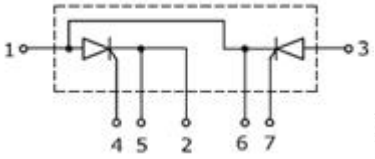
PRELIMINARY DATASHEET

Phase Control Thyristor, Half-Bridge Configuration
In iQPak® Power Module Package

- High voltage & high current
- Electrically isolated baseplate
- Low on-state voltage
- Suitable for over voltage control, motor control circuit and heating control system
- Pb-free finished; **RoHS compliant**



MAXIMUM RATINGS (per Thyristor)

Parameter	Symbol	Value	Units
Average on-state current T_c = 82 °C , T_j = 180 °C conduction half sine wave	$I_{T(AV)}$	70	A
Continuous RMS on-state current as AC switch	$I_{T(RMS)}$	109	
Non-repetitive surge peak on-state current T_j= 125°C, t_p = 10 ms, applied rated VRRM T_j= 125°C, t_p = 10 ms, no applied VRRM	I_{TSM}	1200 1400	
I^2t value for fusing T_j= 125°C, t_p = 10 ms, applied rated VRRM T_j= 125°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	$A^2\sqrt{s}$
Rate of rise of ON-state current T_j = 25 °C	dI/dt	150	A/µs
Peak gate current	I_{GM}	2.5	A
Maximum repetitive peak off-state voltage I_R = 100µA	V_{DRM}	1200	V
Maximum repetitive peak reverse voltage I_R = 100µA	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	°C
Storage temperature	T_{stg}	-40… +150	

Thermal and Isolation Characteristics

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

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Electrical Characteristics (per Thyristor), at T_j = 25oC, unless otherwise specified

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Average on-state current	$I_{T(AV)}$	Tc = 82 °C 180 °C conduction half sine wave	-	-	70	A
Maximum ON-state current, continuous RMS, AC switch	$I_{T(RMS)}$		-	-	109	
Maximum required DC gate current to trigger	I_{GT}	T_j = 25 °C T_j = 125 °C	- -	- -	100 80	mA
Maximum required DC gate voltage to trigger	V_{GT}	Anode Supply= 6V Resistive load T_j = 25 °C T_j = 125 °C	 - -	 1.5 1.1	 - -	V
Maximum DC gate voltage not to trigger	V_{GD}	V_{DRM} = rated value	-	0.25	-	
Maximum DC gate current not to trigger	I_{GD}		-	-	6.0	mA
Maximum holding current	I_H	T_j = 25 °C, anode supply 6 V, resistive load	-	-	200	
Maximum latching current	I_L		-	-	400	
Maximum rate of rise of off-state voltage	dV/dt	T_j=Tjmax linear to 80% VDRM	-	-	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 °C	-	-	0.916	
Threshold voltage, high level value	V_{TTO2}		-	-	1.21	
Maximum gate power	P_{GM}	T = 30µs	-	10	-	W

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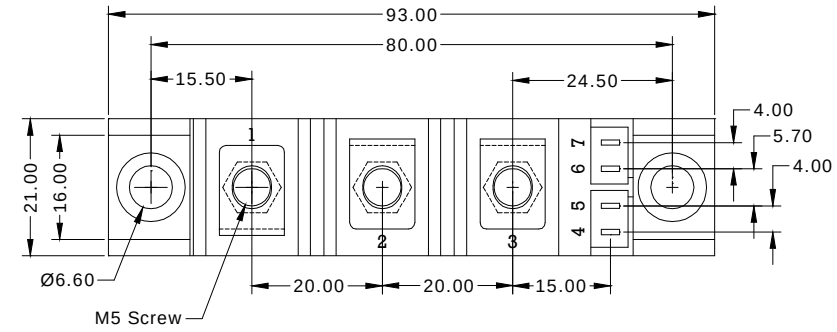
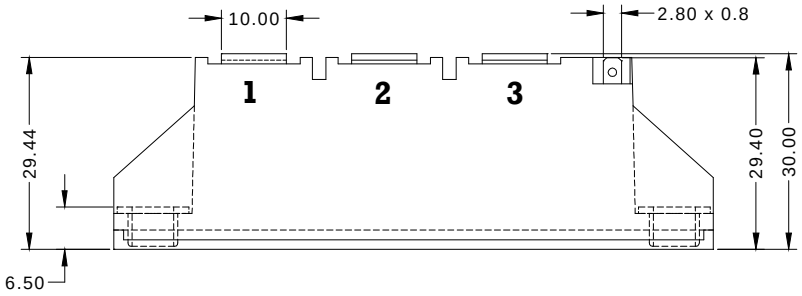
Package Outline Drawing





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.**

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