

## Features

1. High dv/dt
2. High surge capability
3. Standard package hermetic metal case with ceramic insulator
4. Compression Bonded Encapsulation for heavy duty operations such as severe thermal cycling
5. Types up to 1600V

### Typical Applications

- DC motor control
- Controlled DC power supplies
- AC controllers

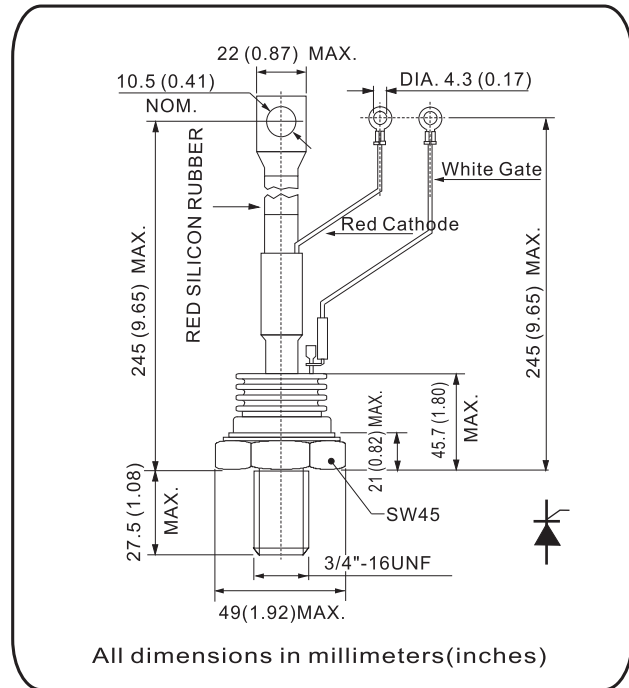
### Ordering code

500	PT	16	S	M
(1)	(2)	(3)	(4)	(5)

- (1) Maximum average on-state current, A
- (2) For phase control thyristors
- (3) Voltage code, code x 100 =  $V_{RRM}/V_{DRM}$
- (4) For stud type
- (5) M24x1.5

## Electrical Characteristics

## PHASE CONTRAL THYRISTORS



Symbol	Parameter	Condition	Value	Unit
$I_T(AV)$	Mean on-state current	180° half sine wave, 50Hz Single side cooled, $T_C = 85^\circ C$	500	A
$I_T(RMS)$	Max. RMS on-state current	Single side cooled	794	A
$V_{RRM}$ $V_{DRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}$ & $V_{RRM}$ $t_p = 10ms$ $V_{DSM}$ & $V_{RSM} = V_{DRM}$ & $V_{RRM} + 100V$	200 to 1600	V
$I_{TSM}$	Surge on-state current	8.3 ms half sine wave	10855	A
$I_t^2$	For fusing coordination	No voltage reapplied	649	$Ka^2s$
$V_T(TO)$	Threshold voltage		0.84	V
$r_t$	On-state slope resistance		0.42	$m\Omega$
$V_{TM}$	Max. Forward voltage drop	$T_j = T_j \text{ max.}$	1.5	V
$I_H$	Holding current	$V_A = 12V$ , $I_A = 1A$	600	mA
$d_{i/dt}$	Critical rate of rise of turned-on current	Gate drive 20V, 20Ω, $t_r \leq 1\mu s$	1000	$A/\mu s$
$t_q$	Typical turn-off time	$I_{TM} = 300A$ , $T_j = T_j \text{ max.}$ , $d_{i/dt} = 20A/\mu s$ , $V_R = 50V$ $d_{v/dt} = 20V/\mu s$ , Gate 0V 100Ω	100	$\mu s$
$d_{v/dt}$	Critical rate of rise of off-state voltage	$T_j = T_j \text{ max.}$ linear to 80% rated $V_{DRM}$	500	$V/\mu s$
$P_G$	Max. average gate power	$T_j = T_j \text{ max.}$ $t_p \leq 5ms$	2	W
$P_{GM}$	Max. peak gate power square		10	W
$I_{GT}$	Gate trigger current	$V_A = 12V$ , $I_A = 1A$	200	mA
$V_{GT}$	Gate trigger voltage		3	V
$T_{stg}/T_j$	Storage temperature		-40 to 150	$^\circ C$
$R_{th(j-h)}$	Thermal resistance(junction to case)	Single side cooled	0.08	K/W
T	Mounting force		48.5	Nm
$W_t$	Approximate weight		520	g