RECTIFIER DIODES

Silicon rectifier diodes in DO-5 metal envelopes, intended for use in power rectifier applications.
The series consists of the following types:
Normal polarity (cathode to stud): BYX52–300, BYX52–600, BYX52–1200.
Reverse polarity (anode to stud): BYX52–300R, BYX52–600R, BYX52–1200R.

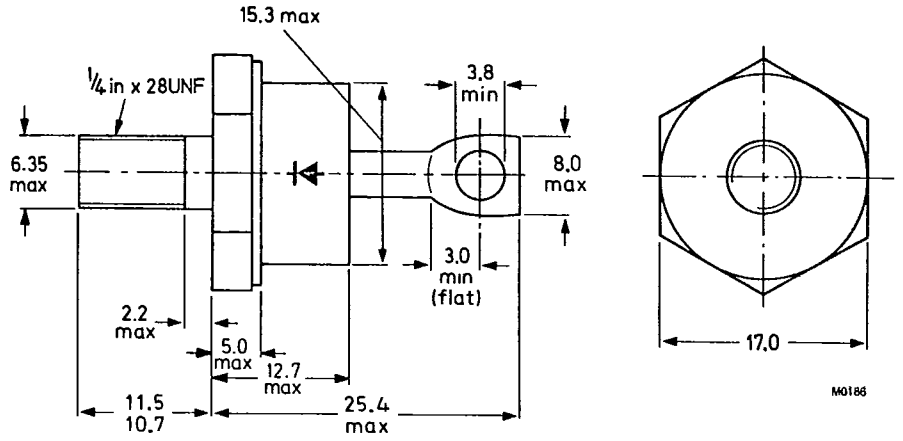
QUICK REFERENCE DATA

			BYX52–300(R)	600(R)	1200(R)	
Repetitive peak reverse voltage	V_{RRM}	max.	300	600	1200	V
Average forward current	$I_{F(AV)}$	max.		48		A
Non-repetitive peak forward current	I_{FSM}	max.		800		A

MECHANICAL DATA

Dimensions in mm

Fig.1 DO-5 Supplied with device: 1 nut, 1 lock-washer
Nut dimensions across the flats: 11.1 mm



Net mass: 22 g
Diameter of clearance hole: max. 6.5 mm
Accessories supplied on request:
see ACCESSORIES section

Torque on nut: min. 1.7 Nm (17 kg cm)
max. 3.5 Nm (35 kg cm)

The mark shown applies to the normal polarity types

Products approved to CECC 50 009-024 available on request.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC134).

Voltages			BYX52–300(R)	600(R)	1200(R)	
Non-repetitive peak reverse voltage ($t \leqslant 10$ ms)	V_{RSM}	max.	300	600	1200	V
Repetitive peak reverse voltage ($\delta = 0.01$)	V_{RRM}	max.	300	600	1200	V
Crest working reverse voltage	V_{RWM}	max.	200	400	800	V

Currents				
Average forward current (averaged over any 20 ms period) up to $T_{mb} = 112$ °C	$I_{F(AV)}$	max.	48	A
at $T_{mb} = 125$ °C	$I_{F(AV)}$	max.	40	A
R.M.S. forward current	$I_{F(RMS)}$	max.	75	A
Repetitive peak forward current	I_{FRM}	max.	450	A
Non-repetitive peak forward current ($t = 10$ ms; half-sinewave) $T_j = 175$ °C prior to surge	I_{FSM}	max.	800	A
I^2t for fusing ($t = 10$ ms)	I^2t	max.	3200	A^2s

Temperatures				
Storage temperature	T_{stg}		–55 to +175	°C
Junction temperature	T_j	max.	175	°C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	=	0.8	°C/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	=	0.2	°C/W

CHARACTERISTICS

Forward voltage $I_F = 150$ A; $T_j = 25$ °C	V_F	<	1.8	V*
Reverse current $V_R = V_{RWM\ max}$; $T_j = 125$ °C	I_R	<	1.6	mA

OPERATING NOTE

The top connector should be neither bent nor twisted; it should be soldered into the circuit so that there is no strain on it.

*Measured under pulse conditions to avoid excessive dissipation.

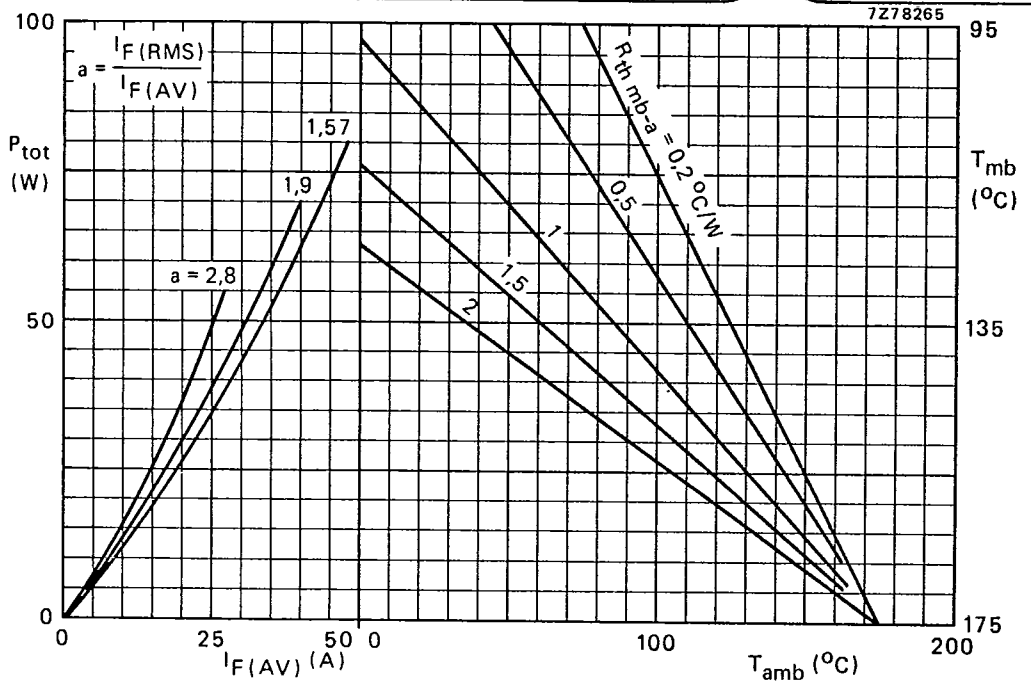


Fig.2 Interrelation between the power(derived from the left-hand part) and the maximum permissible temperatures.

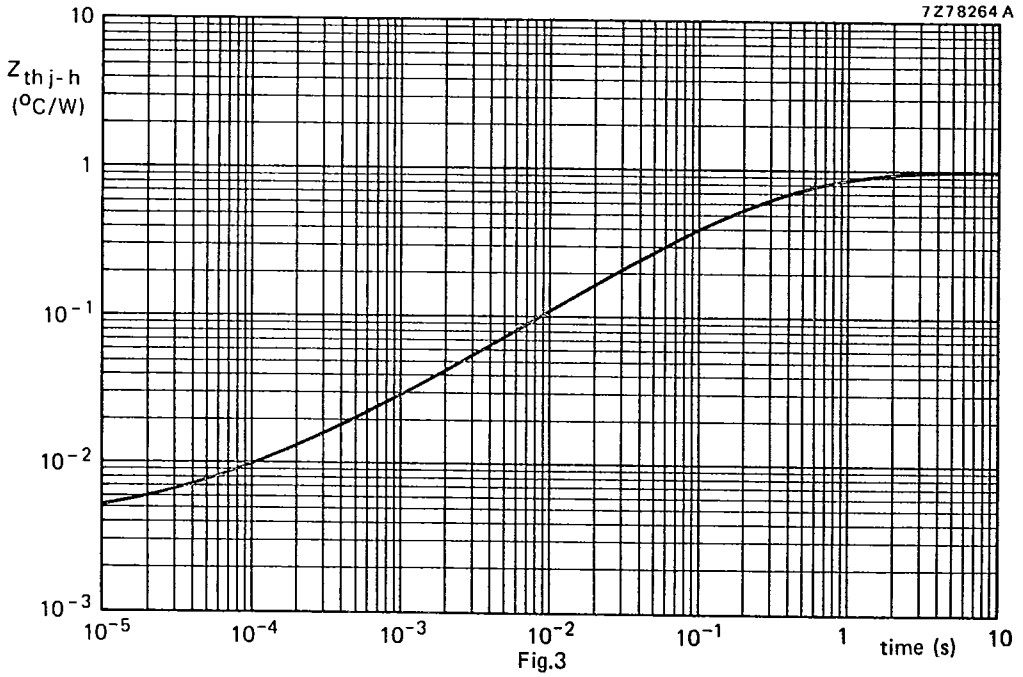


Fig.3

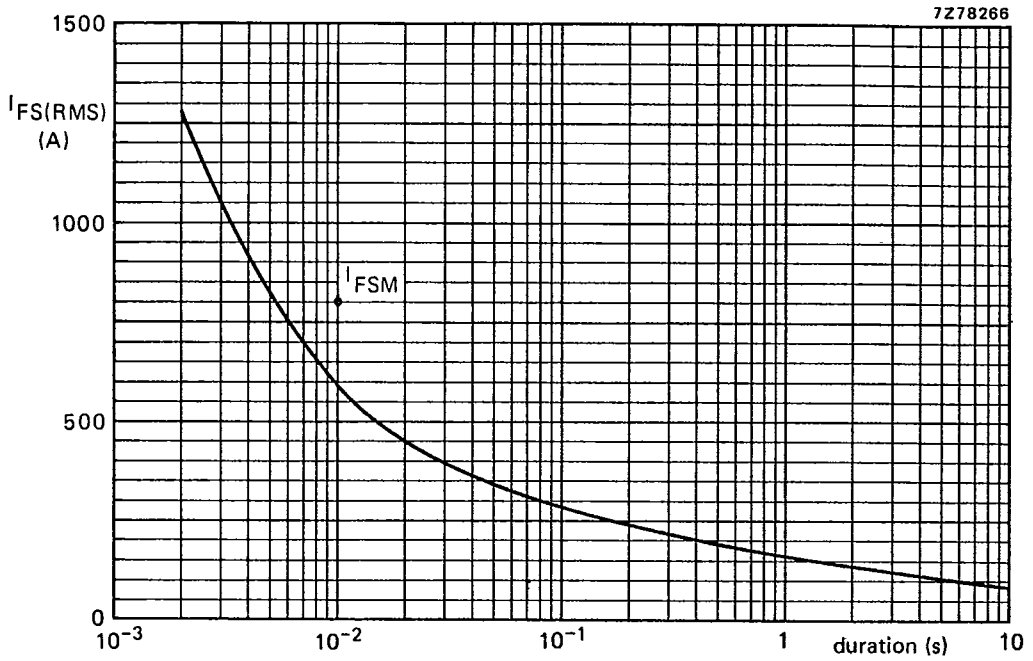
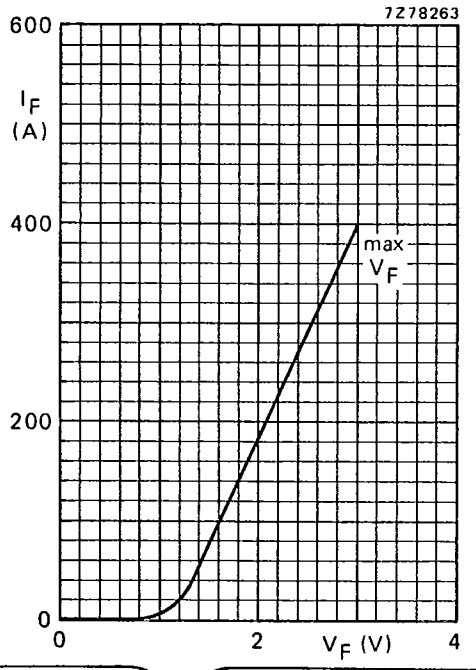


Fig.4 Maximum permissible non-repetitive r.m.s. forward current based on sinusoidal currents (f = 50 Hz); T_j = 175 °C prior to surge; with reapplied V_{RWM} max.



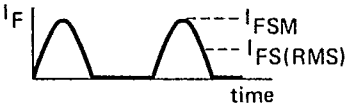


Fig.5