

## Phase Control Thyristors (Capsule Type)

### Features

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



TO-200AB (E-PUK)

### Applications

- DC motor control
- AC controllers
- DC power supplies

<b>Voltage Ratings</b>				
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 $T_J = T_{J\max}$ mA
604DCR	40	400	500	40
	60	600	700	
	80	800	900	
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

<b>Electrical Ratings (<math>T_J = 25^\circ C</math>, unless otherwise specified)</b>				
Parameters		Symbol	Values	Units
Maximum on-state average current 180° sinusoidal conduction @ $T_C = 55^\circ C$		$I_{T(AV)}$	600	A
Maximum RMS on-state current		$I_{T(RMS)}$	940	A
Maximum peak, one cycle non-repetitive surge current		$I_{TSM}$	9100	A
Maximum $I^2t$ for fusing @ $t = 10ms$		$I^2t$	415	$A^2s$
Maximum repetitive peak on and off-state voltage range		$V_{RRM}, V_{DRM}$	400 to 1600	V
Maximum peak on-state voltage ( $T_J = 125^\circ C$ , $I_{peak} = 1100A$ )		$V_{TM}$	1.7	V
Maximum holding current @ $T_J = 25^\circ C$		$I_H$	200	mA
Maximum latching current @ $T_J = 25^\circ C$		$I_L$	800	mA
Threshold voltage		$V_{TO}$	1.0	V
Slope resistance		$r_T$	0.65	$m\Omega$

<b>Switching Ratings (<math>T_J = 25^\circ C</math>, unless otherwise specified)</b>				
Parameters		Symbol	Values	Units
Rate of rise of turn-on current @ $T_J = T_{J\max}$ , anode voltage $\leq 80\% V_{DRM}$		$di/dt$	150	$A/\mu s$
Typical turn-on time		$t_d$	9.0	$\mu s$
Typical turn-off time		$t_q$	150	

**Blocking Parameters ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)**

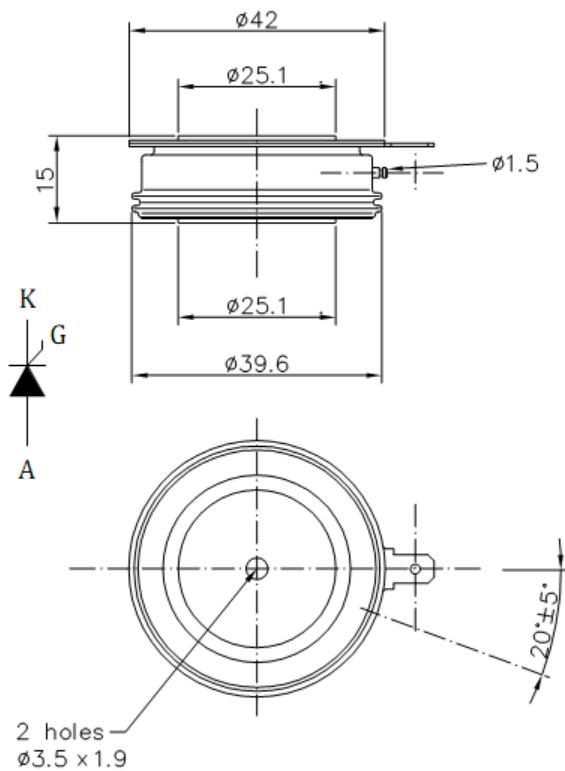
Parameters	Symbol	Values	Units
Critical rate of rise of off-state voltage @ $T_J = T_J$ max, linear to 80% rated $V_{\text{DRM}}$	dV/dt	500	V/ $\mu\text{s}$
Maxmimum peak reverse & off-state leakage current @ $T_J = T_J$ max, rated $V_{\text{DRM}}/V_{\text{RRM}}$ applied	$I_{\text{RRM}}, I_{\text{DRM}}$	40	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	$R_{\text{th(JC)}}$	0.06	$^\circ\text{C}/\text{W}$
Mounting torque	$F$	9 ... 11	kN
Approximate weight	$W_T$	90	g



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