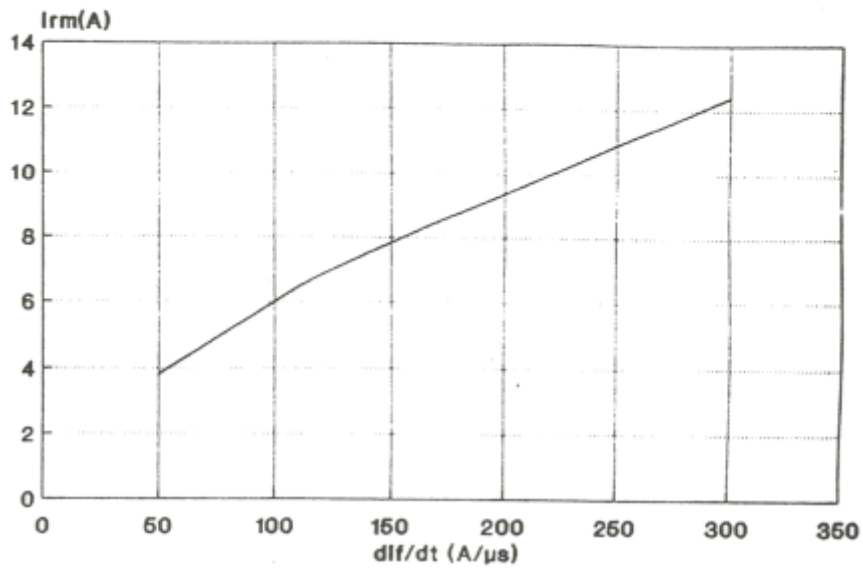
$$U_f = f(I_f)$$



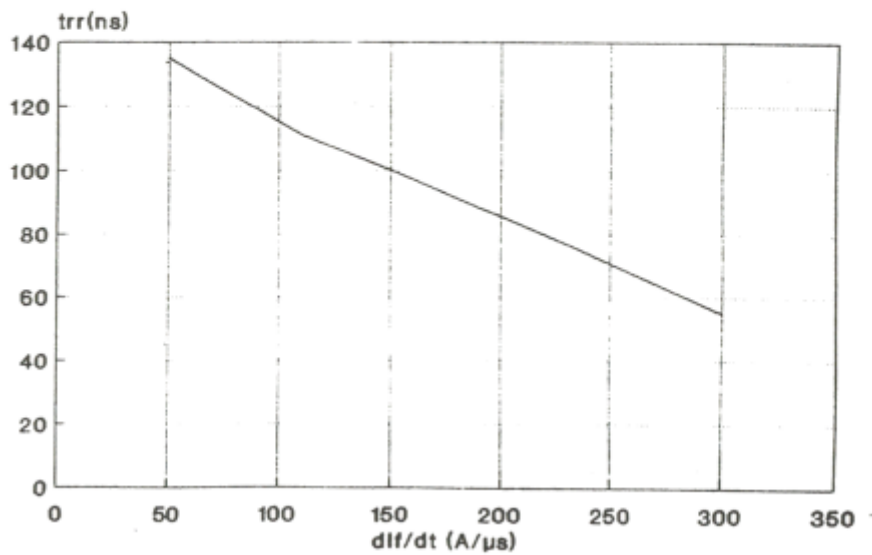
BYT 08P /600A /800A **$I_r=f(t_c)$; U_r -Parameter** **$t_{irm}=f(dI_f/dt)$; $I_f=8\text{A}$
 $t_c=100^\circ\text{C}$** 

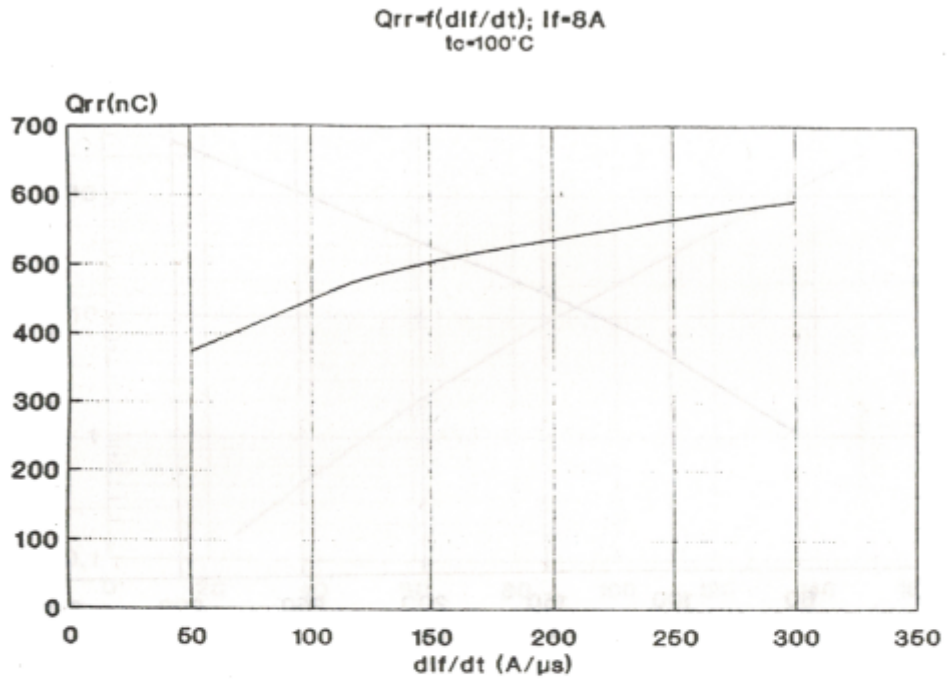
BYT 08P /600A /800A

$I_{rm} = f(dI_f/dt)$; $I_f = 8A$
 $t_c = 100^\circ C$



$t_{rr} = f(dI_f/dt)$; $I_f = 8A$
 $t_c = 100^\circ C$



BYT 08P /600A /800A

We reserve the right to improve technical design
TELEFUNKEN electronic GmbH, P.O.B. 3535, D-7100 Heilbronn