

## Phase Control Thyristors (Capsule Type)

## Features

- Metal case with ceramic insulator
- High current rating
- Bifacial cooled
- Center gate trigger

## Applications

- DC motor controls
- AC controllers
- DC power supplies



A-24 (K-PUK)

## Voltage Ratings

Type number	Voltage Code	$V_{DRM}/V_{RRM}$ , Maximum Repetitive peak & off-state voltage V	$V_{RSM}$ , Maximum non-repetitive peak voltage V	$I_{DRM}/I_{RRM}$ , Maximum at $T_J = T_J$ maximum mA
1004DCR	40	400	500	60
	60	600	700	
	80	800	900	
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

Electrical Ratings ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)

Parameters	Symbol	Values	Units
Maximum on-state average current $180^\circ$ sinusoidal conduction @ $T_C = 55^\circ\text{C}$	$I_{T(AV)}$	1000	A
Maximum RMS on-state current	$I_{T(RMS)}$	1570	A
Maximum peak, one cycle non-repetitive surge current	$I_{TSM}$	18000	A
Maximum $I^2t$ for fusing @ $t = 10\text{ms}$	$I^2t$	1620	$\text{kA}^2\text{s}$
Maximum repetitive peak on and off-state voltage range	$V_{RRM}, V_{DRM}$	400 to 1600	V
Maximum peak on-state voltage ( $T_J = 125^\circ\text{C}$ , $I_{peak} = 1100\text{A}$ )	$V_{TM}$	2.0	V
Maximum holding current @ $T_J = 25^\circ\text{C}$	$I_H$	250	mA
Maximum latching current @ $T_J = 25^\circ\text{C}$	$I_L$	800	mA
Threshold voltage	$V_{TO}$	1.12	V
Slope resistance	$r_T$	0.25	$\text{m}\Omega$

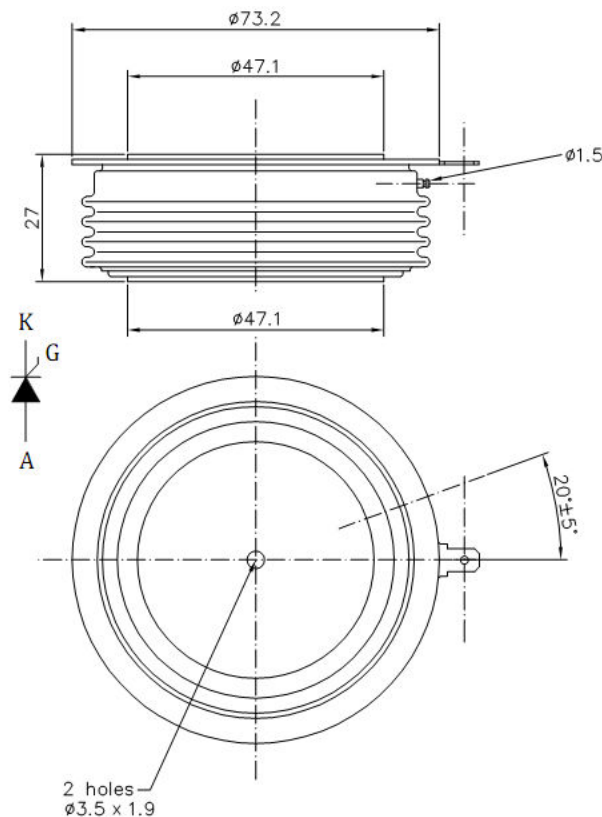
Switching Ratings ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)

Parameters	Symbol	Values	Units
Rate of rise of turn-on current @ $T_J = T_J$ max, anode voltage $\leq 80\% V_{DRM}$	$di/dt$	200	$\text{A}/\mu\text{s}$
Typical turn-on time	$t_d$	10	$\mu\text{s}$
Typical turn-off time	$t_q$	200	

Blocking Parameters ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)			
Parameters	Symbol	Values	Units
Critical rate of rise of off-state voltage @ $T_J = T_J \text{ max}$ , linear to 80% rated $V_{\text{DRM}}$	$dV/dt$	500	$\text{V}/\mu\text{s}$
Maximum peak reverse & off-state leakage current @ $T_J = T_J \text{ max}$ , rated $V_{\text{DRM}}/V_{\text{RRM}}$ applied	$I_{\text{RRM}}, I_{\text{DRM}}$	60	mA

Triggering Parameters ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)			
Parameters	Symbol	Values	Units
DC gate current to trigger	$I_{\text{GT}}$	200	mA
DC gate voltage to trigger	$V_{\text{GT}}$	3.0	V

Thermal and Mechanical Specifications ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)			
Parameters	Symbol	Values	Units
Maximum operating junction temperature range	$T_J$	- 40 to +125	$^\circ\text{C}$
Maximum storage temperature range	$T_{\text{Stg}}$	- 40 to +125	$^\circ\text{C}$
Maximum thermal resistance, junction to case	$R_{\text{th}(JC)}$	0.031	$^\circ\text{C}/\text{W}$
Mounting torque	F	16 ... 22	kN
Approximate weight	$W_T$	490	g



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