

THYRISTOR MODULE

PHT25012 PHT25016

250A / 1200V to 1600V

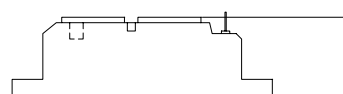
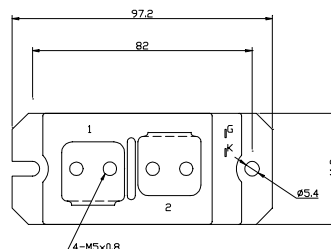
OUTLINE DRAWING

FEATURES

- * Isolated Base
- * Single Thyristor Module
- * High Surge Capability
- * UL Recognized, File No. E187184

TYPICAL APPLICATIONS

- * Rectified For General Use



Maximum Ratings

Approx Net Weight:250g

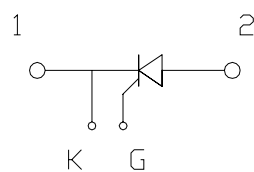
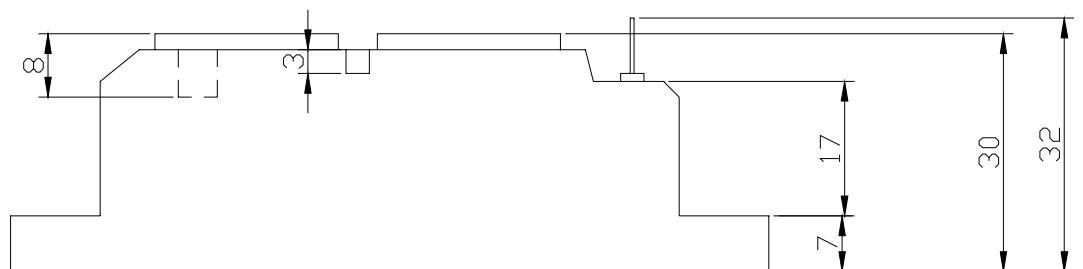
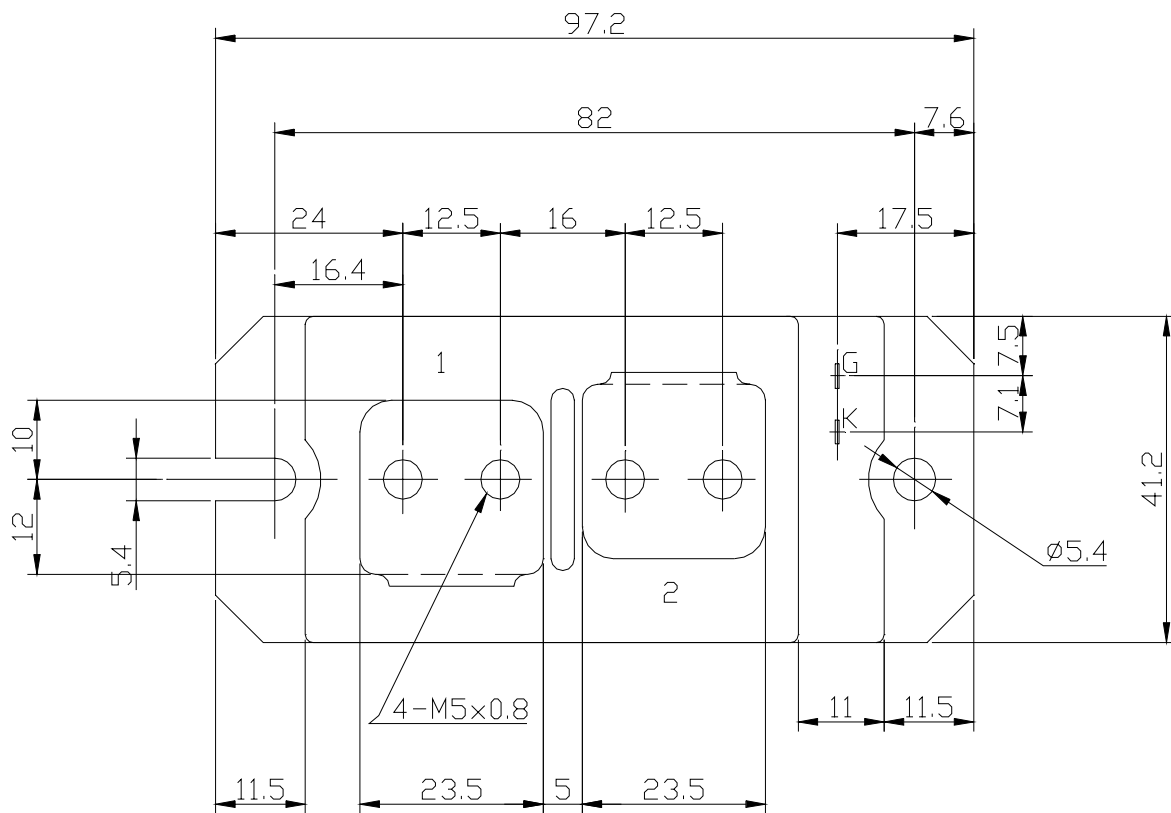
Parameter	Symbol	Grade		Unit
		PHT25012	PHT25016	
Repetitive Peak Off-State Voltage	V_{DRM}	1200	1600	V
Non Repetitive Peak Off-State Voltage	V_{DSM}	1300	1700	
Repetitive Peak Reverse Voltage	V_{RRM}	1200	1600	V
Non Repetitive Peak Reverse Voltage	V_{RSM}	1300	1700	

Parameter			Conditions	Max Rated Value	Unit
Average Rectified Output Current		$I_{O(AV)}$	50Hz Half Sine Wave condition $T_c=65^{\circ}C$	250	A
RMS On-State Current		$I_{T(RMS)}$		390	A
Surge On-State Current		I_{TSM}	50 Hz Half Sine Wave, 1Pulse Non-Repetitive	4000	A
I Squared t		I^2t	2msec to 10msec	80000	A^2s
Critical Rate of Turned-On Current		di/dt	$V_D=2/3V_{DRM}$, $I_{TM}=2 \cdot I_O$, $T_j=125^{\circ}C$ $I_G=300mA$, $di_G/dt=0.2A/\mu s$	100	$A/\mu s$
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 JunctionTemperature Range		T_{jw}		-40 to +125	$^{\circ}C$
Storage Temperature Range		T_{stg}		-40 to +125	$^{\circ}C$
Isoration Voltage		V_{iso}	Base Plate to Terminals, AC1min	2500	V
Mounting torque	Case mounting	F_{tor}	M5 Screw	2.4 to 2.8	N.m
	Terminals		M5 Screw	2.4 to 2.8	

Electrical • Thermal Characteristics

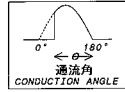
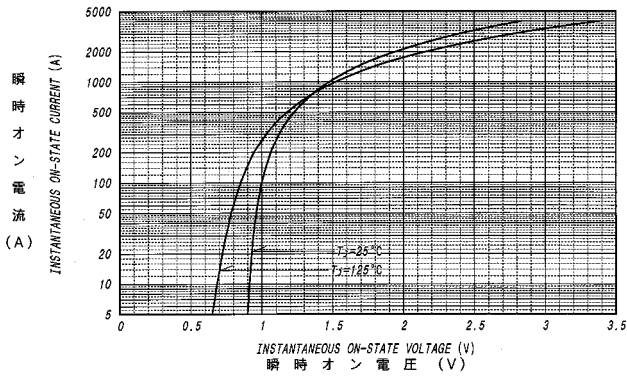
Characteristics	Symbol	Test Conditions	Maximum Value.			Unit
			Min.	Typ.	Max.	
Peak Off-State Current	I_{DM}	$V_{DM} = V_{DRM}, T_j = 125^{\circ}\text{C}$			80	mA
Peak Reverse Current	I_{RM}	$V_{RM} = V_{RRM}, T_j = 125^{\circ}\text{C}$			80	mA
Peak Forward Voltage	V_{TM}	$I_{TM} = 800\text{A}, T_j = 25^{\circ}\text{C}$			1.38	V
Gate Current to Trigger	I_{GT}	$V_D = 6\text{V}, I_T = 1\text{A}$	$T_j = -40^{\circ}\text{C}$		300	mA
			$T_j = 25^{\circ}\text{C}$		150	
			$T_j = 125^{\circ}\text{C}$		80	
Gate Voltage to Trigger	V_{GT}	$V_D = 6\text{V}, I_T = 1\text{A}$	$T_j = -40^{\circ}\text{C}$		5	V
			$T_j = 25^{\circ}\text{C}$		3	
			$T_j = 125^{\circ}\text{C}$		2	
Gate Non-Trigger Voltage	V_{GD}	$V_D = 2/3 V_{DRM}, T_j = 125^{\circ}\text{C}$	0.25			V
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_D = 2/3 V_{DRM}, T_j = 125^{\circ}\text{C}$	500			V/ μs
Turn-Off Time	t_q	$I_{TM} = I_O, V_D = 2/3 V_{DRM}$ $dv/dt = 20\text{V}/\mu\text{s}, V_R = 100\text{V}$ $-di/dt = 20\text{A}/\mu\text{s}, T_j = 125^{\circ}\text{C}$		200		μs
Turn-On Time	t_{gt}	$V_D = 2/3 V_{DRM}, T_j = 125^{\circ}\text{C}$ $I_G = 300\text{mA}, di_G/dt = 0.2\text{A}/\mu\text{s}$		6		μs
Delay Time	t_d			2		μs
Rise Time	t_r			4		μs
Latching Current	I_L	$T_j = 25^{\circ}\text{C}$		150		mA
Holding Current	I_H	$T_j = 25^{\circ}\text{C}$		100		
Thermal Resistance	$R_{th(j-c)}$	Junction to Case			0.18	$^{\circ}\text{C}/\text{W}$
	$R_{th(c-f)}$	Base Plate to Heat Sink with Thermal Compound			0.1	

PHT2501x OUTLINE DRAWING (Dimensions in mm)

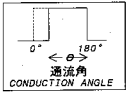
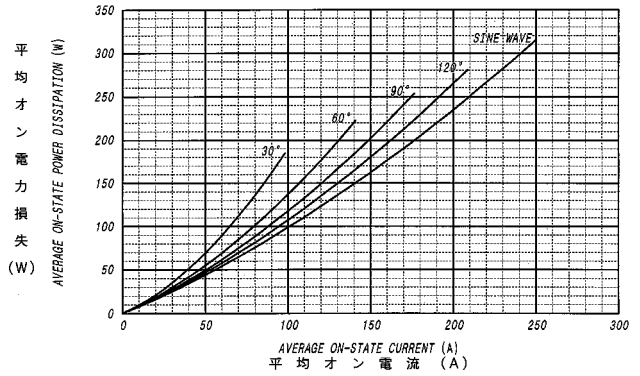


The striking distance between the anode and the cathode of this module is 5mm filling with UL1557, but when used by the system of 400VAC, take an enough striking distance and wire.

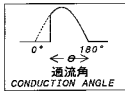
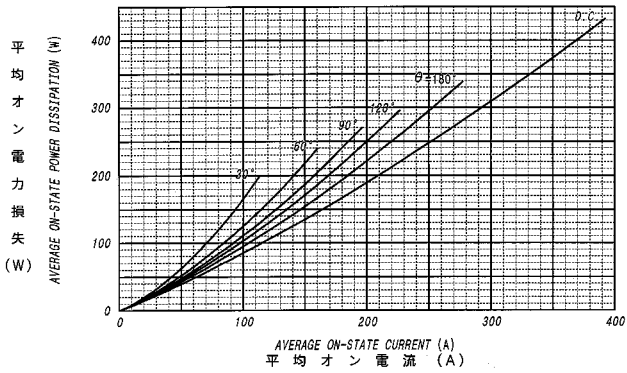
オン電圧特性
ON-STATE CURRENT VS. VOLTAGE



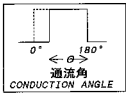
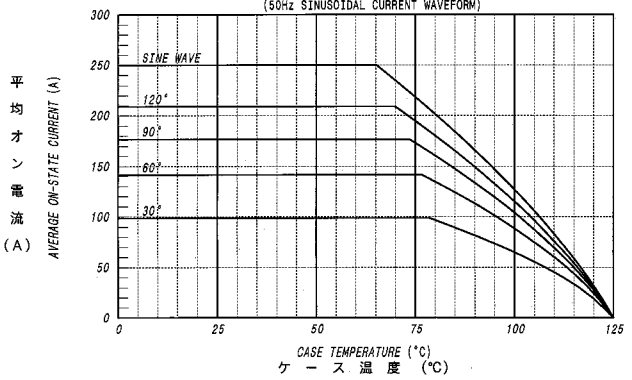
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for SINUSOIDAL CURRENT WAVEFORM



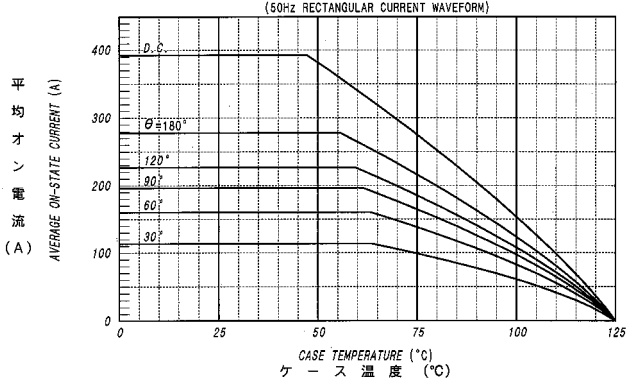
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for RECTANGULAR CURRENT WAVEFORM



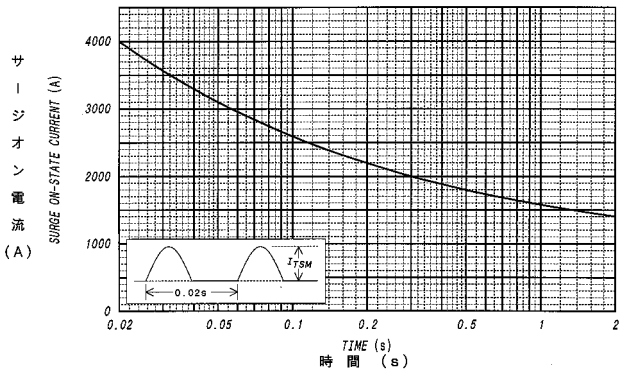
平均オン電流 - ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE
(50Hz SINUSOIDAL CURRENT WAVEFORM)



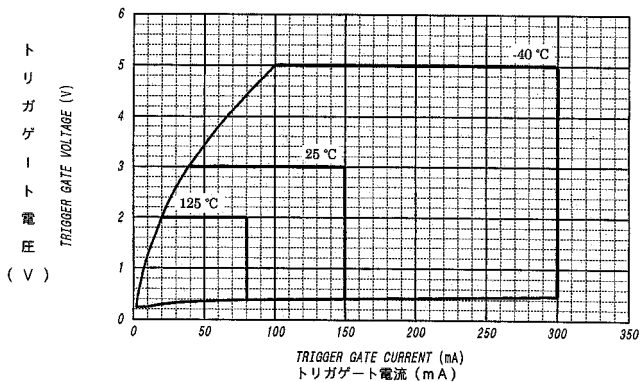
平均オン電流 - ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE
(50Hz RECTANGULAR CURRENT WAVEFORM)



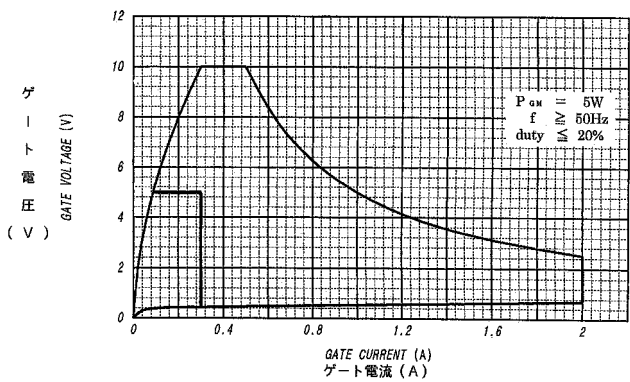
サージオン電流定格
SURGE CURRENT RATINGS
f=50Hz, Half Sine Wave, Non-Repetitive, Tj=125°C



ゲート特性
GATE CHARACTERISTICS



ゲート定格
GATE RATINGS



過渡熱抵抗特性
MAXIMUM TRANSIENT THERMAL IMPEDANCE
Junction to Case

