TELEFUNKEN electronic
Creative Technolog es

BYT 85

T-03-17

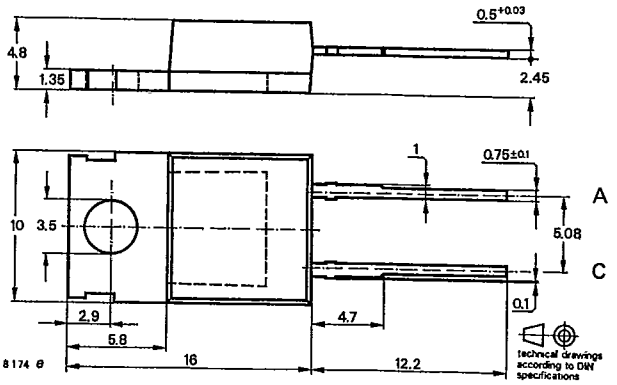
Ultra Fast Recovery Silicon Power Diode

Application: Fast switched mode power supplies, freeweeling and snubber diode in motorcontrol circuits

Features:

- Multiple diffusion
- High voltage
- High current
- Glass passivated junction
- Fast forward recovery time
- Fast reverse recovery time

Dimensions in mm



Cathode connected with metallic surface

Plastic case
DO 200
Weight max. 2.5 g

Accessories: Isolating washer No. 564542

Absolute maximum ratings		**BYT 85-600**	**BYT 85-800**	**BYT 85-1000**	
Reverse voltage, Repetitive peak reverse voltage	V_R, V_{RRM}	600	800	1000	V
Surge forward current	I_{FSM}		80		A
Repetitive peak current	I_{FRM}		20		A
Average forward current	I_{FAV}		4		A
Junction temperature	T_j		150		°C
Storage temperature range	T_{stg}		– 65....+ 150		°C
Maximum thermal resistance					
Junction case	R_{thJC}		3		K/W

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Characteristics		Min.	Typ.	Max.	
$T_j = 25$ °C, unless otherwise specified					
Forward voltage					
$I_F = 4$ A	V_F			1.8	V
$I_F = 4$ A, $T_j = 100$ °C	V_F			1.8	V
Reverse current					
$V_R = V_{RRM}$	I_R			10	µA
$V_R = V_{RRM}$, $T_j = 100$ °C	I_R			0.1	mA
Forward recovery time					
$I_F = 4$ A, $dI_F/dt \leq 50$ A/µs	t_{fr}		350		ns
Turn ON transient peak voltage, Fig. 1	V_{FP}		5		V
Turn OFF switching characteristic Fig. 2					
$I_F = 4$ A, $\frac{dI_F}{dt} = -100$ A/µs, $V_{Batt} = 200$ V					
Reverse recovery current	I_{RM}		7		A
	t_{rr}		125		ns
	t_{IRM}		70		ns
Reverse recovery time					
$I_F = 0.5$ A, $I_R = 1$ A, $i_r = 0.25$ A	t_{rr}			80	ns

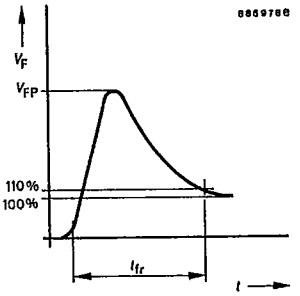

Fig. 1 Turn ON transient peak voltage

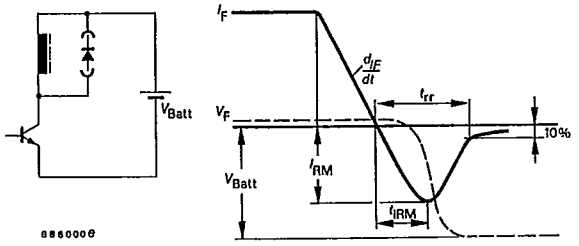

Fig. 2 Test circuit

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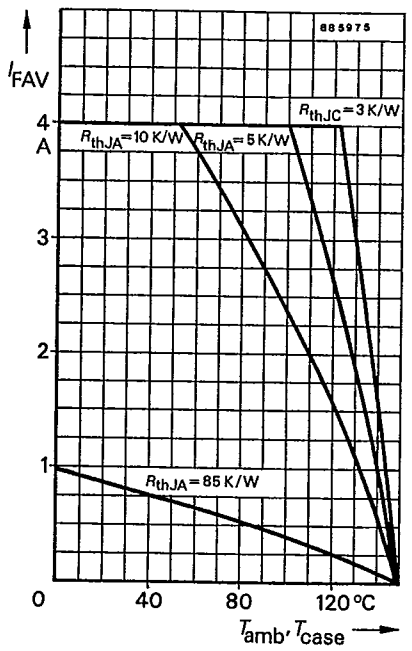
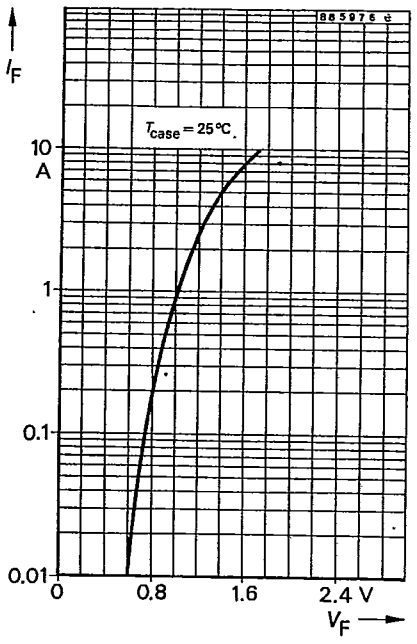
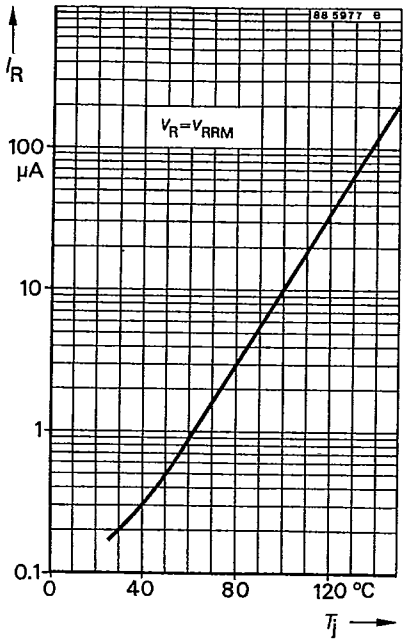

885975
I_{FAV}
4 A
3
2
1
0
R_{thJC}=3 K/W
R_{thJA}=10 K/W
R_{thJA}=5 K/W
R_{thJA}=85 K/W
40
80
120 °C
T_{amb}, T_{case}


I_F
10 A
1
0.1
0.01
T_{case}=25 °C
0
0.8
1.6
2.4 V
V_F


I_R
100 µA
10
1
0.1
V_R=V_{RRM}
0
40
80
120 °C
T_j

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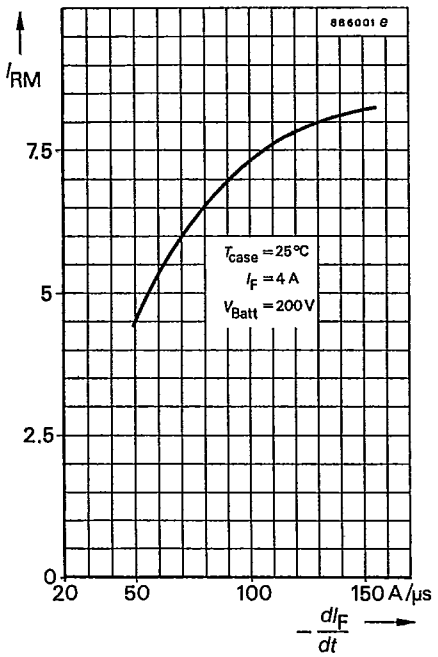
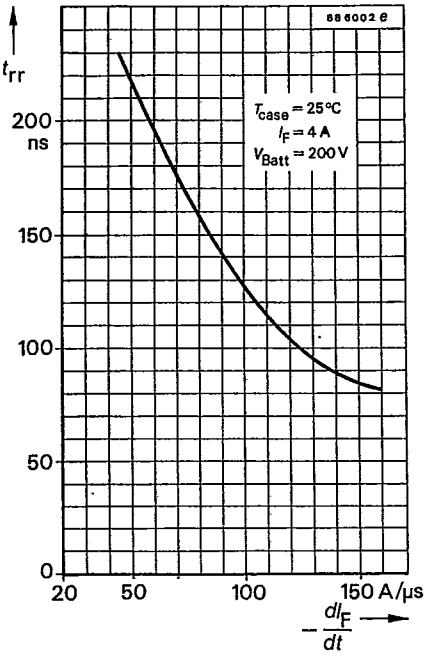
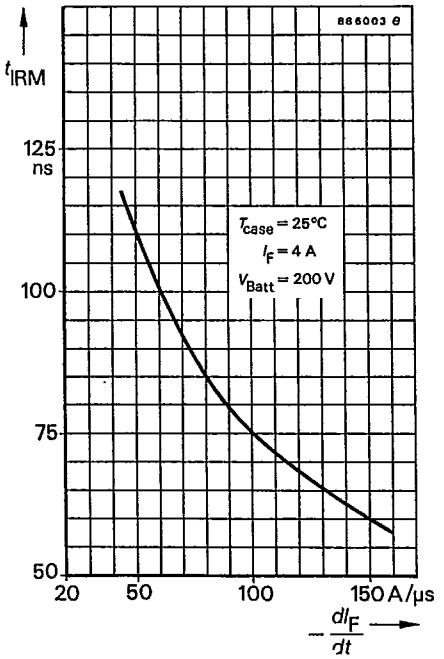

886001 e
I_{RM}
7.5
5
2.5
0
20
50
100
150 A/µs
$-\frac{dI_F}{dt}$
$T_{case} = 25°C$
$I_F = 4\,A$
$V_{Batt} = 200\,V$


886002 e
t_{rr}
200 ns
150
100
50
0
20
50
100
150 A/µs
$-\frac{dI_F}{dt}$
$T_{case} = 25°C$
$I_F = 4\,A$
$V_{Batt} = 200\,V$


886003 e
t_{IRM}
125 ns
100
75
50
20
50
100
150 A/µs
$-\frac{dI_F}{dt}$
$T_{case} = 25°C$
$I_F = 4\,A$
$V_{Batt} = 200\,V$