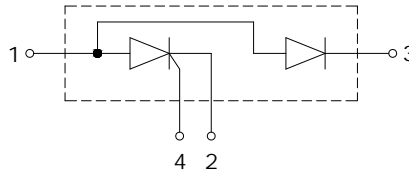


**PRELIMINARY DATASHEET**
**Thyristor and Diode in Parallel  
 In iQPak™ Power Module Package**

- Electrically isolated baseplate
- High surge capability
- General purpose thyristor and diode
- High voltage/ high current
- Pb free; RoHS compliant


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

Parameter	Symbol	Value	Units
Average on-state current $T_c = 85^\circ\text{C}, 180^\circ\text{C}$ 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 $T_j = T_j$ max.	$I_{TSM}$	1785	
Peak reverse and off-state leakage current At 100% $V_{RRM}/V_{DRM}$ $T_j = T_j$ max.	$I_{RRM} / I_{DRM}$	20	mA
$I^2t$ value for fusing At $t_p = 10$ ms, 100% $V_{RRM}$ , sine half-wave, initial $T_j = T_j$ max.	$I^2t$	15900	$\text{A}^2\text{s}$
Repetitive peak off-state voltage	$V_{DRM}$	1800	V
Repetitive reverse voltage	$V_{RRM}$	1800	
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
<b>Characteristics</b>			
Thyristor Thermal resistance, junction to case	$R_{thJC}$	0.28	K/W
Diode Thermal resistance, junction to case	$R_{thJD}$	0.22	
Isolation voltage, RMS (measured between terminals and case, 50-60Hz for 1-3 seconds)	$V_{iso}$	3000	V

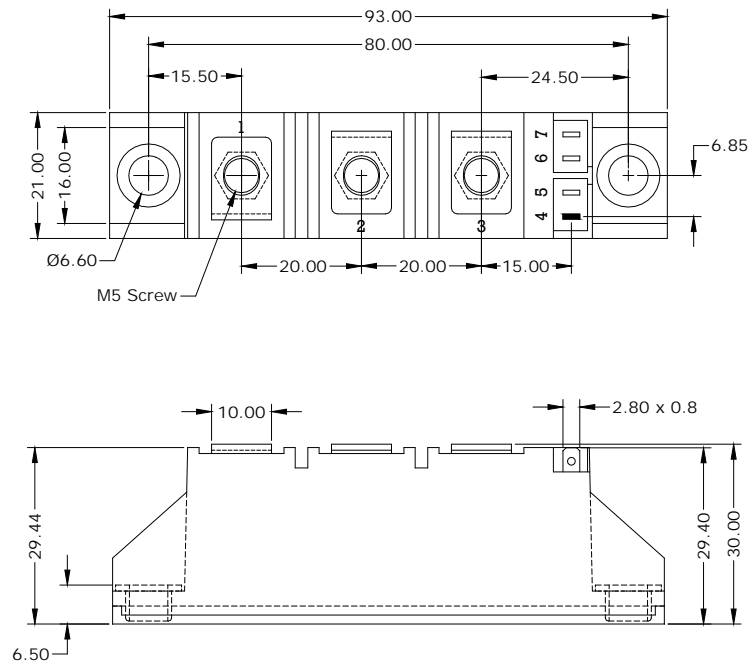
**Electrical Characteristics (Thyristor)**, at  $T_j = 25^\circ\text{C}$ , unless otherwise specified

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 $V_{AK}=6\text{V}$ , resistive load	$I_{GT}$	30	-	150	mA
Holding Current $V_{AK}=6\text{V}$ , $I_T=1\text{A}$ , resistive load	$I_H$	-	-	220	mA
Latching current $V_{AK}=6\text{V}$ , $I_T=1\text{A}$ , resistive load	$I_L$	-	-	400	mA
On-state or forward voltage $I_T = 325\text{A}$ $I_T = 200\text{A}$	$V_{TM}$	- -	1.5 1.38	- -	V

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

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
<b>Static Characteristics</b>					
Reverse leakage current $V_R = 1600\text{V}$	$I_R$	-	-	10	mA
Forward voltage drop $I_F = 100\text{A}$	$V_F$	-	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.**