

Silicon Diode

BYT108/200

200V / 40A

DATASHEET

OEM – Temic

Source: Temic Datasheet Paperware

Ultra Fast Recovery Silicon Power Diode

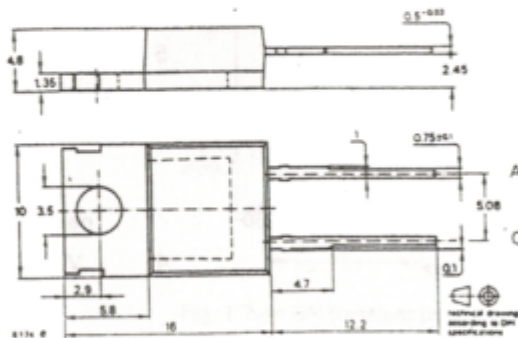
Application:

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

Features:

- Multiple diffusion
- Epitaxial - Planar
- Fast forward recovery time
- Fast reverse recovery time
- Low reverse current
- 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

Reverse voltage,

Repetitive peak reverse voltage

BYT 108 /200	$V_R = V_{RRM}$	200	V
BYT 108 /400	$V_R = V_{RRM}$	400	V

Surge forward current

$t_p = 10$ ms

I_{FSM}	100	A
-----------	-----	---

Repetitive peak forward current

I_{FRM}	40	A
-----------	----	---

Average forward current

I_{FAV}	8	A
-----------	---	---

Junction temperature

T_J	150	°C
-------	-----	----

Storage temperature

T_{stg}	-65... +150	°C
-----------	-------------	----

Maximum thermal resistances

Junction case	R_{thJC}	2.4	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	1.3	V
$I_F = 8\text{ A}, T_J = 100^\circ\text{C}$	V_F	1.2	V
Reverse current			
$V_R = V_{RRM}$	I_R	5	μA
$V_R = V_{RRM}, T_J = 150^\circ\text{C}$	I_R	1	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	V
Turn OFF switching characteristic Fig.2			
$I_F = 8\text{ A}, di_F/dt \leq -50\text{ A}/\mu\text{s},$			
$V_{Batt} = 200\text{V}$			
Reverse recovery current	I_{RM}	5	A
Reverse recovery time	t_{IRM}	100	ns
$I_F = 0.5\text{A}, I_R = 1\text{A}, i_R = 0.25\text{A}$	t_{rr}	35	ns

Turn OFF switching characteristic Fig.2

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

		Typ.	Max.
Reverse recovery current	I_{RM}	1.9	A
Reverse recovery time	t_{rr}	58	ns
	$i_R = 0,25 \times I_{RM}$		

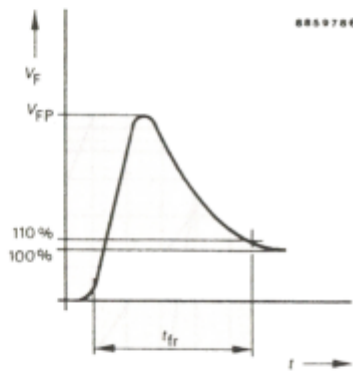


Fig. 1 Turn ON transient peak voltage

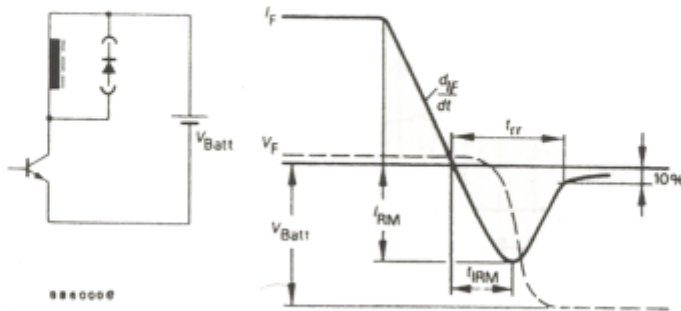
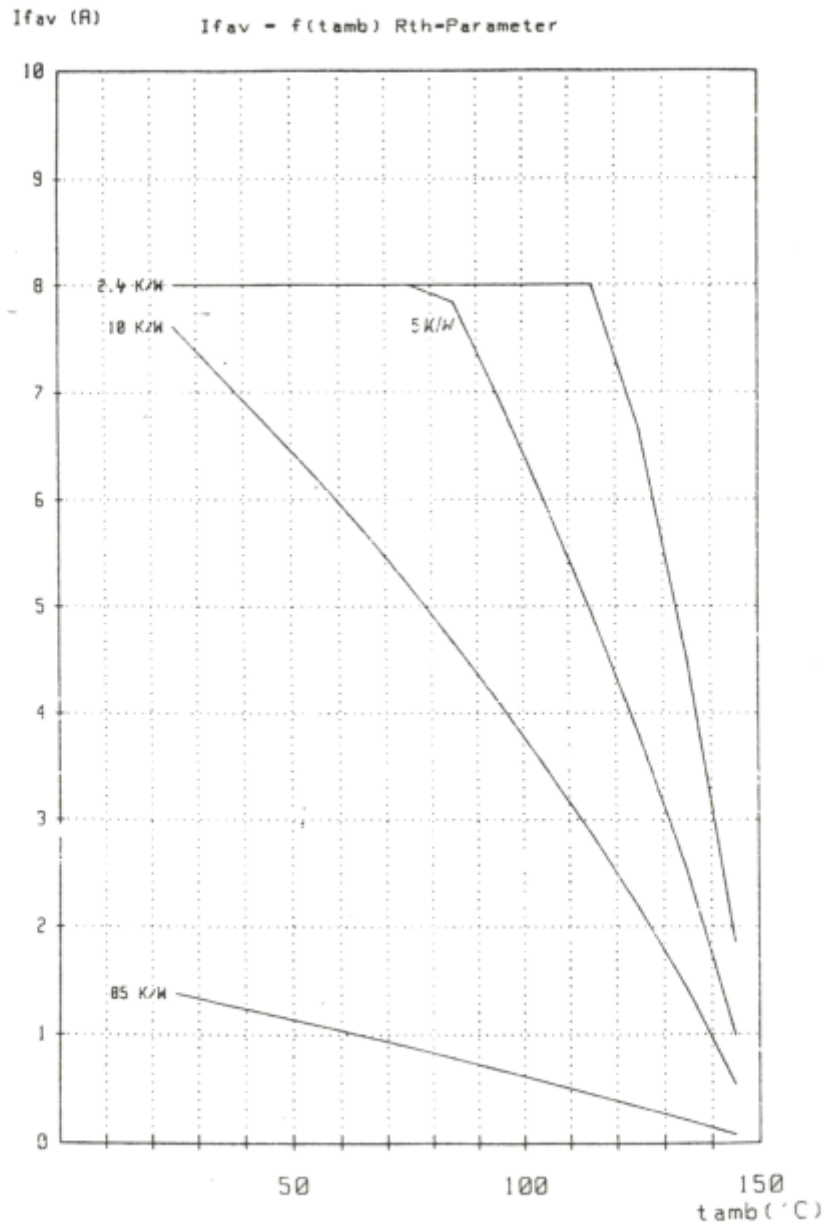
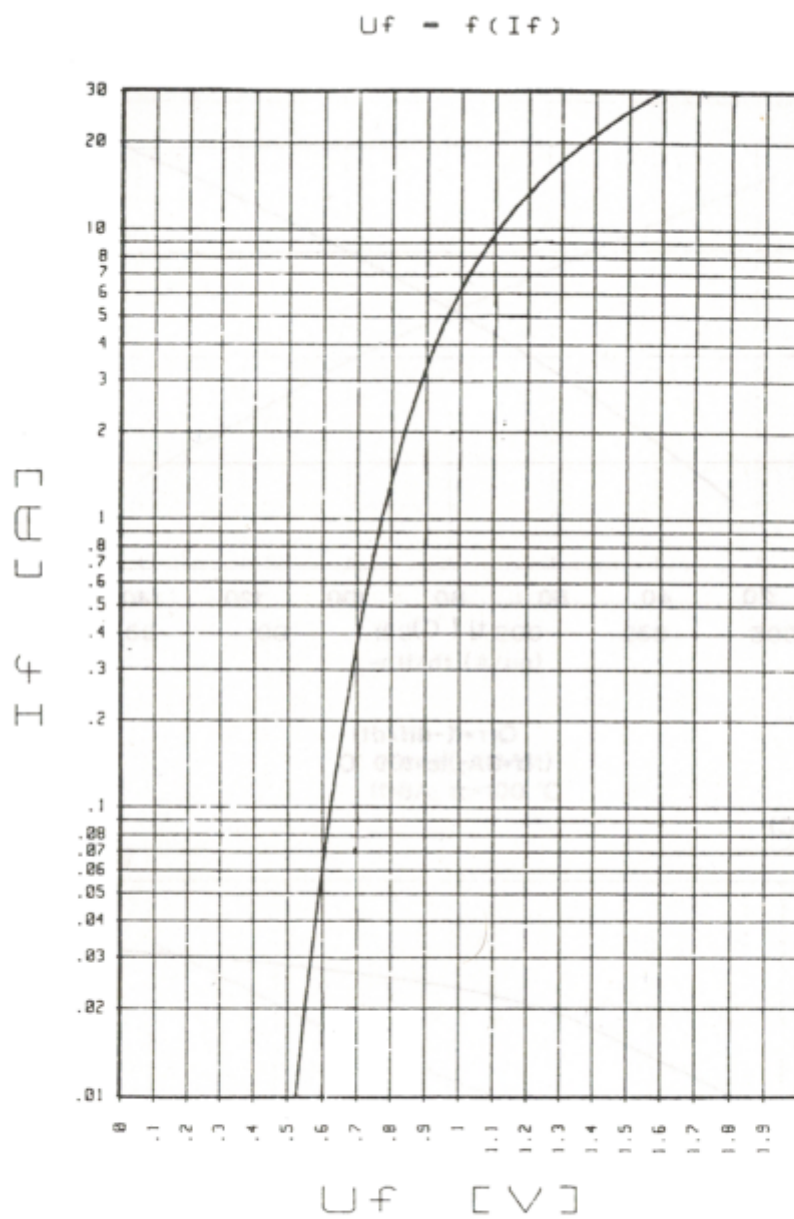
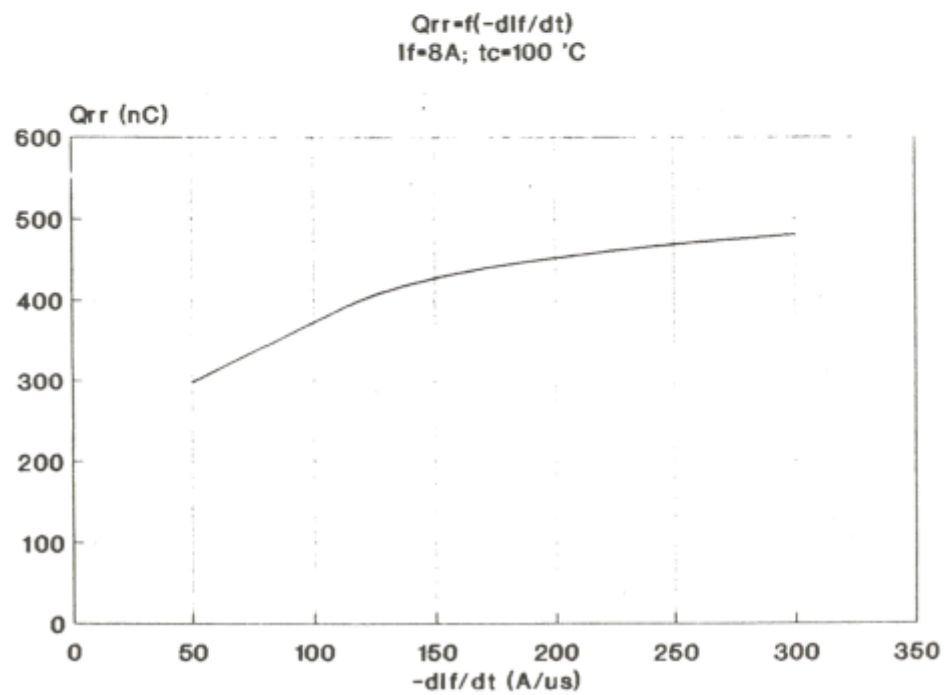
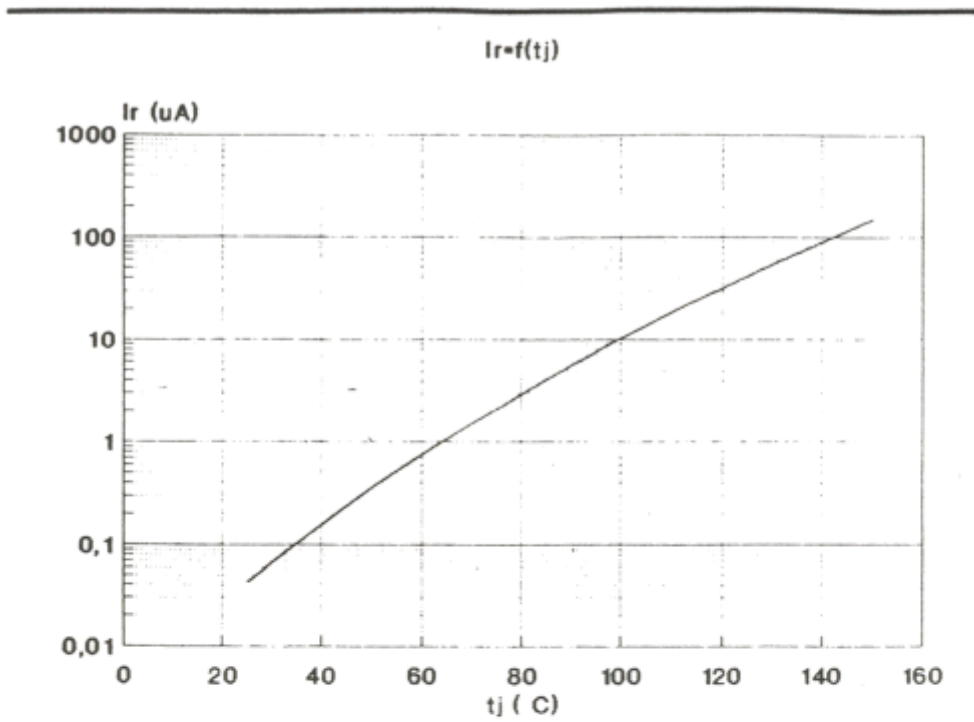


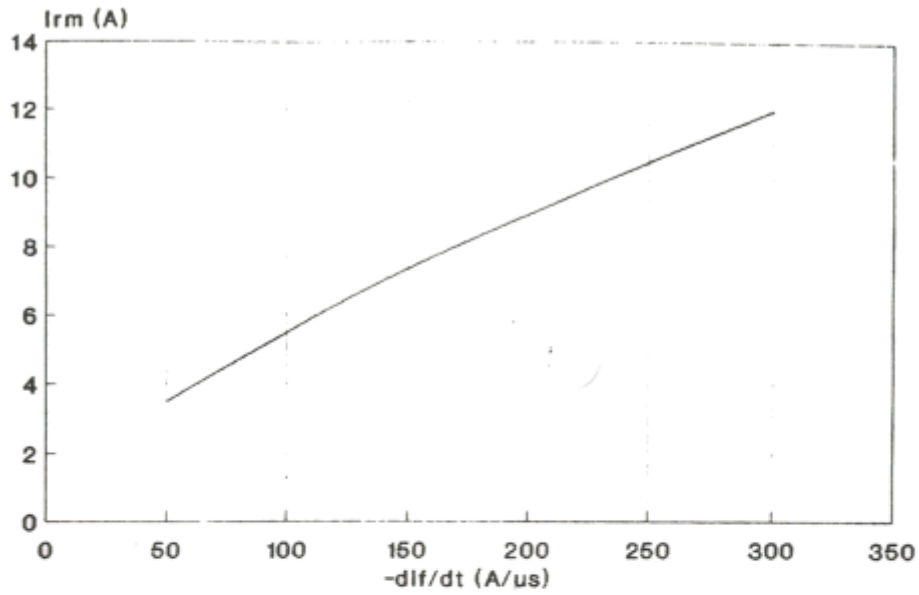
Fig. 2 Test circuit



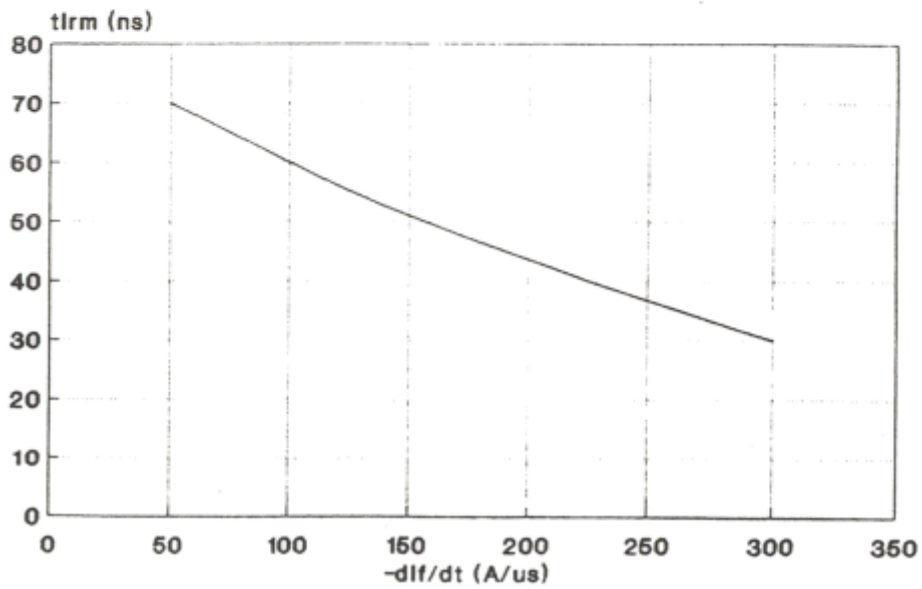


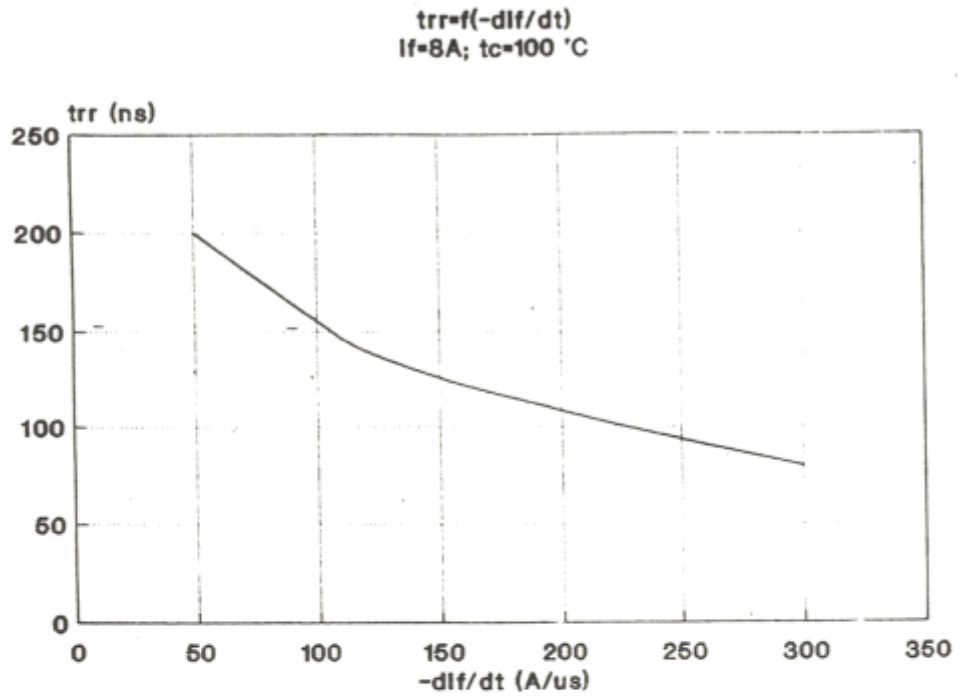


$I_{rm} = f(-di/dt)$
 $I_f = 8A; t_c = 100^\circ C$



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





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