

SILICON 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): BYX38-300 to 1200.

Reverse polarity (anode to stud): BYX38-300R to 1200R.

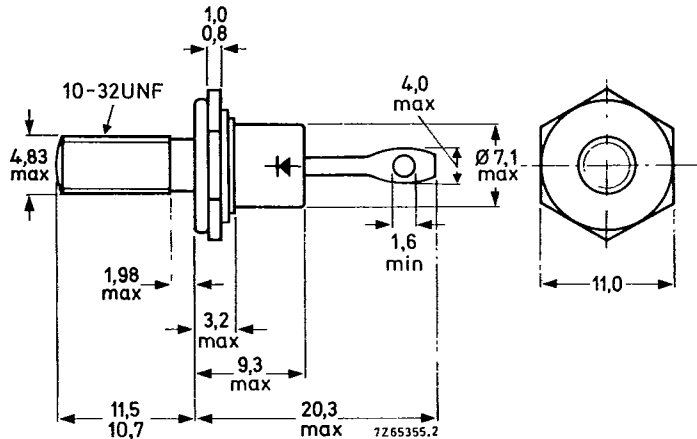
QUICK REFERENCE DATA

| | | BYX38-300(R) | 600(R) | 1200(R) |
|-------------------------------------|-------------|--------------|--------|---------|
| Repetitive peak reverse voltage | V_{RRM} | max. 300 | 600 | 1200 V |
| Average forward current | $I_{F(AV)}$ | max. 6 | 6 | A |
| Non-repetitive peak forward current | I_{FSM} | max. 50 | 50 | A |

MECHANICAL DATA

Dimensions in mm

DO-4



Net mass: 6 g

Diameter of clearance hole: max. 5,2 mm

Accessories supplied on request:
see ACCESSORIES section

Supplied with device: 1 nut, 1 lock washer

Nut dimensions across the flats: 9,5 mm

The mark shown applies to normal polarity types.

Torque on nut: min. 0,9 Nm
(9 kg cm)
max. 1,7 Nm
(17 kg cm)



Products approved to CECC 50 009-019 available on request.

PHILIPS INTERNATIONAL

56E D ■ 7110826 0041615 226 ■ PHIN

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

| <u>Voltages</u> | | BYX38-300(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 $T_{mb} = 110$ °C at $T_{mb} = 125$ °C | $I_{F(AV)}$ | max. | 6 | A |
| | $I_{F(AV)}$ | max. | 4 | A |
| R. M. S. forward current | $I_{F(RMS)}$ | max. | 10 | A |
| Repetitive peak forward current | I_{FRM} | max. | 50 | 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. | 50 | A |
| I^2t for fusing ($t = 10$ ms) | I^2t | max. | 13 | A ² s |

Temperatures

| | | | |
|----------------------|-----------|-------------|----|
| 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 | $R_{th j-mb}$ | = | 4 | °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 |

PHILIPS INTERNATIONAL
 CHARACTERISTICS

56E D ■ 7110826 0041616 162 ■ PHIN

T-01-17

Forward voltage

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

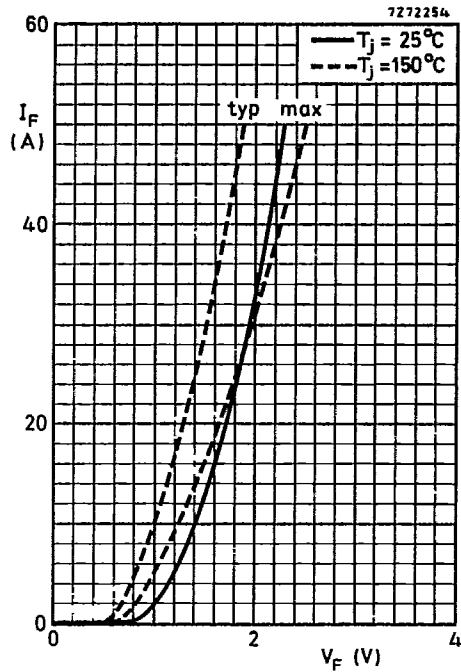
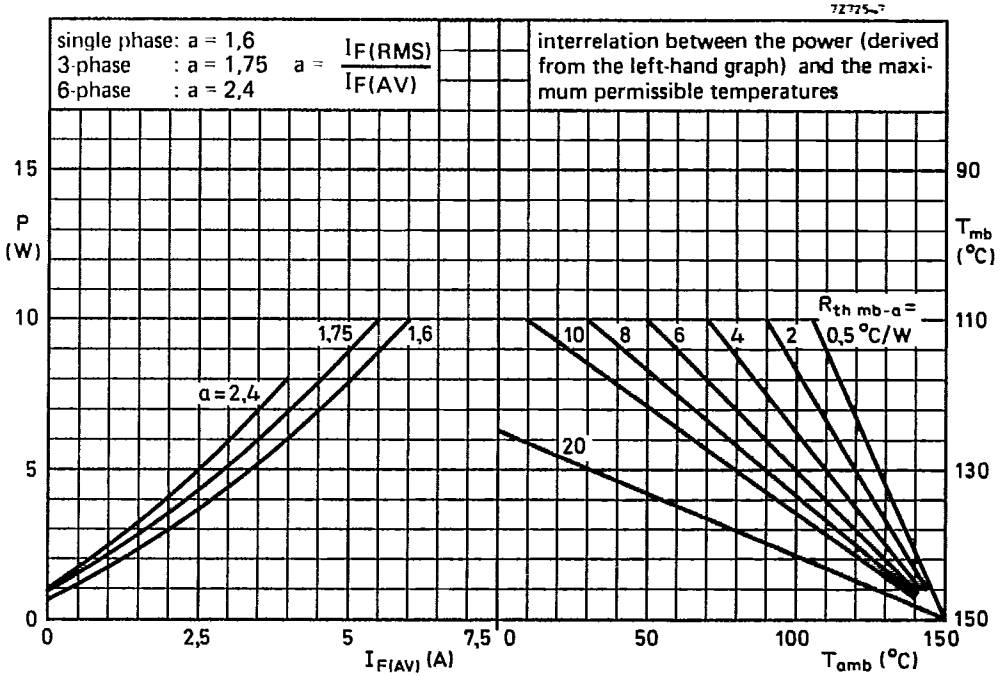
Reverse current

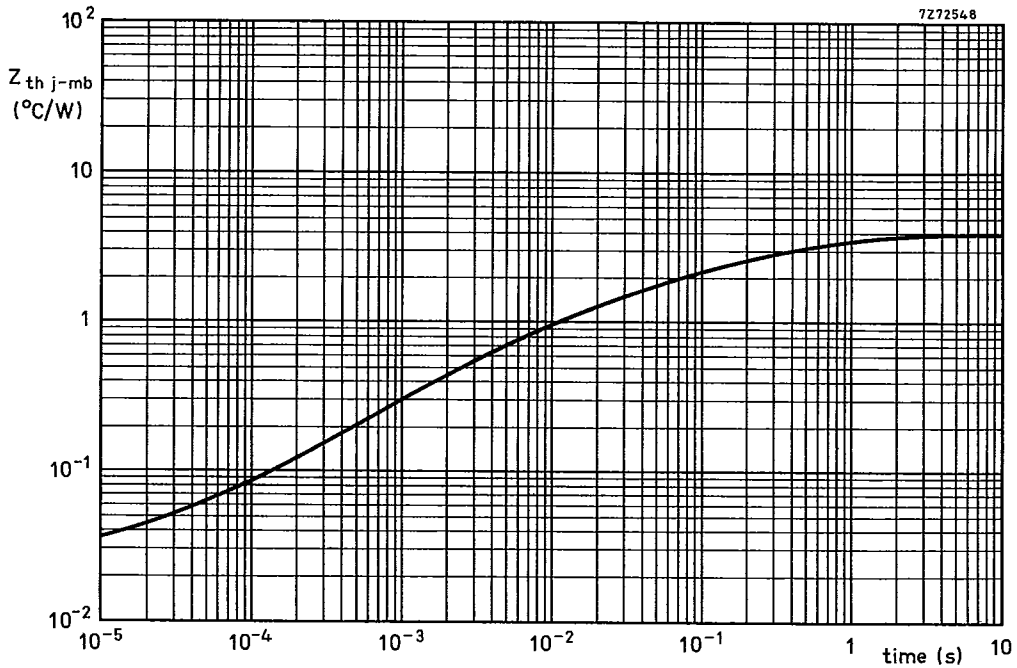
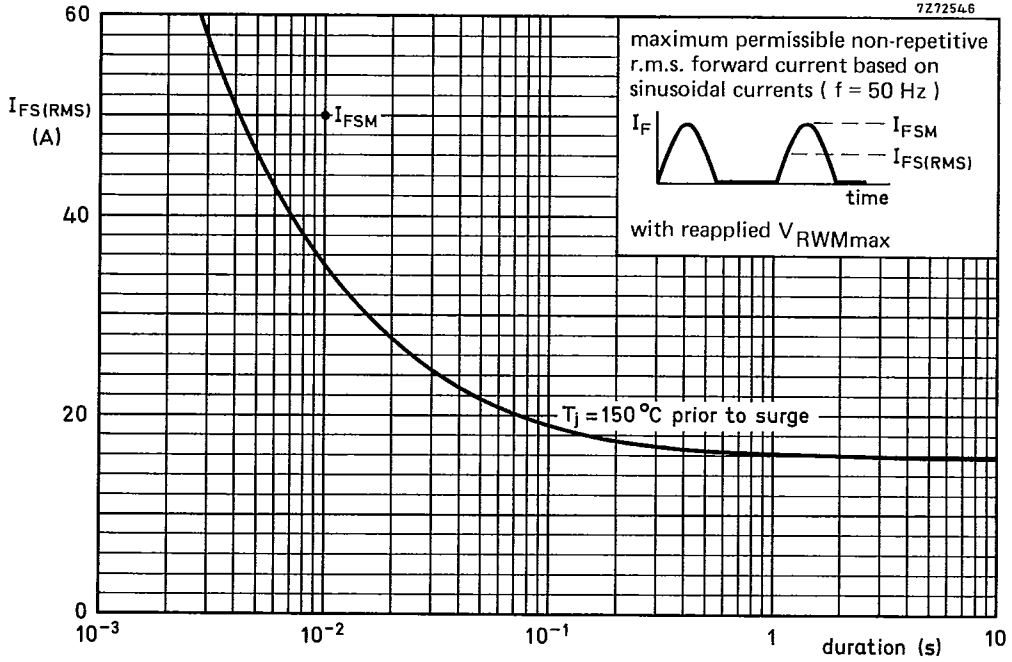
$V_R = V_{RWMmax}; T_j = 125 \text{ }^\circ\text{C}$ $I_R < 200 \text{ } \mu\text{A}$

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.

¹⁾ Measured under pulse conductions to avoid excessive dissipation.





This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.