

Silicon Diode

BYT08P/1000A

1000V / 16A

DATASHEET

OEM – Temic

Source: Temic Datasheet Paperware

BYT 08P / 1000A

Fast Recovery Silicon Power Diode

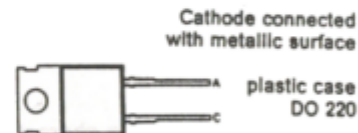
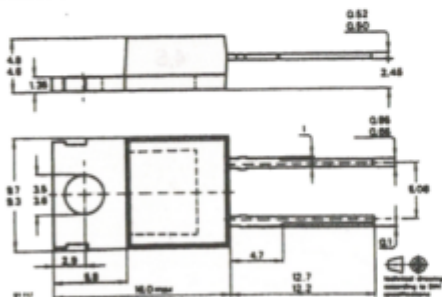
Application:

- 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

Dimensions in mm:



Absolute maximum ratings

Reverse voltage,

Repetitive peak reverse voltage $V_R = V_{RRM}$ 1000 V

Surge forward current

$t_p = 10$ ms I_{FSM} 50 A

Repetitive peak forward current I_{FRM} 16 A

Average forward current I_{FAV} 8 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

$T_J = 25^\circ\text{C}$, unless otherwise specified

		Typ.	Max.	
Forward voltage				
$I_F = 8\text{ A}$	V_F		1.9	V
$I_F = 8\text{ A}, T_J = 100^\circ\text{C}$	V_F		1.8	V
Reverse current				
$V_R = V_{RRM}$	I_R		35	μA
$V_R = V_{RRM}, T_J = 100^\circ\text{C}$	I_R		2.5	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}		5.5	A
Reverse recovery time	t_{IRM}		200	ns
$I_R = 0,25 \times I_{RM}$	t_{rr}	120		ns
$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$	t_{rr}		65	ns

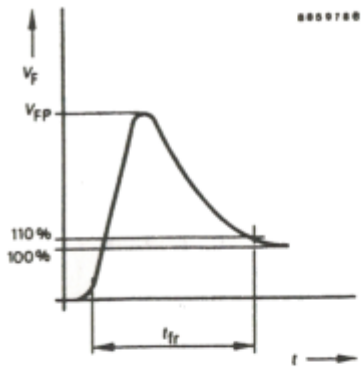


Fig. 1 Turn ON transient peak voltage

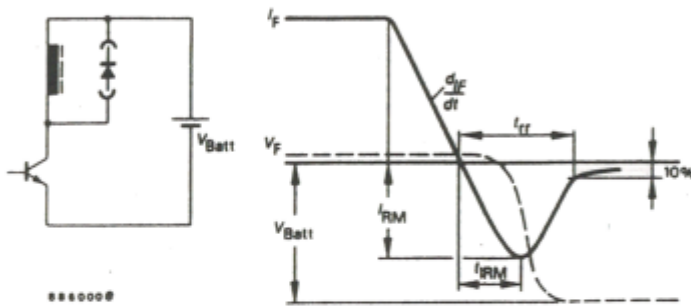
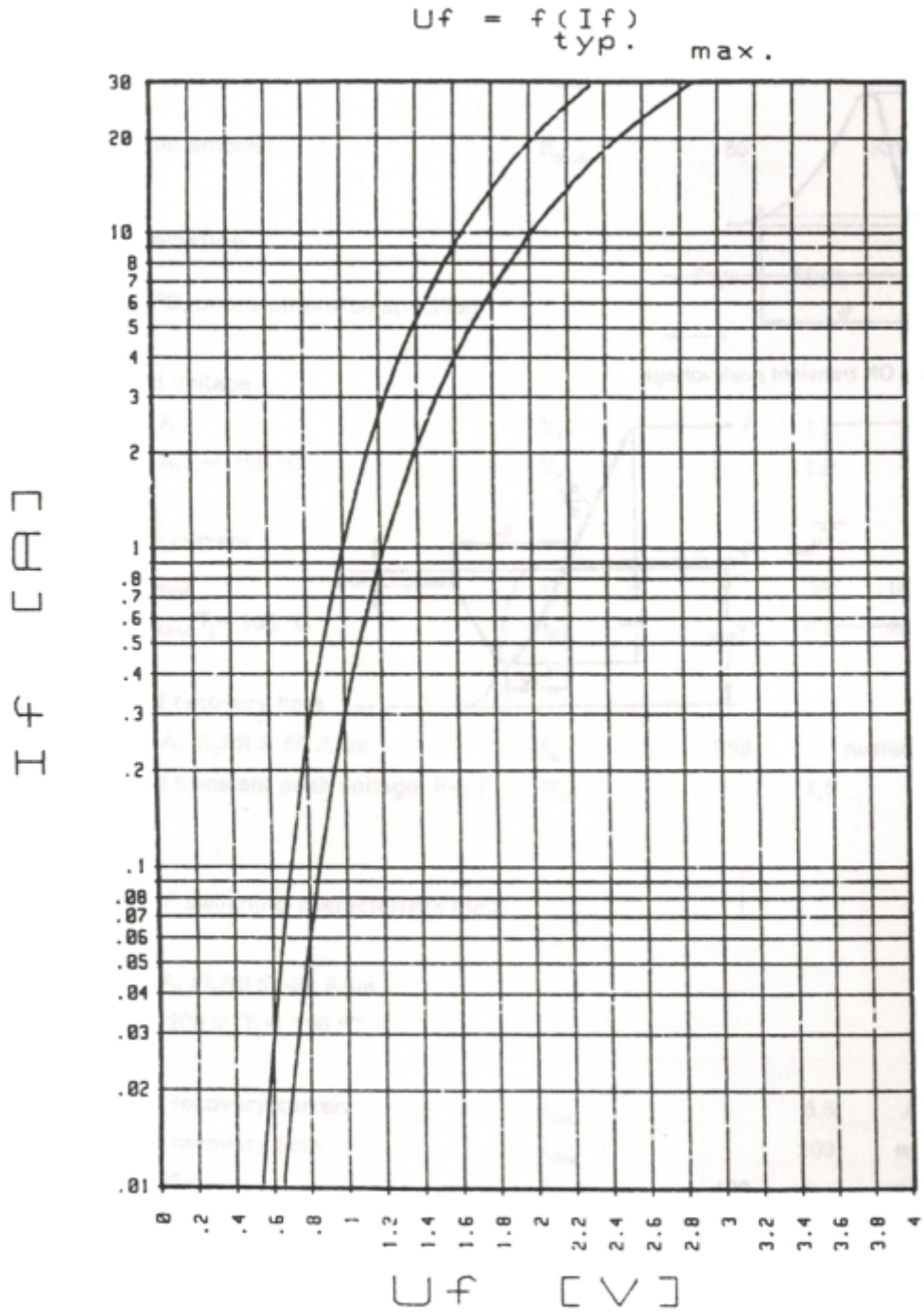
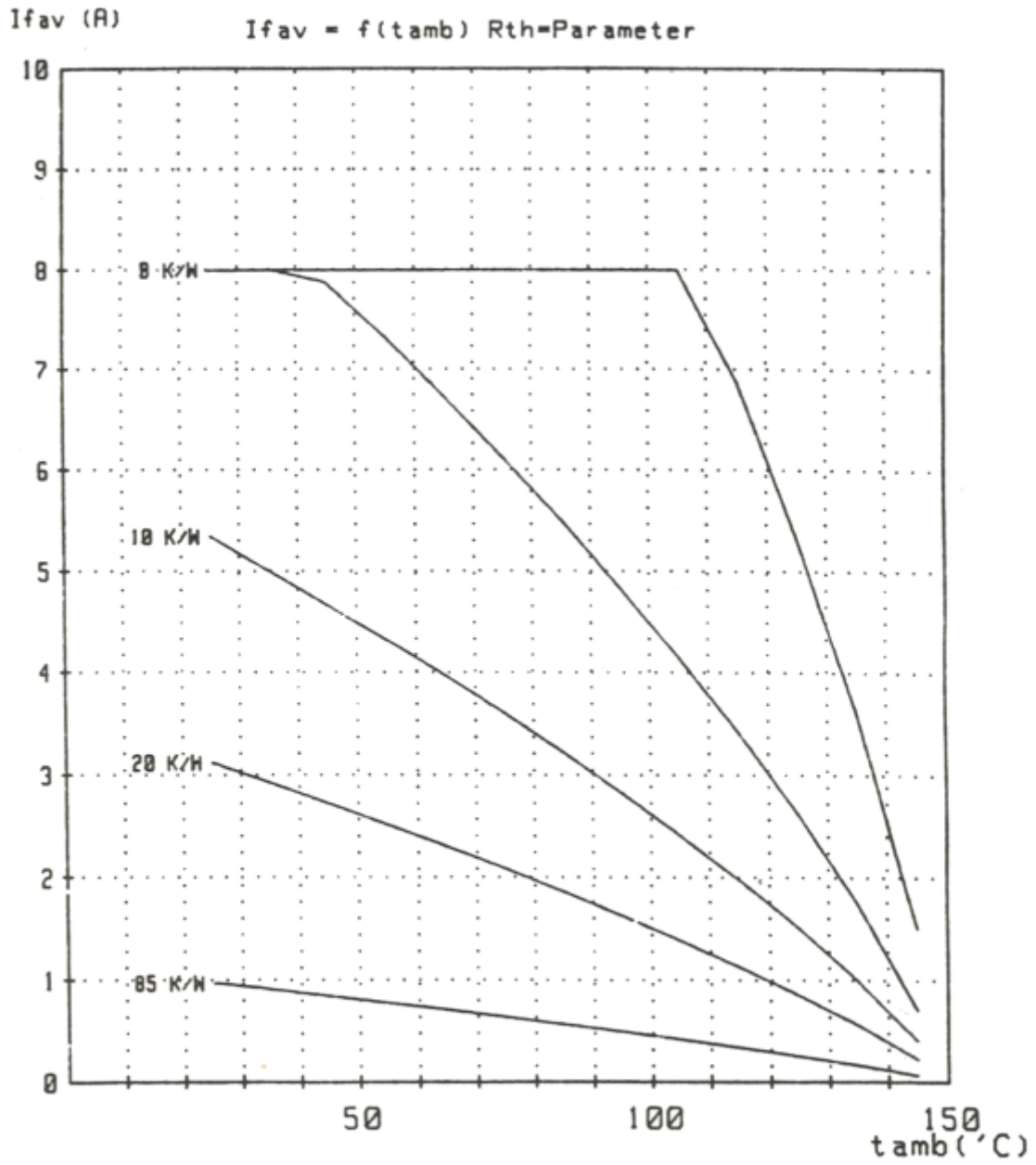
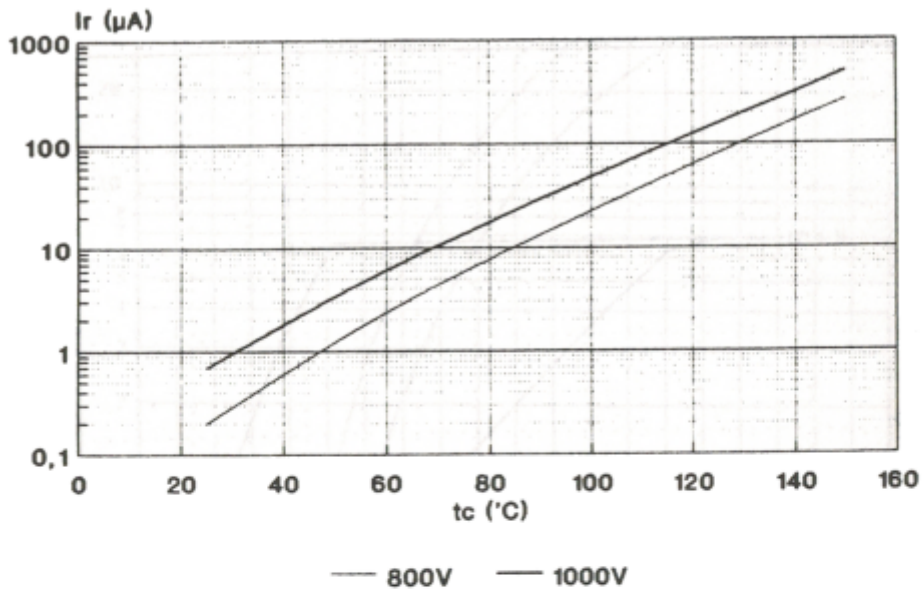


Fig. 2 Test circuit

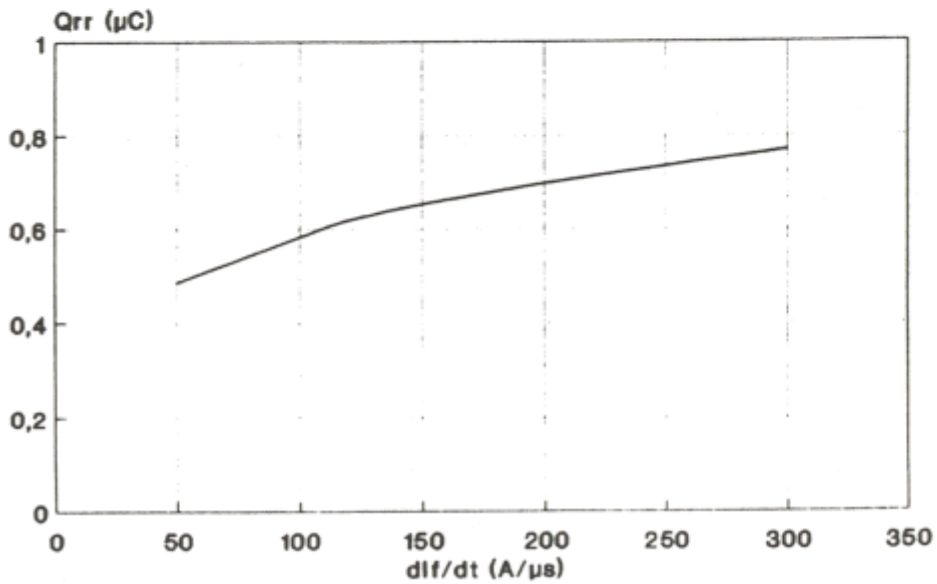




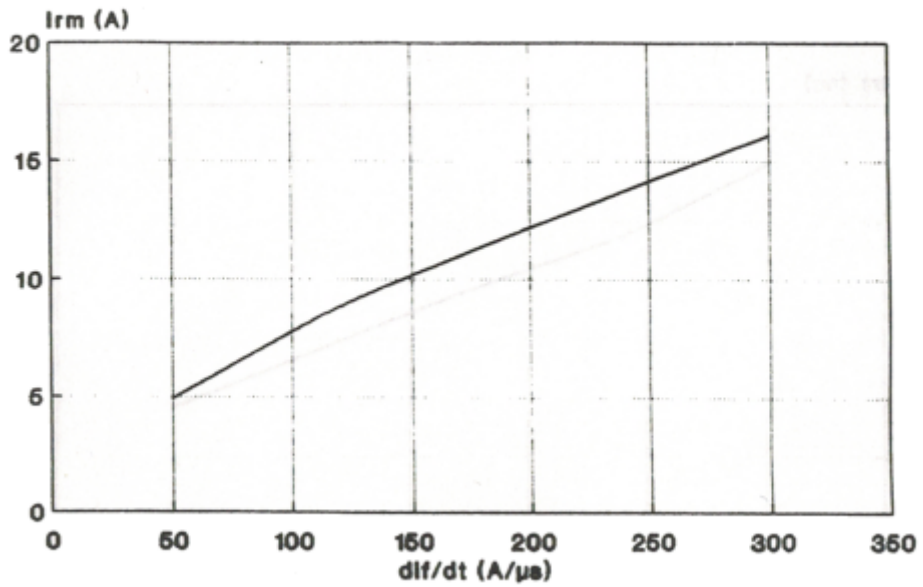
$I_r=f(t_c); U_r=Parameter$



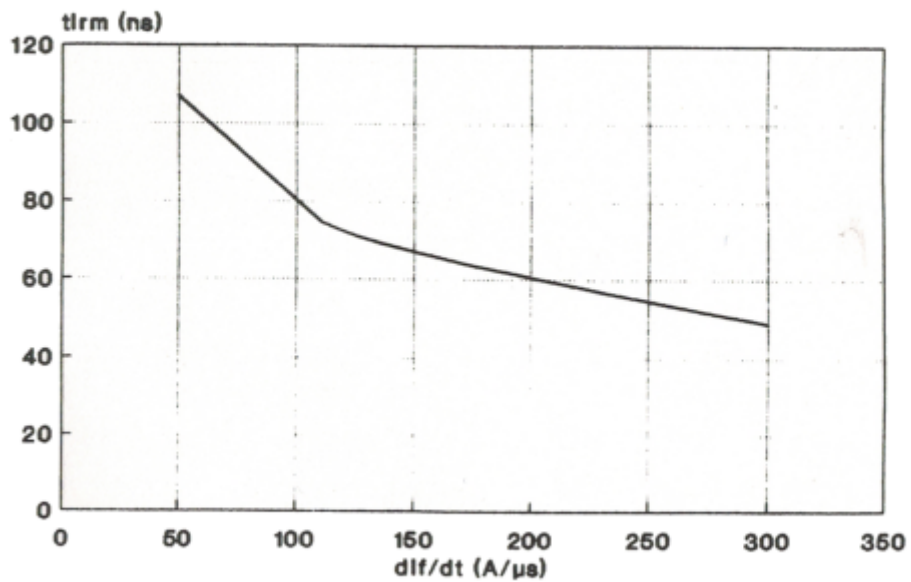
$Q_{rr}=f(dI_f/dt); I_f=8A$
 $t_c=100^{\circ}C$



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



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



BYT 08P / 1000A



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

