

THYRISTOR MODULE

P C H 3 0 8

30A / 800V

FEATURES

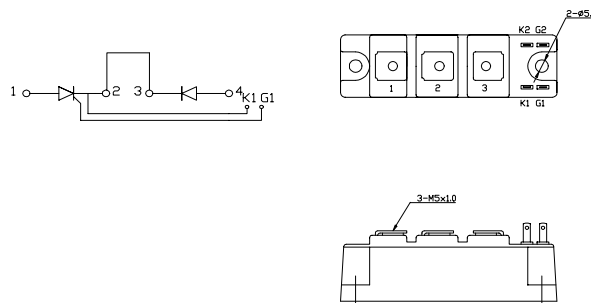
- * Isolated Base
- * Thyristor and Diode Cathode Common
- * High Surge Capability
- * UL Recognized, File No. E187184

OUTLINE DRAWING

TYPICAL APPLICATIONS

- * Rectified For General Use

PCH



Maximum Ratings

Approx Net Weight:155g

Parameter	Symbol	Grade	Unit
		PCH308	
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	$I_{O(AV)}$	50Hz Half Sine Wave condition $T_c=95^{\circ}C$	30	A
RMS On-State Current	$I_{T(RMS)}$		47	A
Surge On-State Current	I_{TSM}	50 Hz Half Sine Wave,1Pulse, Non-Repetitive	600	A
I Squared t	I^2t	2msec to 10msec	1800	A^2s
Critical Rate of Turned-On Current	di/dt	$V_D=2/3V_{DRM}$, $I_{TM}=2 \cdot I_O$, $T_j=125^{\circ}C$ $I_G=200mA$, $di_G/dt=0.2A/\mu s$	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	Viso	Base Plate to Terminals, AC1min	2000	V
Mounting torque	Case mounting	Ftor	M5 Screw	N•m
	Terminals		M5 Screw	

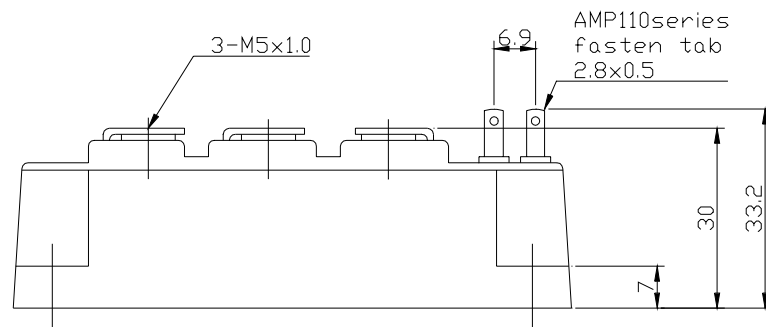
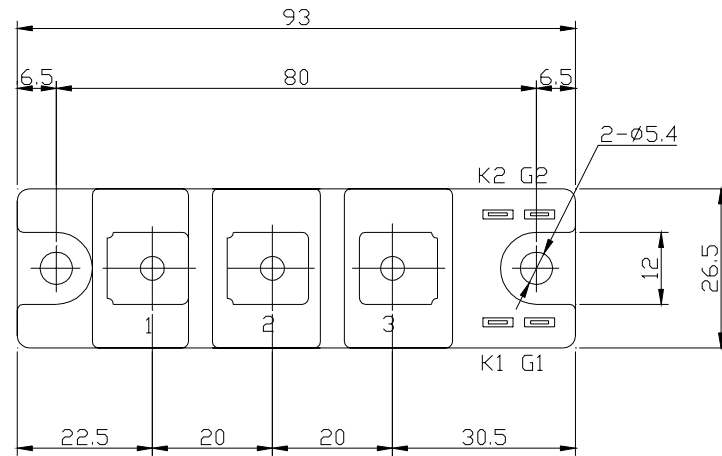
Value per 1 Arm

Electrical • Thermal Characteristics

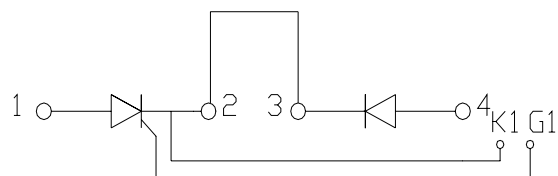
Characteristics	Symbol	Test Conditions	Maximum Value.			Unit
			Min.	Typ.	Max.	
Peak Off-State Current	I_{DM}	$V_{DM} = V_{DRM}$, $T_j = 125^{\circ}\text{C}$			10	mA
Peak Reverse Current	I_{RM}	$V_{RM} = V_{RRM}$, $T_j = 125^{\circ}\text{C}$			10	mA
Peak Forward Voltage	V_{TM}	$I_{TM} = 90\text{A}$, $T_j = 25^{\circ}\text{C}$			1.45	V
Gate Current to Trigger	I_{GT}	$V_D = 6\text{V}$, $I_T = 1\text{A}$	$T_j = -40^{\circ}\text{C}$		200	mA
			$T_j = 25^{\circ}\text{C}$		100	
			$T_j = 125^{\circ}\text{C}$		50	
Gate Voltage to Trigger	V_{GT}	$V_D = 6\text{V}$, $I_T = 1\text{A}$	$T_j = -40^{\circ}\text{C}$		4	V
			$T_j = 25^{\circ}\text{C}$		2.5	
			$T_j = 125^{\circ}\text{C}$		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	$I_{TM} = I_O$, $V_D = 2/3 V_{DRM}$ $dv/dt = 20\text{V}/\mu\text{s}$, $V_R = 100\text{V}$ $-di/dt = 20\text{A}/\mu\text{s}$, $T_j = 125^{\circ}\text{C}$		100		μs
Turn-On Time	t_{gt}	$V_D = 2/3 V_{DRM}$, $T_j = 125^{\circ}\text{C}$ $I_G = 200\text{mA}$, $di_G/dt = 0.2\text{A}/\mu\text{s}$		6		μs
Delay Time	t_d			2		μs
Rise Time	t_r			4		μs
Latching Current	I_L	$T_j = 25^{\circ}\text{C}$		100		mA
Holding Current	I_H	$T_j = 25^{\circ}\text{C}$		50		
Thermal Resistance	$R_{th(j-c)}$	Junction to Case			0.7	$^{\circ}\text{C}/\text{W}$
	$R_{th(c-f)}$	Base Plate to Heat Sink with Thermal Compound			0.2	

Value Per 1Arm

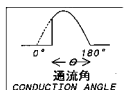
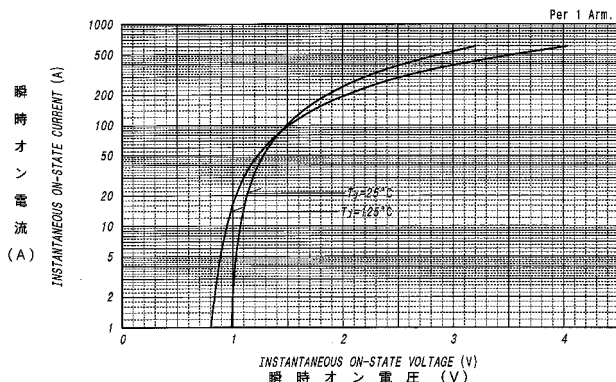
PCH308 OUTLINE DRAWING (Dimensions in mm)



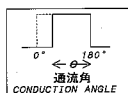
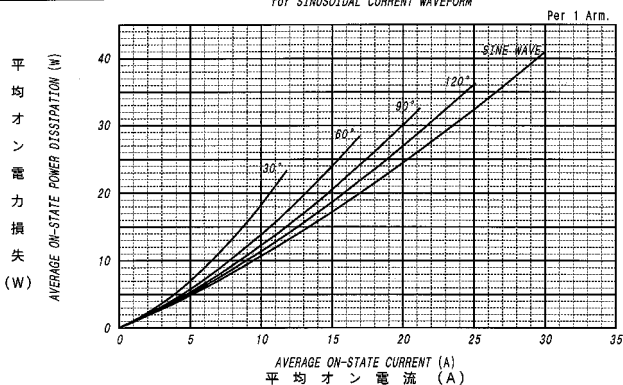
PCH



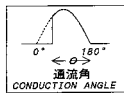
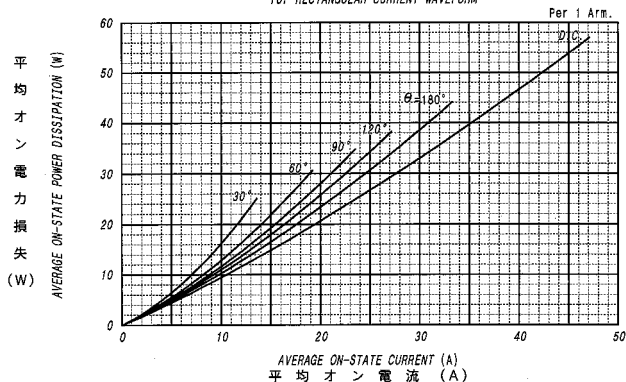
オン電圧特性
ON-STATE CURRENT VS. VOLTAGE



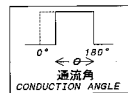
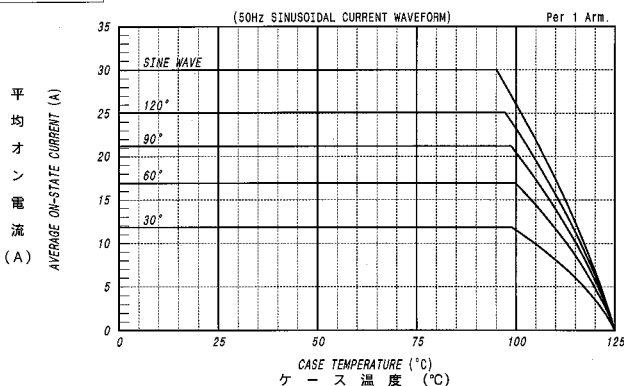
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for SINUSOIDAL CURRENT WAVEFORM



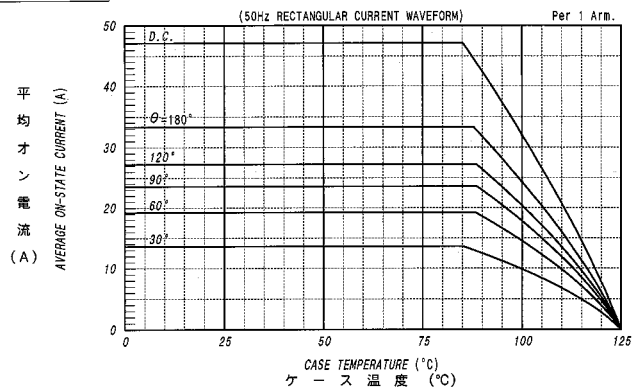
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for RECTANGULAR CURRENT WAVEFORM



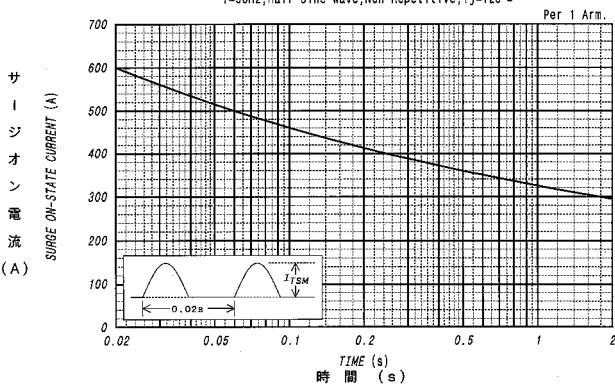
平均オン電流 - ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



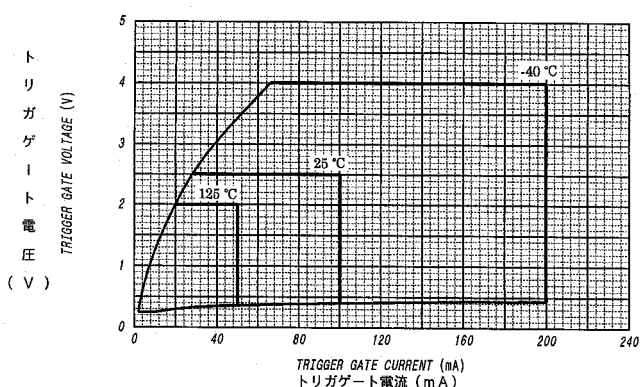
平均オン電流 - ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



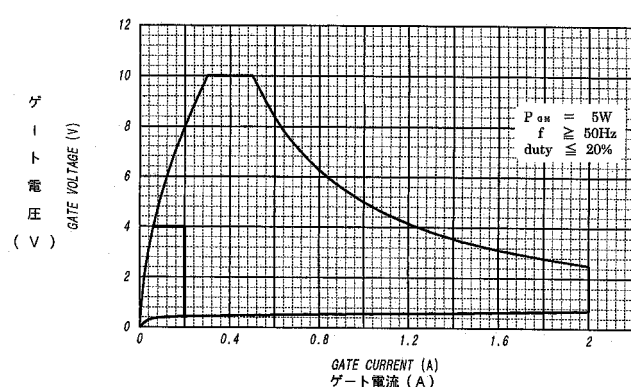
サージオン電流定格
SURGE CURRENT RATINGS
f=50Hz, Half Sine Wave, Non-Repetitive, Tj=125°C



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

