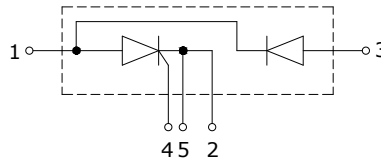


PRELIMINARY DATASHEET
**Thyristor and Diode in Series
 In iQPak™ (20mm) Power Module Package**

- Electrically isolated baseplate
- High surge capability
- General purpose Thyristor
- Pb-free lead finish; RoHS compliant


MAXIMUM RATINGS (Thyristor), at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Units
Average on-state current $T_c = 85^\circ\text{C}$, 180°C conduction, half sine wave	$I_{T(AV)}$	95	A
Non-repetitive surge peak on-state current At $t_p = 10$ ms, 100% V_{RRM} , sine pulse, initial $T_j = T_j \text{ max.}$	I_{TSM}	1785	
Peak reverse and off-state leakage current At 100% V_{RRM}/V_{DRM} $T_j = T_j \text{ max.}$	I_{RRM} / I_{DRM}	20	mA
I^2t value for fusing At $t_p = 10$ ms, 100% V_{RRM} , sine half-wave, initial $T_j = T_j \text{ max.}$	I^2t	15900	A^2s
Repetitive peak off-state voltage	V_{DRM}	1200	V
Repetitive reverse voltage	V_{RRM}	1200	
Maximum critical rate of rise of off-state voltage $T_j = 125^\circ\text{C}$, linear to 67% V_{DRM}	dV/dt	1000	$\text{V}/\mu\text{s}$
Peak gate current	I_{GM}	3.0	A
Peak gate power	P_{GM}	12	W
Operating junction and storage temperature	T_j, T_{stg}	-40... +125	$^\circ\text{C}$

MAXIMUM RATINGS (Diode), at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	V_{RRM}	1600	V
Average forward current $T_c = 100^\circ\text{C}$	$I_{F(AV)}$	100	A
Surge non-repetitive forward current $t_p = 10$ ms, no voltage reapplied, half sine wave	I_{FSM}	2020	
Operating junction and storage temperature	T_j, T_{stg}	-40... +150	$^\circ\text{C}$

Thermal and Isolation Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thyristor Thermal resistance, junction to case	R_{thJC}	0.28	K/W
Diode Thermal resistance, junction to case	R_{thJCD}	0.22	
Isolation voltage, RMS (measured between terminals and case, 50-60Hz for 1 sec)	V_{iso}	3000	V

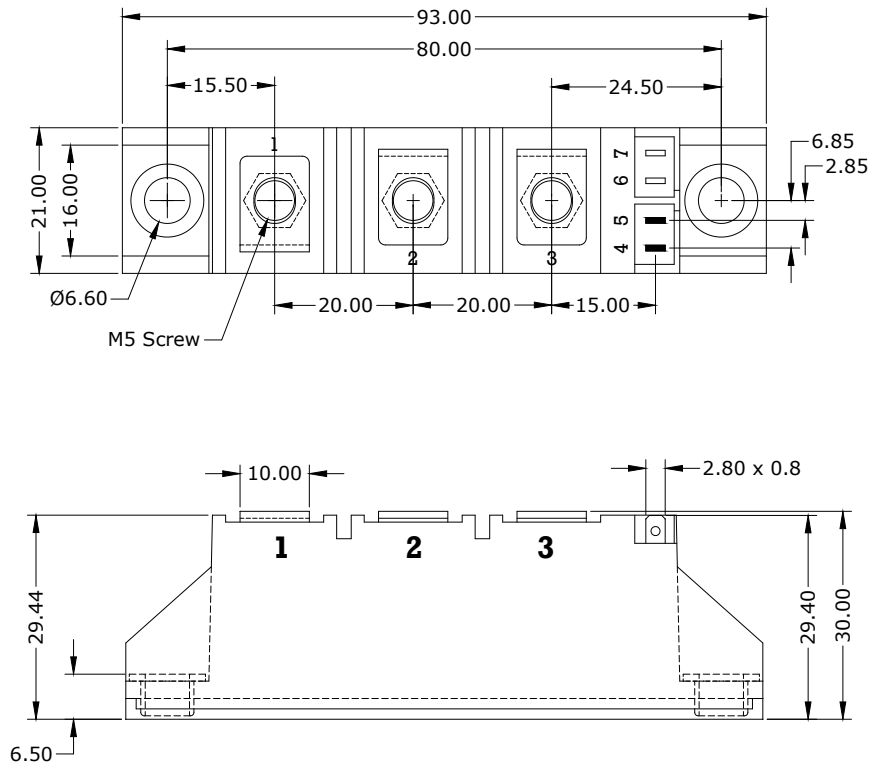
Electrical Characteristics (Thyristor), at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Gate trigger voltage $V_{AK} = 6\text{V}$, resistive load	V_{GT}	-	1.5	-	V
Gate trigger current	I_{GT}	30	-	150	mA

$V_{AK}=6V$, resistive load					
Holding Current $V_{AK}=6V$, $I_T=1A$, resistive load	I_H	-	-	270	mA
Latching current $V_{AK}=6V$, $I_T=1A$, resistive load	I_L	-	-	400	mA
On-state or forward voltage $I_T = 300A$ $I_T = 200A$	V_{TM}	-	1.65 1.25	- -	V

Electrical Characteristics (Diode), at $T_J = 25^\circ C$, unless otherwise specified

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Static Characteristics					
Reverse leakage current $V_R = 1600V$	I_R	-	-	10	mA
Forward voltage drop $I_F = 100A$	V_F	-	1.1	-	V

Package Outline Drawing

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.**