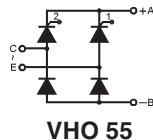


Single Phase Rectifier Bridge

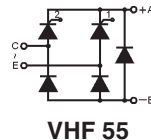
$I_{dAV} = 53 \text{ A}$
 $V_{RRM} = 800-1600 \text{ V}$

Preliminary data

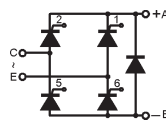
| V_{RSM} V_{DSM} V | V_{RRM} V_{DRM} V | Type |
|-----------------------------|-----------------------------|--------------|
| 800 | 800 | xxx 55-08io7 |
| 1200 | 1200 | xxx 55-12io7 |
| 1400 | 1400 | xxx 55-14io7 |
| 1600 | 1600 | xxx 55-16io7 |
| xxx = type | | |



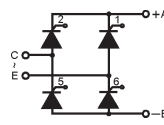
VHO 55



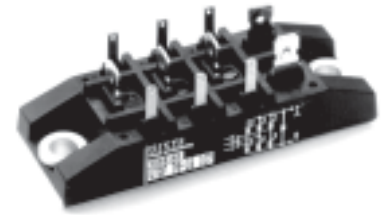
VHF 55



VKF 55



VKO 55



| Symbol | Test Conditions | Maximum Ratings |
|-------------------------|--|---|
| I_{dAV} ① | $T_K = 85^\circ\text{C}$, module | 53 A |
| I_{dAVM} ① | module | 53 A |
| I_{FRMS} , I_{TRMS} | per leg | 41 A |
| I_{FSM} , I_{TSM} | $T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$ | $t = 10 \text{ ms}$ (50 Hz), sine 550 A $t = 8.3 \text{ ms}$ (60 Hz), sine 600 A |
| | $T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$ | $t = 10 \text{ ms}$ (50 Hz), sine 500 A $t = 8.3 \text{ ms}$ (60 Hz), sine 550 A |
| I^2t | $T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$ | $t = 10 \text{ ms}$ (50 Hz), sine 1520 A ² s $t = 8.3 \text{ ms}$ (60 Hz), sine 1520 A ² s |
| | $T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$ | $t = 10 \text{ ms}$ (50 Hz), sine 1250 A ² s $t = 8.3 \text{ ms}$ (60 Hz), sine 1250 A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = 125^\circ\text{C}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3 \text{ A}$, $di_G/dt = 0.3 \text{ A}/\mu\text{s}$ | repetitive, $I_T = 50 \text{ A}$ 150 A/ μs |
| | | non repetitive, $I_T = 1/2 \cdot I_{dAV}$ 500 A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise) | 1000 V/ μs |
| V_{RGM} | | 10 V |
| P_{GM} | $T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$ | $t_p = 30 \mu\text{s}$ $\leq 10 \text{ W}$ |
| | | $t_p = 500 \mu\text{s}$ $\leq 5 \text{ W}$ |
| | | $t_p = 10 \text{ ms}$ $\leq 1 \text{ W}$ |
| P_{GAVM} | | 0.5 W |
| T_{VJ} | | -40...+125 °C |
| T_{VJM} | | 125 °C |
| T_{stg} | | -40...+125 °C |
| V_{ISOL} | 50/60 Hz, RMS | $t = 1 \text{ min}$ 2500 V~ |
| | $I_{ISOL} \leq 1 \text{ mA}$ | $t = 1 \text{ s}$ 3000 V~ |
| M_d | Mounting torque (M5) (10-32 UNF) | 5 ± 15 % Nm |
| | | 44 ± 15 % lb.in. |
| Weight | | 110 g |

Features

- Package with copper base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- 1/4" fast-on power terminals

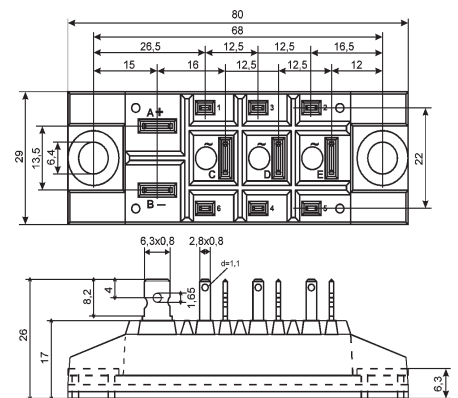
Applications

- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- Small and light weight

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747 refer to a single diode/thyristor unless otherwise stated
 ① for resistive load at bridge output.

IXYS reserves the right to change limits, test conditions and dimensions.

20070731a

| Symbol | Test Conditions | Characteristic Values | |
|------------|--|-----------------------|---------------------|
| I_D, I_R | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$ | \leq | 5 mA |
| V_T | $I_T = 80 \text{ A}; T_{VJ} = 25^\circ\text{C}$ | \leq | 1.64 V |
| V_{T0} | For power-loss calculations only | | 0.85 V |
| r_T | | | 11 m Ω |
| V_{GT} | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ | \leq | 1.5 V |
| | $T_{VJ} = -40^\circ\text{C}$ | \leq | 1.6 V |
| I_{GT} | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ | \leq | 100 mA |
| | $T_{VJ} = -40^\circ\text{C}$ | \leq | 200 mA |
| V_{GD} | $T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$ | \leq | 0.2 V |
| I_{GD} | | \leq | 5 mA |
| I_L | $T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$ | \leq | 450 mA |
| I_H | $T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$ | \leq | 200 mA |
| t_{gd} | $T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$ | \leq | 2 μs |
| t_q | $T_{VJ} = T_{VJM}; I_T = 20 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$ | typ. | 250 μs |
| R_{thJC} | per thyristor / Diode; DC | | 0.9 K/W |
| | per module | | 0.18 K/W |
| R_{thJK} | per thyristor / Diode; DC | | 1.1 K/W |
| | per module | | 0.22 K/W |
| d_s | Creeping distance on surface | | 16.1 mm |
| d_A | Creepage distance in air | | 7.1 mm |
| a | Max. allowable acceleration | | 50 m/s ² |