

THYRISTOR MODULE

30A / 800V

PHT308C

FEATURES

- * Compatible with Isolated Base SOT227
- * Single Thyristor
- * High Surge Capability

TYPICAL APPLICATIONS

- * AC phase control

OUTLINE DRAWING

See the Next Page

Maximum Ratings

Approx Net Weight:35g

Parameter	Symbol	Grade	Unit
		PHT308C	
Repetitive Peak Off-State Voltage	V_{DRM}	800	V
Non Repetitive Peak Off-State Voltage	V_{DSM}	960	
Repetitive Peak Reverse Voltage	V_{RRM}	800	V
Non Repetitive Peak Reverse Voltage	V_{RSM}	960	

Parameter		Conditions	Max Rated Value	Unit
Average Rectified Output Current *1	$I_{O(AV)}$	50Hz Half Sine Wave condition $T_c = T_o$ Be Determined	30	A
RMS On-State Current	$I_{T(RMS)}$		47	A
Surge Forward Current	I_{FSM}	50 Hz Half Sine Wave, 1cycle Non-Repetitive	300	A
I Squared t	I^2t	2msec to 10msec	450	A ² s
Critical Rate of Turned-On Current	di/dt	$V_D = 2/3 V_{DRM}$, $I_{TM} = 2 \cdot I_O$, $T_j = 125^\circ C$ $I_G = 200mA$, $di_G/dt = 0.2A/\mu s$	100	A/ μs
Peak Gate Power	P_{GM}		5	W
Average Gate Power	$P_{G(AV)}$		1	W
Peak Gate Current	I_{GM}		2	A
Peak Gate Voltage	V_{GM}		10	V
Peak Gate Reverse Voltage	V_{RGM}		5	V
Operating Junction Temperature Range	T_{jw}		-40 to +125	$^\circ C$
Storage Temperature Range	T_{stg}		-40 to +125	$^\circ C$
Isolation Voltage	Viso	Base Plate to Terminals, AC1min	2500	V
Mounting torque	Case mounting	Ftor	M4 Screw	N.m
	Terminals		M4 Screw	

Value per 1 Arm

Electrical • Thermal Characteristics

Characteristics	Symbol	Test Conditions	Maximum Value.			Unit
			Min.	Typ.	Max.	
Peak Off-State Current	I_{DM}	$V_{DM} = V_{DRM}$, $T_j = 125^{\circ}C$			10	mA
Peak Reverse Current	I_{RM}	$V_{RM} = V_{RRM}$, $T_j = 125^{\circ}C$			10	mA
Peak On-State Voltage	V_{TM}	$I_{TM} = 90A$, $T_j = 25^{\circ}C$			1.5	V
Gate Current to Trigger	I_{GT}	$V_D = 6V, I_T = 1A$	$T_j = -40^{\circ}C$		200	mA
			$T_j = 25^{\circ}C$		100	
			$T_j = 125^{\circ}C$		50	
Gate Voltage to Trigger	V_{GT}	$V_D = 6V, I_T = 1A$	$T_j = -40^{\circ}C$		4	V
			$T_j = 25^{\circ}C$		2.5	
			$T_j = 125^{\circ}C$		2	
Gate Non-Trigger Voltage	V_{GD}	$V_D = 2/3V_{DRM}$, $T_j = 125^{\circ}C$	0.25			V
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_D = 2/3V_{DRM}$, $T_j = 125^{\circ}C$	500			V/ μs
Turn-Off Time	t_q	$I_{TM} = I_O, V_D = 2/3V_{DRM}$ $dv/dt = 20V/\mu s$, $V_R = 100V$ $-di/dt = 20A/\mu s$, $T_j = 125^{\circ}C$		100		μs
Turn-On Time	t_{gt}	$T_j = 25^{\circ}C$, $I_{TM} = I_{T(RMS)}$		6		μs
Delay Time	t_d	$V_D = 2/3V_{DRM}$, $I_G = 200mA$		2		μs
Rise Time	t_r	$di_G/dt = 0.2A/\mu s$		4		μs
Latching Current	I_L	$T_j = 25^{\circ}C$		100		mA
Holding Current	I_H	$T_j = 25^{\circ}C$		50		
Thermal Resistance *1	$R_{th(j-c)}$	Junction to Case			1.33	$^{\circ}C/W$
	$R_{th(c-f)}$	Base Plate to Heat Sink with Thermal Compound			0.3	

Value Per 1Arm

*1: Value Per Module

PHT308C OUTLINE DRAWING (Dimensions in mm)

