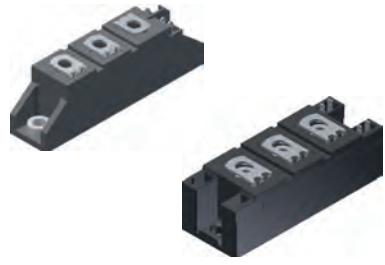



Optional Accessories for Thyristor / Diode Modules



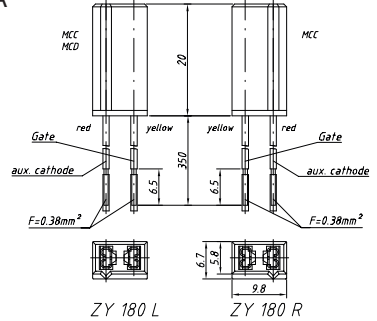
For module types MCC/MCD/MCO/MCMA/MCNA 132, 161 up to 700 (for MCD/MCO only L-type):
Keyed Gate Cathode twin plugs
with wire length = 350 / 480 mm
gate = white, cathode = red

Type **ZY 180 L** (L = Left for pin pair 4/5)
Type **ZY 180 R** (R = Right for pin pair 6/7)

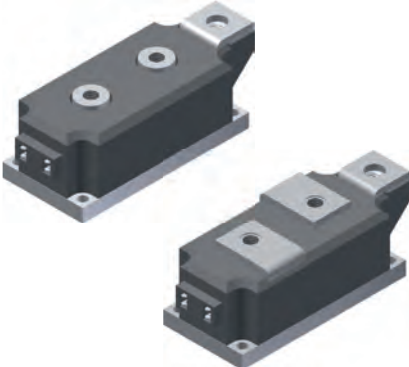


For module-type TO-240 package MCC/MCD/MCMA/MCNA 19 up to 120 and 140 (version 1):
Keyed Gate Cathode twin plugs with wire
length = 340 / 460 mm;
gate = white, cathode = red

Type **ZY 200 L** (L = Left for pin pair 4/5)
Type **ZY 200 R** (R = Right for pin pair 6/7)



Technical drawing showing dimensions for ZY 180 L and ZY 180 R. Dimensions include 20, 350, 6.5, 6.5, 9.8, 6.7, 5.9, and 8. Wire connections are labeled: Gate (red), aux. cathode (yellow), and F=0.38mm².

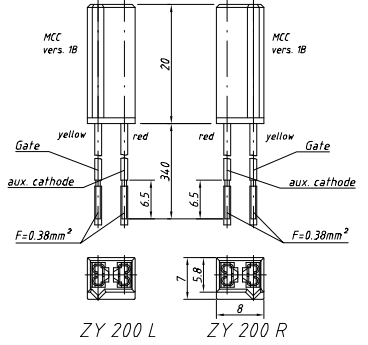


For module types MCC/MCD/MDD 310
Threaded spacer for higher Anode /
Cathode construction:

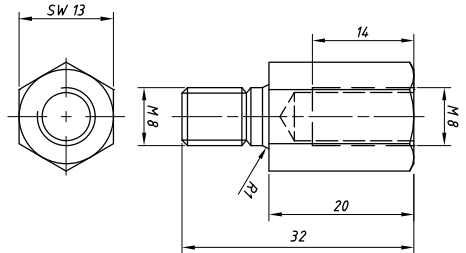
Type **ZY 250** (material brass)

Not for new design

For ZY 180 and ZY 200: UL 758 Style 3751



Technical drawing showing dimensions for ZY 200 L and ZY 200 R. Dimensions include 20, 340, 6.5, 6.5, 8, 7, 5.9, and 8. Wire connections are labeled: Gate (yellow), aux. cathode (red), and F=0.38mm².



Technical drawing of the ZY 250 threaded spacer. Dimensions include SW 13, 14, 20, 32, and 8 M.

Design Information

For Thyristors, Diodes, Thyristor / Diode Modules and Rectifier Bridges

| | |
|--|--|
| Surge current | The 60 Hz value of I_{TSM} is 10% higher than the 50 Hz value The I_{TSM} value at T_{VJM} is 10% to 15% lower than the 45°C value |
| Limiting Pt | 50 Hz: $I^2t [A^2s] = I_{TSM} [A] \cdot I_{TSM} [A] \cdot 0.005 [s]$; use rated I_{TSM} value (10 ms) 60 Hz: $I^2t [A^2s] = I_{TSM} [A] \cdot I_{TSM} [A] \cdot 0.0042 [s]$; use 60-Hz-value of I_{TSM} |
| Forward current | The average current ratings in tables are mostly specified for temperature conditions of: $T_A = 45^\circ C$, $T_C = 85^\circ C$ or $T_C = 100^\circ C$. For other temperature conditions the current ratings can be calculated using the following formulas applicable up to 400 Hz. |
| $I_{TAV} = \frac{-V_{T0} + \sqrt{V_{T0}^2 + 4 \cdot k^2 \cdot r_T \cdot P}}{2 \cdot k^2 \cdot r_T} \quad \text{where} \quad P = \frac{T_{VJM} - T_C}{R_{thJC}} \quad \text{or} \quad P = \frac{T_{VJM} - T_A}{R_{thJA}}$ | |
| $I_{TAV} [A], P [W]; V_{T0} [V]; r_T [\Omega], T_{VJM} [^\circ C], T_C [^\circ C], T_A [^\circ C], R_{thJC} [K/W], R_{thJA} [K/W]$ | |
| $k^2 = 1$ for DC current $k^2 = 2.5$ for sinusoidal half wave current $k^2 = 3$ for 120° rectangular current $k^2 = 6$ for 60° rectangular current | |
| The average forward current is limited by the RMS current value $I_{T(RMS)}$. When the calculated value I_{TAV} is higher than $I_{T(RMS)} / k$, replace it by $I_{TAV} = I_{T(RMS)} / k$. | |