

# Silicon Diode

## **BYT08P/800A**

800V / 16A

# DATASHEET

OEM – Temic

Source: Temic Datasheet Paperware

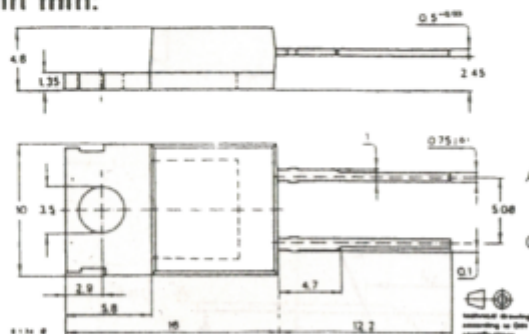
## Fast Recovery Silicon Power Diode

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

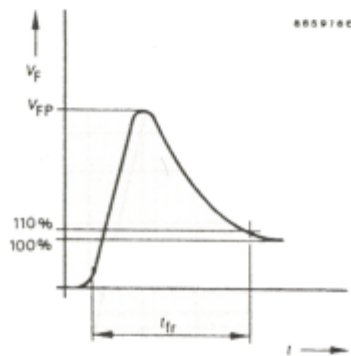


Fig. 1 Turn ON transient peak voltage

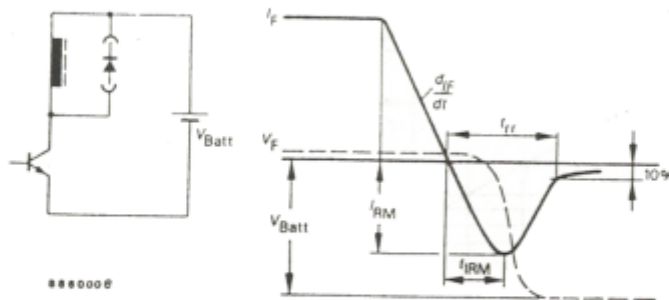
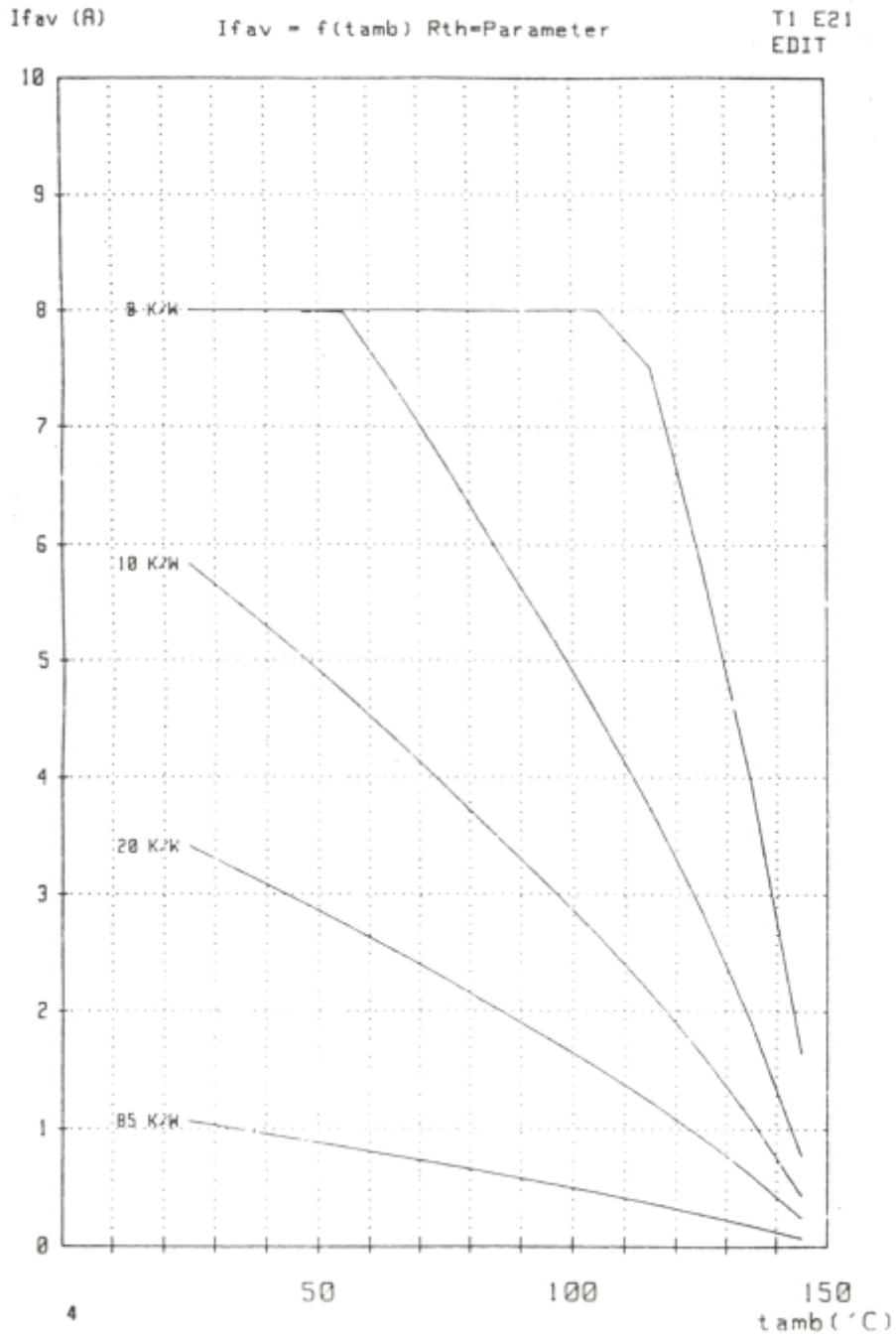


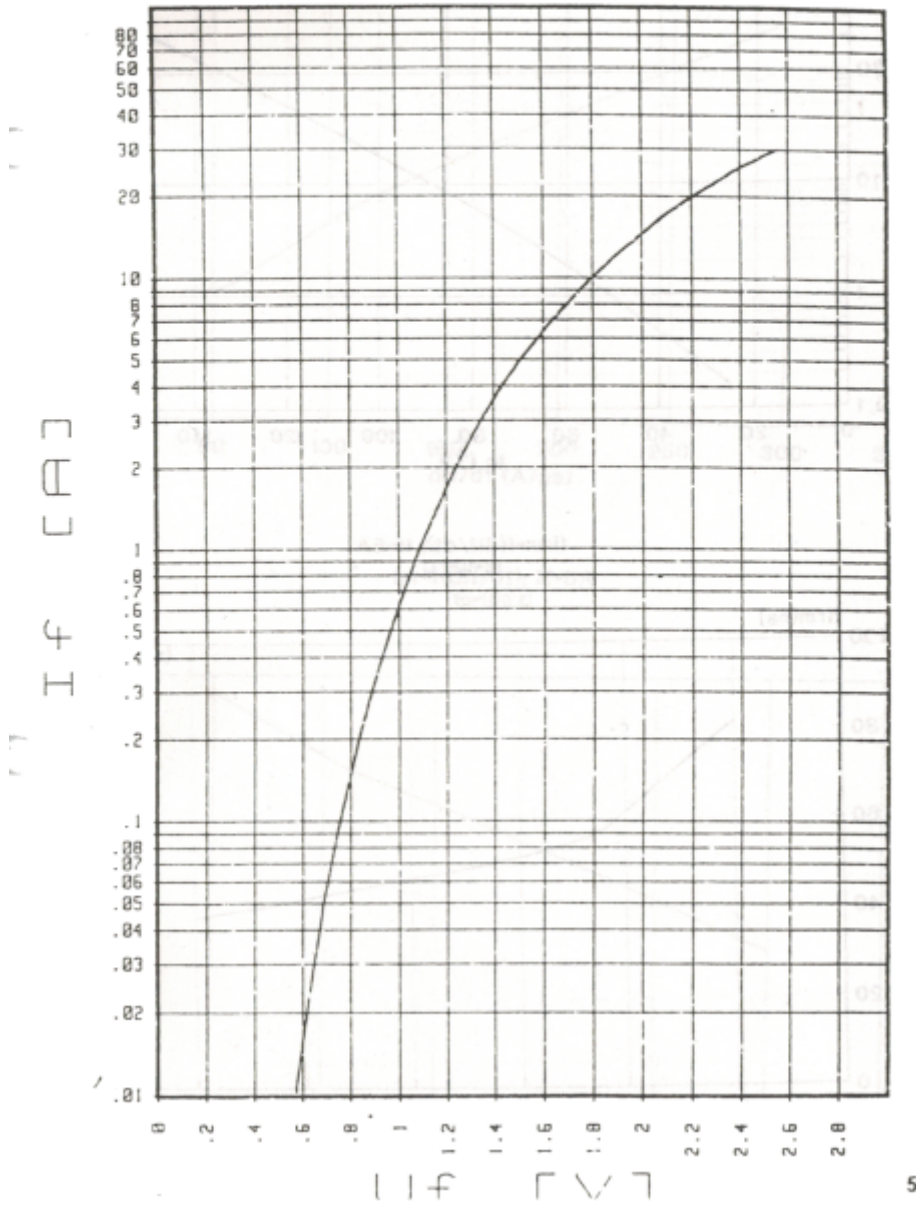
Fig. 2 Test circuit

### BYT 08P /600A /800A



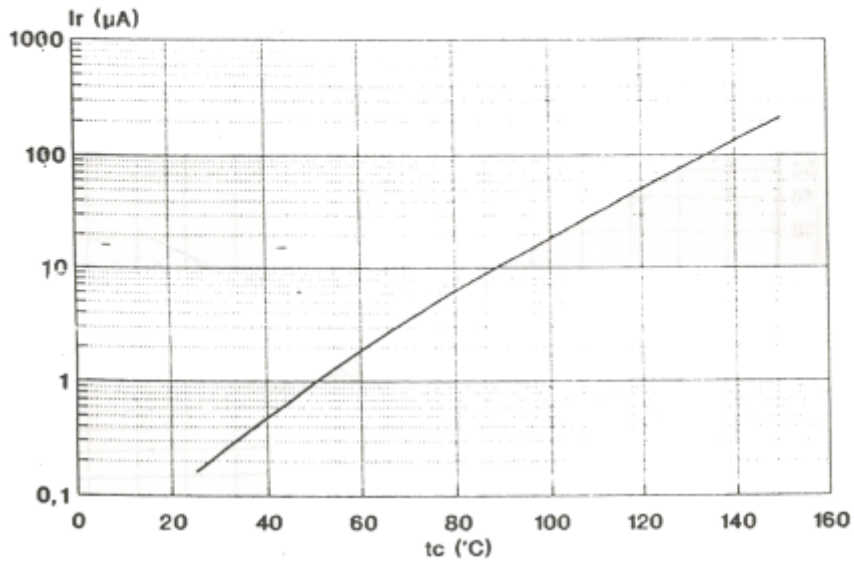
### BYT 08P /600A /800A

$$U_f = f(I_f)$$

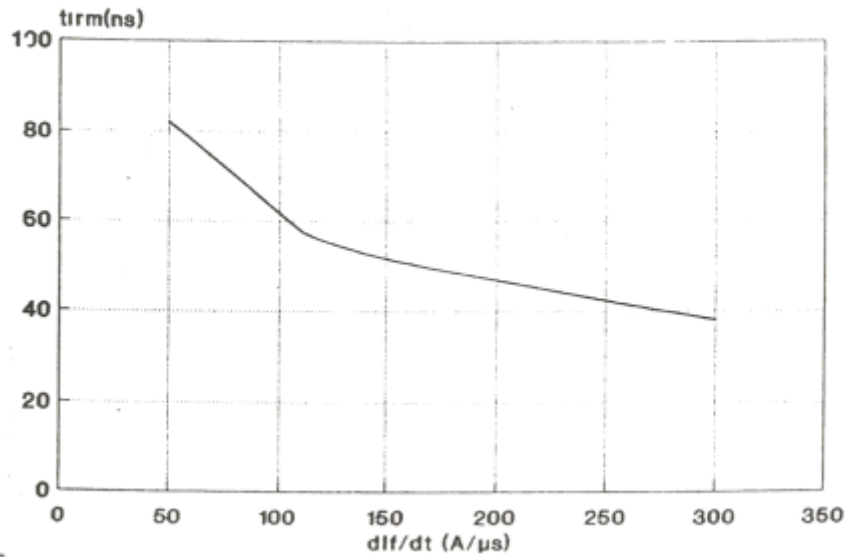


### BYT 08P /600A /800A

$I_r=f(t_c)$ ;  $U_r$ -Parameter

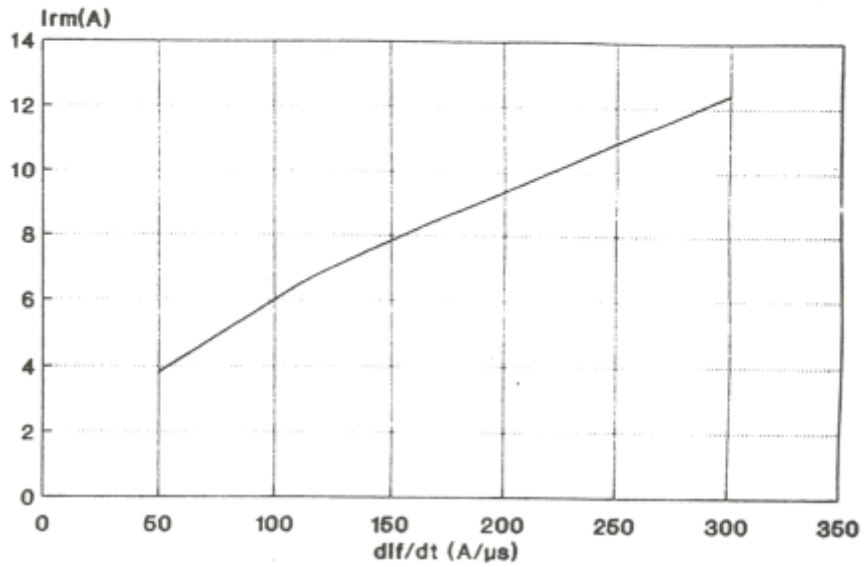


$t_{irm}=f(dI_f/dt)$ ;  $I_f=8A$   
 $t_c=100^{\circ}C$

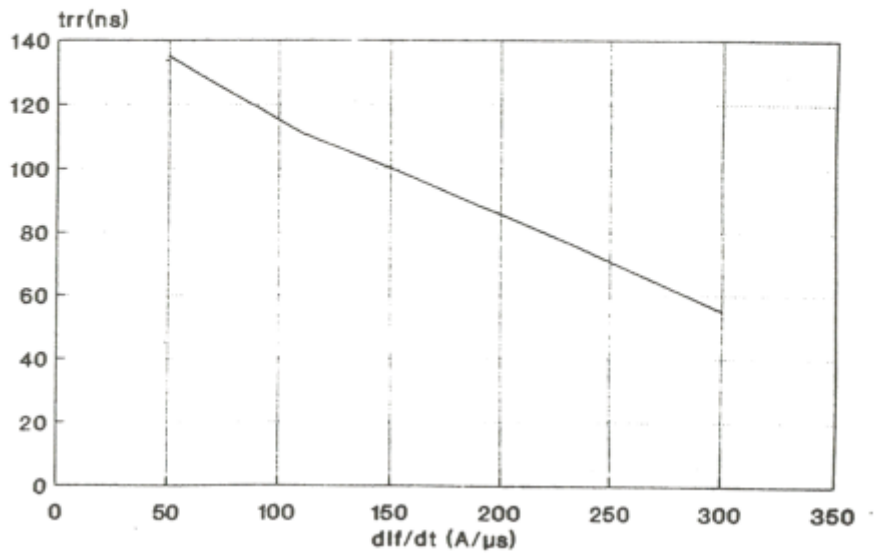


**BYT 08P /600A /800A**

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



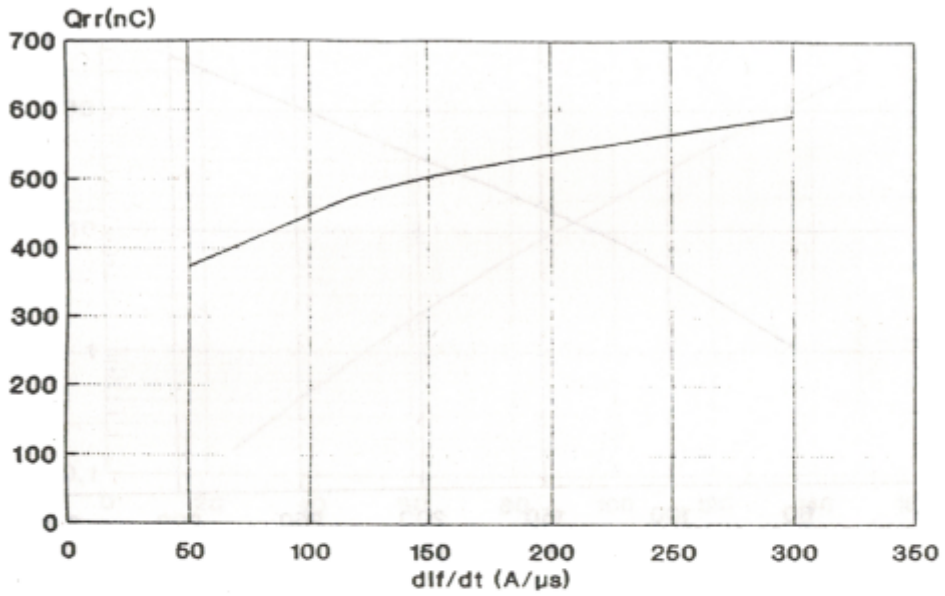
$t_{rr} = f(dI_f/dt)$ ;  $I_f = 8A$   
 $t_c = 100^\circ C$





# BYT 08P /600A /800A

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



We reserve the right to improve technical design  
TELEFUNKEN electronic GmbH, P.O.B. 3535, D-7 100 Heilbronn