

T-01-17



RECTIFIER DIODES

Silicon rectifier diodes in DO-4 metal envelopes, intended for use in power rectifier applications.

The series consists of the following types:

Normal polarity (cathode to stud): BYX98-300 to 1200.

Reverse polarity (anode to stud): BYX98-300R to 1200R.

QUICK REFERENCE DATA

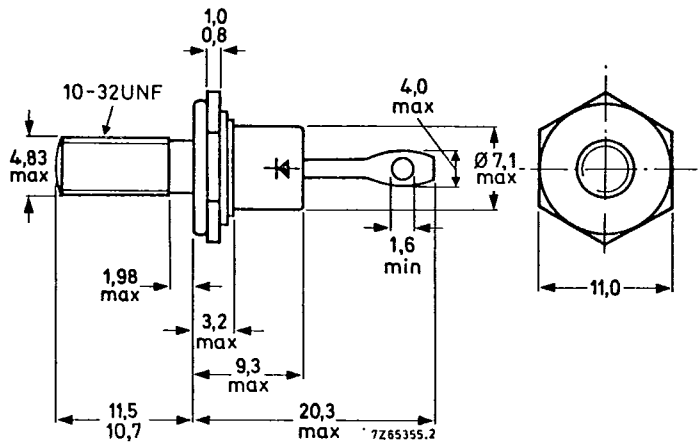
		BYX98-300(R)	600(R)	1200(R)	
Repetitive peak reverse voltage	$V_{RRM}$	max. 300	600	1200	V
Average forward current	$I_F(AV)$		max. 10		A
Non-repetitive peak forward current	$I_{FSM}$		max. 75		A

MECHANICAL DATA

Dimensions in mm

DO-4: Supplied with device: 1 nut, 1 lock-washer

Nut dimensions across the flats: 9.5 mm



Net mass: 6 g

Diameter of clearance hole: max. 5.2 mm

Accessories supplied on request:  
see ACCESSORIES section

The mark shown applies to normal polarity types.

Torque on nut: min. 0.9 Nm  
(9 kg cm) <sup>5</sup>  
max. 1.7 Nm  
(17 kg cm)

Products approved to CECC 50 009-004, available on request

BYX98

SERIES

T-01-17

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RATINGS Limiting values in accordance with the Absolute Maximum System (IEC 134)

Voltages

			BYX98-300(R)	600(R)	1200(R)	
Non-repetitive peak reverse voltage ( $t \leq 10$ ms)	$V_{RSM}$	max.	300	600	1200	V
Repetitive peak reverse voltage ( $\delta \leq 0,01$ )	$V_{RRM}$	max.	300	600	1200	V
Crest working reverse voltage	$V_{RWM}$	max.	200	400	800	V
Continuous reverse voltage	$V_R$	max.	200	400	800	V

Currents

Average forward current (averaged over any 20 ms period) up to  $T_{mb} = 97$  °C  
at  $T_{mb} = 125$  °C

$I_{F(AV)}$  max. 10 A  
 $I_{F(AV)}$  max. 6 A

R. M. S. forward current

 $I_{F(RMS)}$  max. 16 A

Repetitive peak forward current

 $I_{FRM}$  max. 75 A

Non-repetitive peak forward current

(t = 10 ms; half sine-wave)  $T_j = 150$  °C prior to surge;with reapplied  $V_{RWMmax}$  $I_{FSM}$  max. 75 A $I^2t$  for fusing (t = 10 ms) $I^2t$  max. 28 A<sup>2</sup>sTemperatures

Storage temperature

 $T_{stg}$  -55 to +150 °C

Junction temperature

 $T_j$  max. 150 °C

## THERMAL RESISTANCE

From junction to ambient in free air

 $R_{th j-a} = 50$  °C/W

From junction to mounting base

 $R_{th j-mb} = 3$  °C/W

From mounting base to heatsink

with heatsink compound

 $R_{th mb-h} = 0,5$  °C/W

without heatsink compound

 $R_{th mb-h} = 0,6$  °C/W

Transient thermal impedance; t = 1 ms

 $Z_{th j-mb} = 0,3$  °C/W

**CHARACTERISTICS**

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Forward voltage

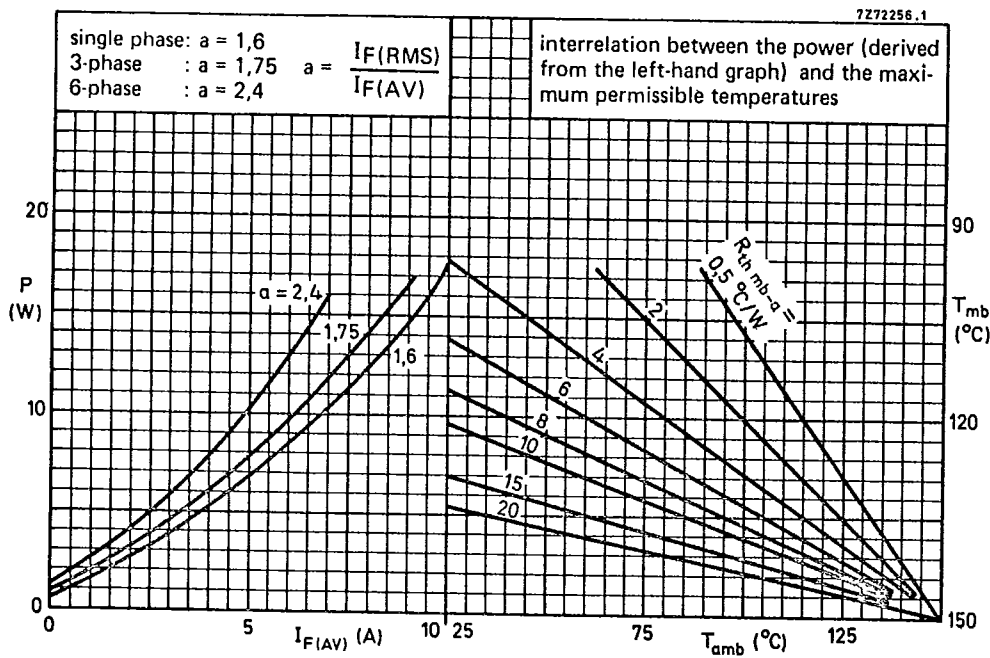
$I_F = 20 \text{ A}; T_j = 25 \text{ }^\circ\text{C}$   $V_F < 1,7 \text{ V } ^1)$

Reverse current

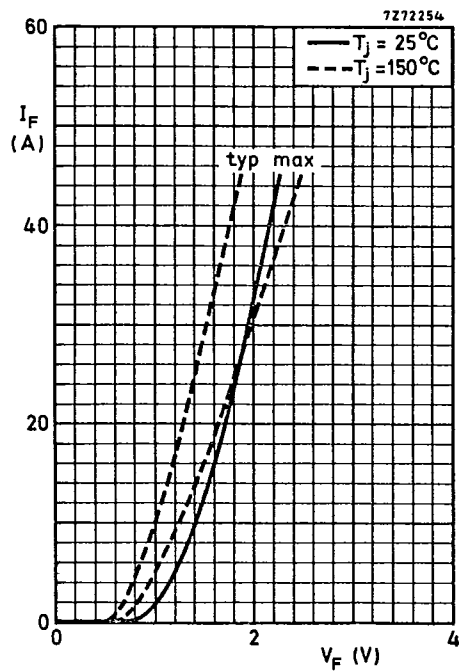
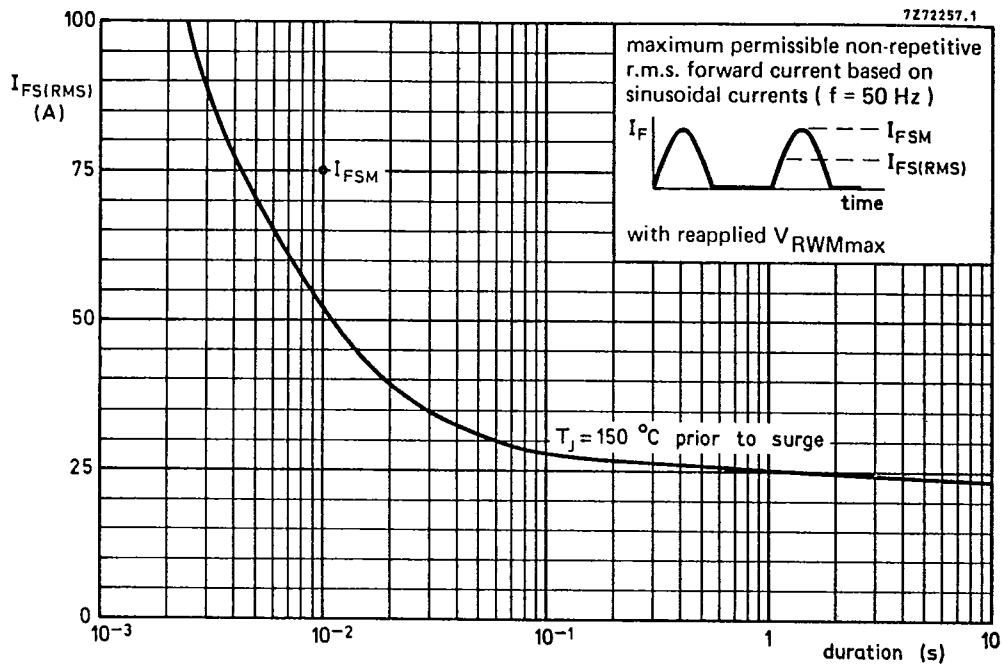
$V_R = V_{RWMmax}; T_j = 125 \text{ }^\circ\text{C}$   $I_R < 200 \text{ } \mu\text{A}$

**OPERATING NOTES**

1. The top connector should neither be bent nor twisted; it should be soldered into the circuit so that there is no strain on it.  
During soldering the heat conduction to the junction should be kept to a minimum.
2. Where there is a possibility that transients, due to the energy stored in the transformer, will exceed the maximum permissible non-repetitive peak reverse voltage, see General Section for information on damping circuits.



<sup>1)</sup> Measured under pulse conditions to avoid excessive dissipation.



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