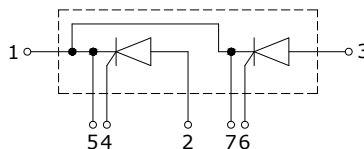


PRELIMINARY DATASHEET
**1600V 2X70A Phase Control Thyristor, Parallel
In iQPak™ Power Module Package**

- High voltage & high current
- Low on-state voltage
- Suitable for over voltage control, motor control circuit and heating control system
- Pb-free lead finish; RoHS compliant


MAXIMUM RATINGS (per Thyristor), $T_c = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Units
Average on-state current $T_c = 75^\circ\text{C}$, $T_j = 180^\circ\text{C}$ conduction half sine wave	$I_{T(AV)}$	70	A
Continuous RMS on-state current as AC switch	$I_{T(RMS)}$	110	
Non-repetitive surge peak on-state current $T_j = 125^\circ\text{C}$, $t_p = 10$ ms, applied rated VRRM $T_j = 125^\circ\text{C}$, $t_p = 10$ ms, no applied VRRM	I_{TSM}	1200 1400	
I^2t value for fusing $T_j = 125^\circ\text{C}$, $t_p = 10$ ms, applied rated VRRM $T_j = 125^\circ\text{C}$, $t_p = 10$ ms, no applied VRRM	I^2t	7200 10000	A^2s
$I^2\sqrt{t}$ value for fusing	$I^2\sqrt{t}$	102 000	$\text{A}^2\sqrt{\text{s}}$
Rate of rise of ON-state current $T_j = 25^\circ\text{C}$	di/dt	150	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	2.5	A
Maximum repetitive peak off-state voltage $I_R = 100\mu\text{A}$	V_{DRM}	1200	V
Maximum repetitive peak reverse voltage $I_R = 100\mu\text{A}$	V_{RRM}	1200	
Maximum reverse leakage current 25 °C 125 °C	I_{RRM}	1.0 15	mA
Maximum direct leakage current 25 °C 125 °C	I_{DRM}	1.0 15	
Operating junction temperature	T_j	-40... +125	$^\circ\text{C}$
Storage temperature	T_{stg}	-40... +150	

Thermal and Isolation Characteristics, $T_c = 25^\circ\text{C}$ unless otherwise noted

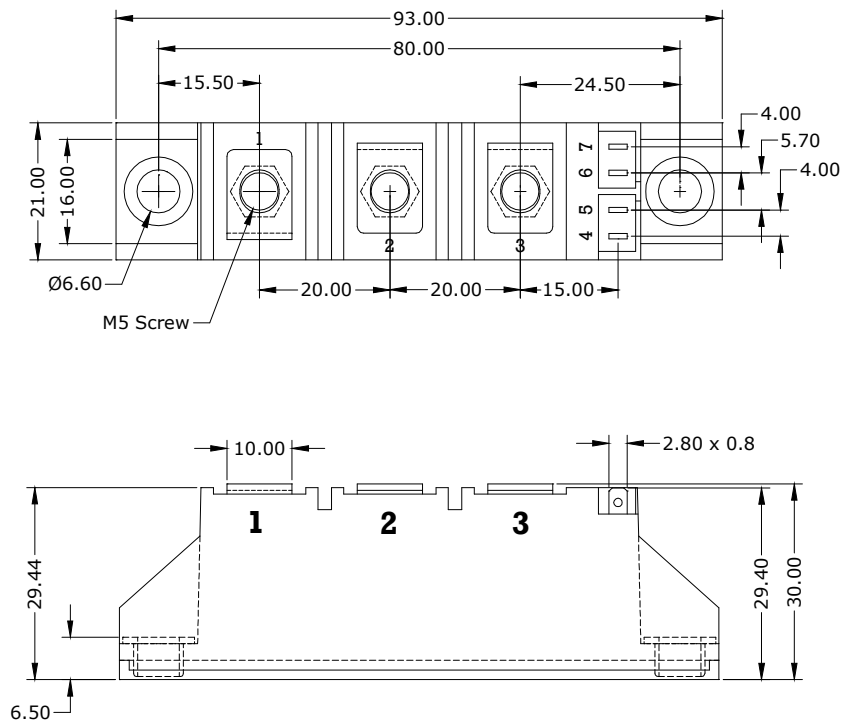
Parameter	Symbol	Max. Value	Units
Thermal resistance, junction to case (per Thyristor)	R_{thJC}	0.35	$^\circ\text{C}/\text{W}$
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-3 seconds)	V_{iso}	3000	V

Electrical Characteristics (per Thyristor), at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Average on-state current	$I_{T(AV)}$	$T_c = 75^\circ\text{C}$ 180 °C conduction half sine wave	-	-	70	A
Maximum ON-state current, continuous RMS, AC switch	$I_{T(RMS)}$		-	-	110	
Maximum required DC gate current to trigger	I_{GT}	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	-	100 80	-	mA

Maximum required DC gate voltage to trigger	V_{GT}	Anode Supply= 6V Resistive load $T_j = 25\text{ }^{\circ}\text{C}$ $T_j = 125\text{ }^{\circ}\text{C}$	-	1.5	-	V
Maximum DC gate voltage not to trigger	V_{GD}	$V_{DRM} = \text{rated value}$	-	0.25	-	
Maximum DC gate current not to trigger	I_{GD}		-	-	6.0	
Maximum holding current	I_H	$T_j = 25\text{ }^{\circ}\text{C}$, anode supply 6 V, resistive load	-	-	200	mA
Maximum latching current	I_L		-	-	400	
Maximum rate of rise of off-state voltage	dV/dt	$T_j = T_{jmax}$ linear to 80% V_{DRM}	-	-	500	V/ μs
Maximum peak on-state voltage	V_{TM}	100 A	-	-	1.4	V
Maximum peak negative voltage	V_{GM}		-	10	-	
Threshold voltage, low level value	V_{TTO1}	$T_j = 125\text{ }^{\circ}\text{C}$	-	-	0.916	
Threshold voltage, high level value	V_{TTO2}		-	-	1.21	
Maximum gate power	P_{GM}	$T = 30\mu\text{s}$	-	10	-	W

Package Outline Drawing



CAUTION: These devices are ESD sensitive. Use proper handling procedure.

Disclaimer

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**