Nihon Inter Electronics Corporation

THYRISTOR MODULE

PCH10012 PCH10016

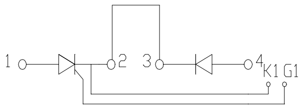
100A / 1200 to 1600V

FEATURES

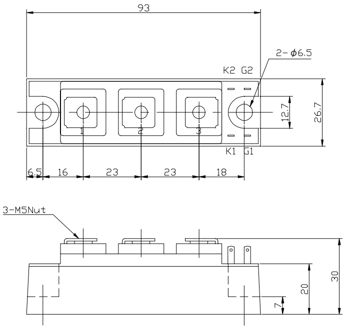
- * Isolated Base
- * Thyristor and Diode Cathode Common
- * High Surge Capability
- * UL Recognized, File No. E187184

TYPICAL APPLICATIONS

- * Rectified For General Use



OUTLINE DRAWING



Maximum Ratings

Approx Net Weight:155g

Parameter	Symbol	Grade		Unit
		PCH10012	PCH10016	
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 Tc=77°C	100	A
RMS On-State Current		$I_{T(RMS)}$		156	A
Surge On-State Current		I_{TSM}	50 Hz Half Sine Wave,1Pulse Non-Repetitive	2000	A
I Squared t		I^2t	2msec to 10msec	20000	A^2s
Critical Rate of Turned-On Current		di/dt	$V_D=2/3V_{DRM}$, $I_{TM}=2\cdot I_O$, Tj=125°C I_G=200mA, di_G/dt=0.2A/μs	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 JunctionTemperature Range		Tjw		-40 to +125	°C
Storage Temperature Range		Tstg		-40 to +125	°C
Isoration Voltage		Viso	Base Plate to Terminals, AC1min	2500	V
Mounting torque	Case mounting	Ftor	M6 Screw	2.4 to 3.5	N•m
	Terminals		M5 Screw	2.4 to 2.8	

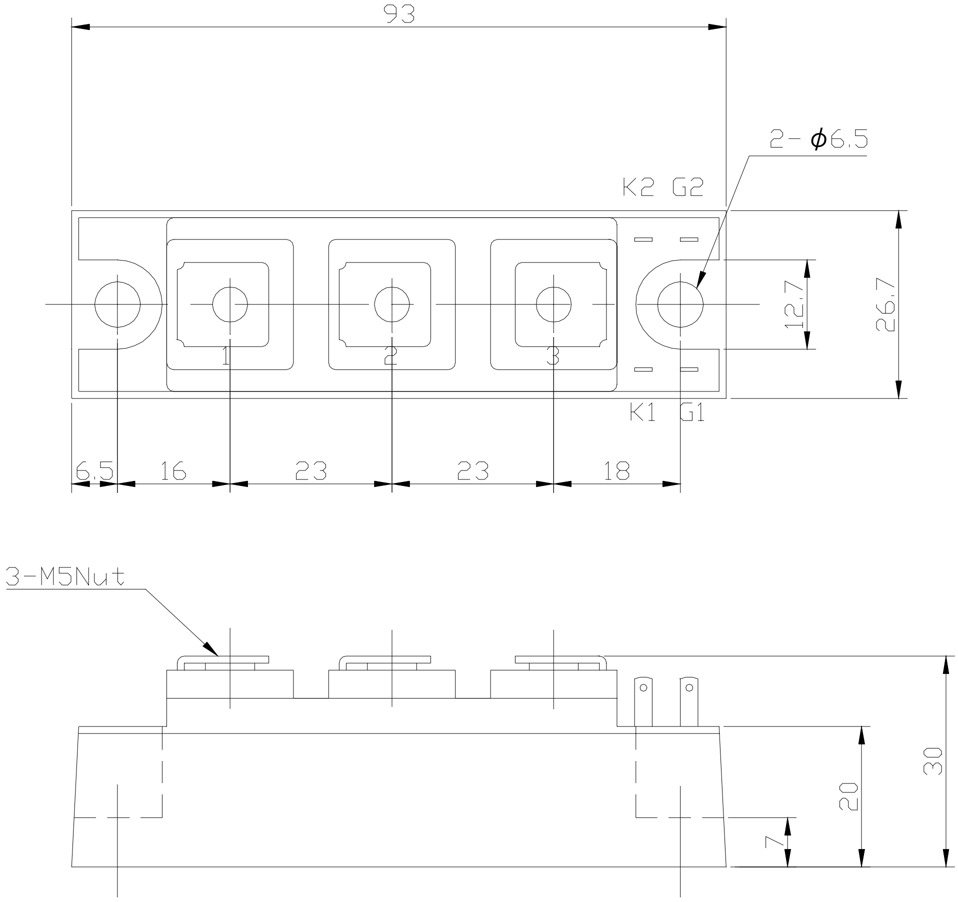
Value per 1 Arm

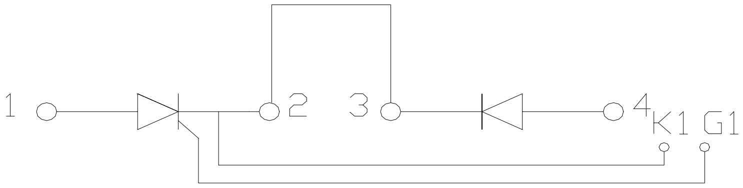
Electrical • Thermal Characteristics

Characteristics	Symbol	Test Conditions		Maximum Value.			Unit
				Min.	Typ.	Max.	
Peak Off-State Current	I_{DM}	V_{DM}= V_{DRM}, Tj= 125°C				20	mA
Peak Reverse Current	I_{RM}	V_{RM}= V_{RRM}, Tj= 125°C				20	mA
Peak Forward Voltage	V_{TM}	I_{TM}= 300A, Tj=25°C				1.38	V
Gate Current to Trigger	I_{GT}	V_D=6V,I_T=1A	Tj=-40°C			200	mA
			Tj=25°C			100	
			Tj=125°C			50	
Gate Voltage to Trigger	V_{GT}	V_D=6V,I_T=1A	Tj=-40°C			4	V
			Tj=25°C			2.5	
			Tj=125°C			2	
Gate Non-Trigger Voltage	V_{GD}	V_D=2/3V_{DRM} Tj=125°C		0.25			V
Critical Rate of Rise of Off-State Voltage	dv/dt	V_D=2/3V_{DRM} Tj=125°C		500			V/μs
Turn-Off Time	tq	I_{TM}=I_O,V_D=2/3V_{DRM} dv/dt=20V/μs, V_R=100V -di/dt=20A/μs, Tj=125°C			100		μs
Turn-On Time	tgt	V_D=2/3V_{DRM} Tj=125°C I_G=200mA, di_G/dt=0.2A/μs			6		μs
Delay Time	td				2		μs
Rise Time	tr				4		μs
Latching Current	I_L	Tj=25°C			100		mA
Holding Current	I_H	Tj=25°C			50		
Thermal Resistance	Rth(j-c)	Junction to Case				0.35	°C/W
	Rth(c-f)	Base Plate to Heat Sink with Thermal Compound				0.2	

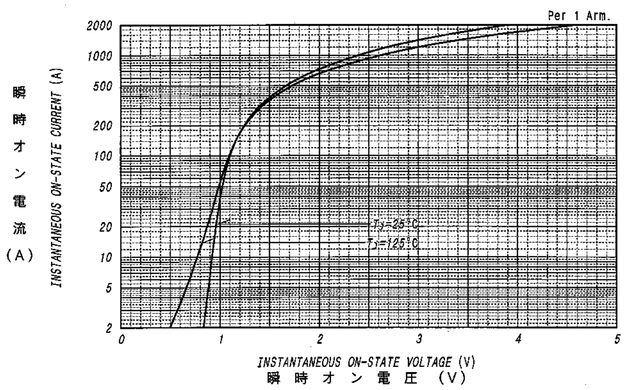
Value Per 1Arm

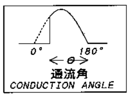
PCH1001x OUTLINE DRAWING (Dimensions in mm)





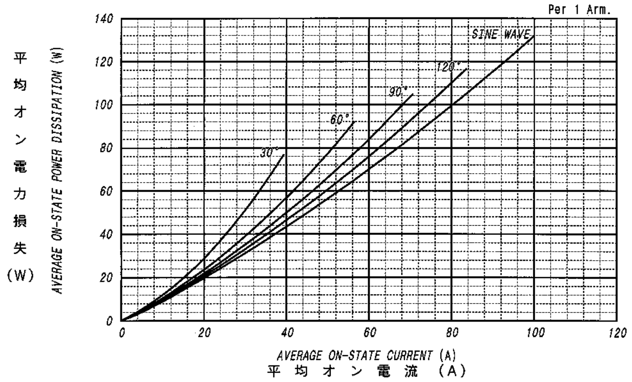
オン電圧特性
ON-STATE CURRENT VS. VOLTAGE

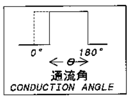




平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION

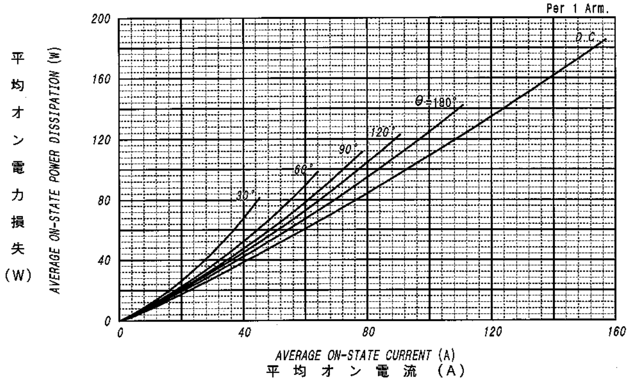
for SINUSOIDAL CURRENT WAVEFORM

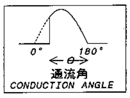




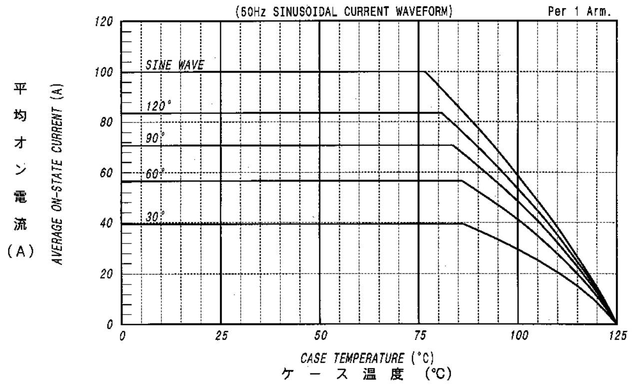
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION

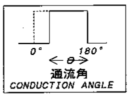
for RECTANGULAR CURRENT WAVEFORM



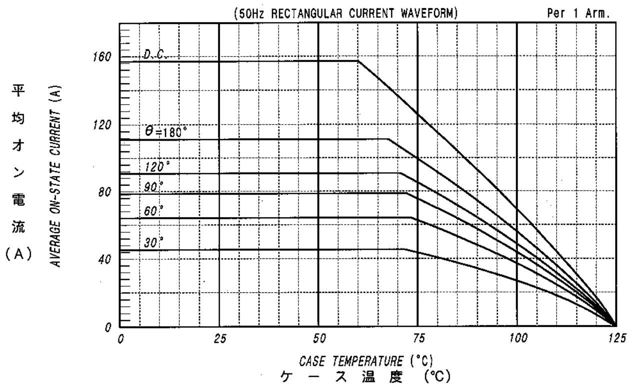


平均オン電流－ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



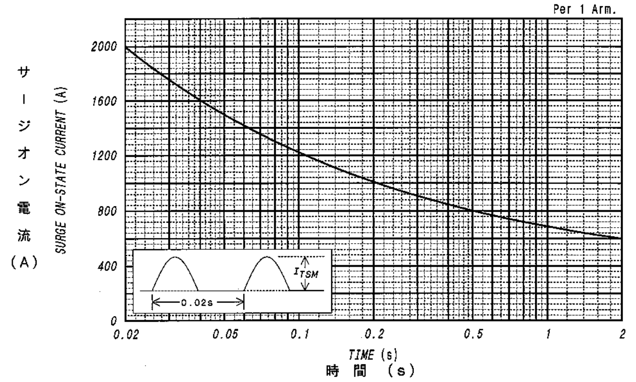


平均オン電流－ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE

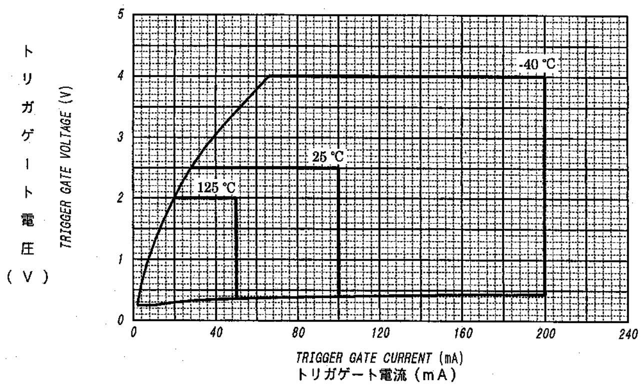


サージオン電流定格
SURGE CURRENT RATINGS

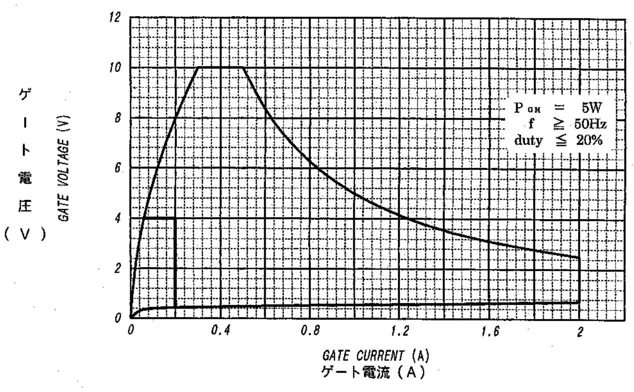
f=50Hz,Half Sine Wave,Non-Repetitive,Tj=125°C



ゲート特性
GATE CHARACTERISTCS



ゲート定格
GATE RATINGS



過渡熱抵抗特性

MAXIMUM TRANSIENT THERMAL IMPEDANCE

Junction to Case