

THYRISTOR MODULE

200A / 800V

P D T 2 0 0 8 P D H 2 0 0 8

FEATURES

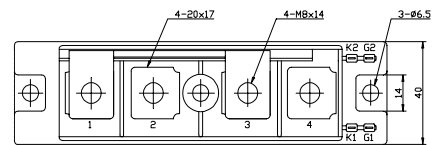
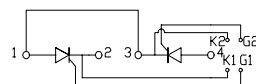
- * Isolated Base
- * Dual Thyristors or Thyristor and Diode Cascaded Circuit
- * High Surge Capability
- * UL Recognized, File No. E187184

TYPICAL APPLICATIONS

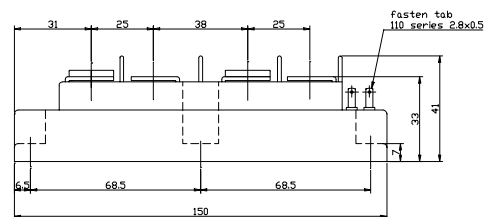
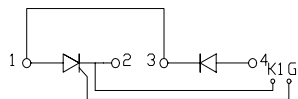
- * AC phase control

OUTLINE DRAWING

PDT



PDH



Maximum Ratings

Approx Net Weight:480g

Parameter	Symbol	Grade	Unit
		PDT/PDH2008	
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 $T_c=65^{\circ}C$	200	A
RMS On-State Current		$I_{T(RMS)}$		314	A
Surge Forward Current		I_{FSM}	50 Hz Half Sine Wave,1cycle Non-Repetitive	4000	A
I Squared t		I^2t	2msec to 10msec	80000	A ² s
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/ 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		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	2000	V
Mounting torque	Case mounting	Ftor	M6 Screw	2.5 to 3.5	N.m
	Terminals		M8 Screw	9.0 to 10.0	

Value per 1 Arm

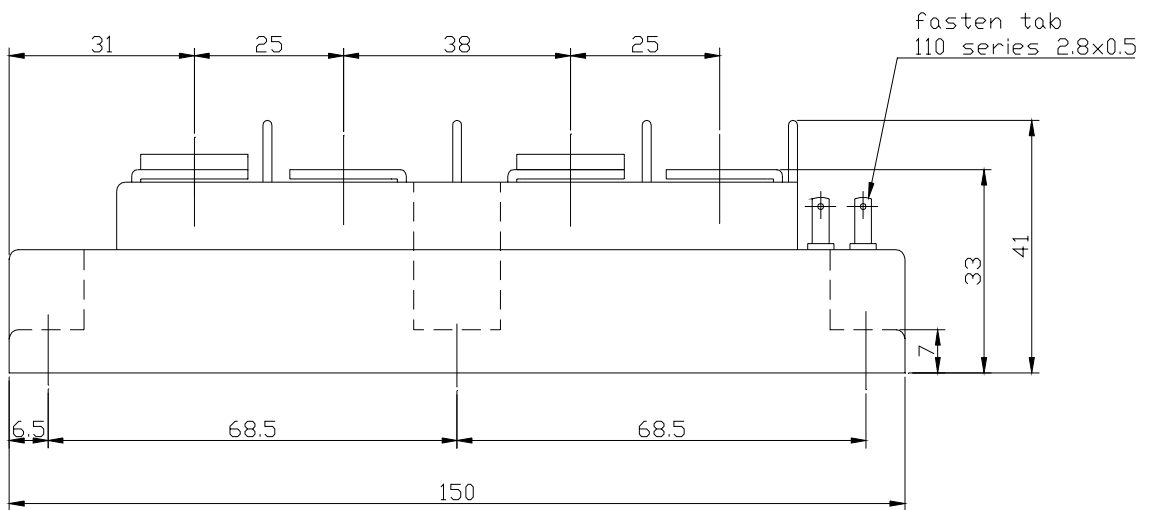
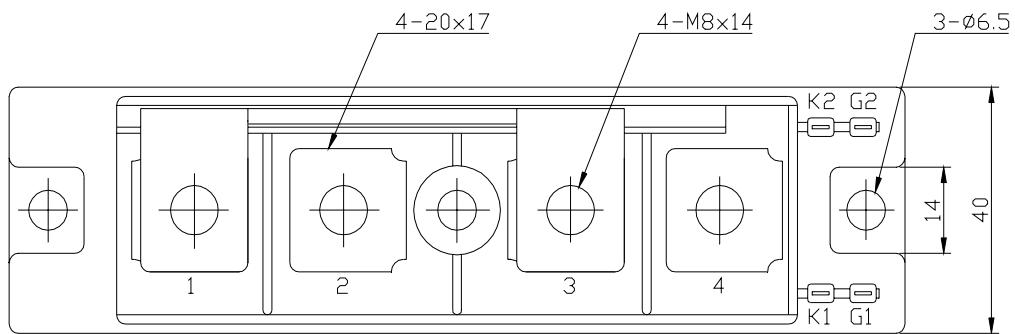
Electrical • Thermal Characteristics

Characteristics	Symbol	Test Conditions	Maximum Value.			Unit
			Min.	Typ.	Max.	
Peak Off-State Current	I_{DM}	$V_{DM} = V_{DRM}$, $T_j = 125^\circ\text{C}$			30	mA
Peak Reverse Current	I_{RM}	$V_{RM} = V_{RRM}$, $T_j = 125^\circ\text{C}$			30	mA
Peak On-State Voltage	V_{TM}	$I_{TM} = 600\text{A}$, $T_j = 25^\circ\text{C}$			1.34	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	$I_{TM} = I_O$, $V_D = 2/3 V_{DRM}$ $dv/dt = 20\text{V}/\mu\text{s}$, $V_R = 100\text{V}$ $-di/dt = 20\text{A}/\mu\text{s}$, $T_j = 125^\circ\text{C}$		100		μs
Turn-On Time	t_{gt}	$T_j = 25^\circ\text{C}$, $I_{TM} = I_{T(RMS)}$		6		μs
Delay Time	t_d	$V_D = 2/3 V_{DRM}$, $I_G = 300\text{mA}$ $di_G/dt = 0.2\text{A}/\mu\text{s}$		2		μs
Rise Time	t_r			4		μs
Latching Current	I_L	$T_j = 25^\circ\text{C}$		100		mA
Holding Current	I_H	$T_j = 25^\circ\text{C}$		60		
Thermal Resistance *1	$R_{th(j-c)}$	Junction to Case			0.23	$^\circ\text{C}/\text{W}$
	$R_{th(c-f)}$	Base Plate to Heat Sink with Thermal Compound			0.1	

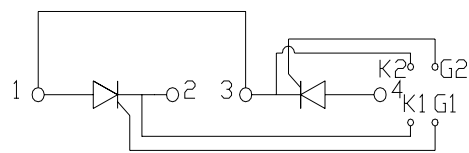
Value Per 1Arm

*1: Value Per Module

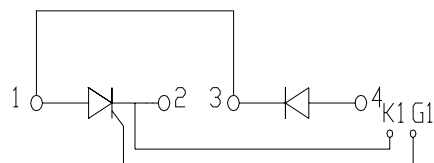
PDT/PDH2008 OUTLINE DRAWING (Dimensions in mm)



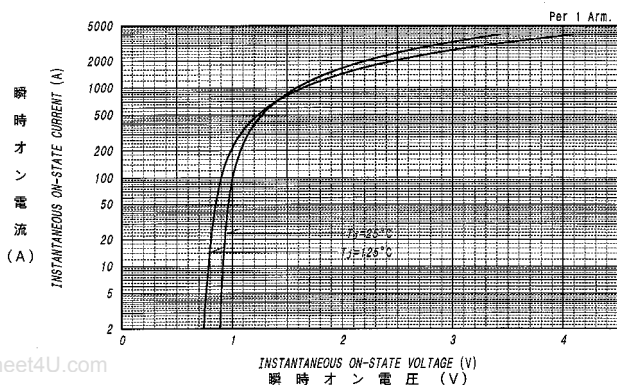
PDT



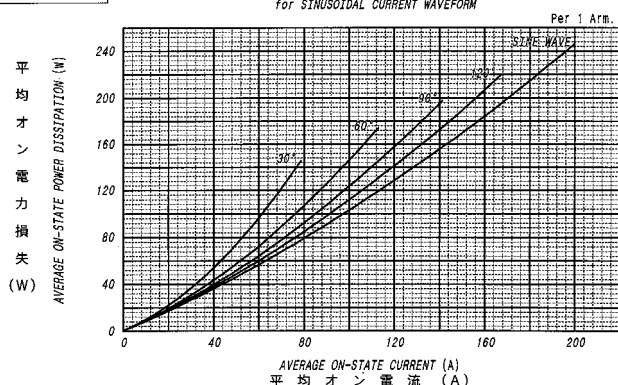
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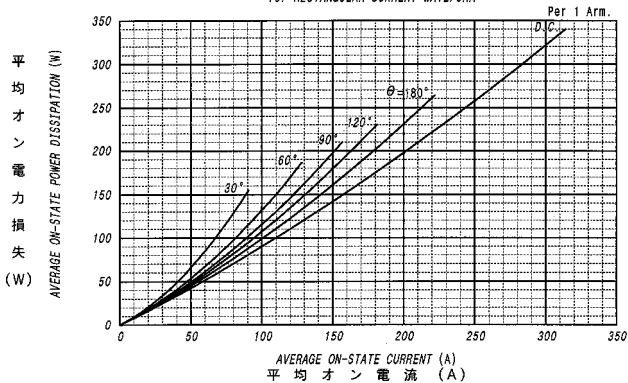
オン電圧特性
ON-STATE CURRENT VS. VOLTAGE



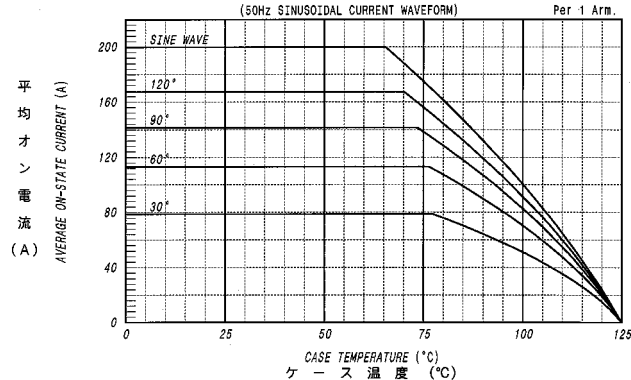
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for SINUSOIDAL CURRENT WAVEFORM



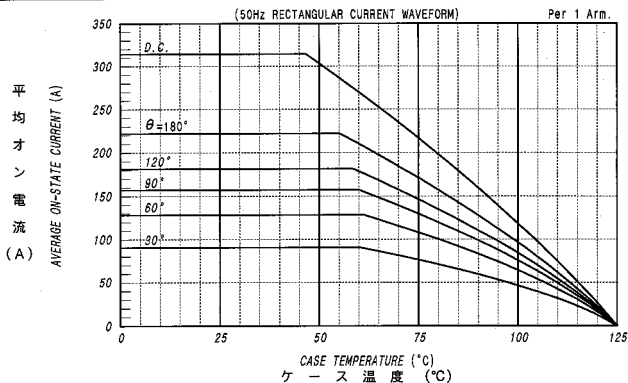
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for RECTANGULAR CURRENT WAVEFORM



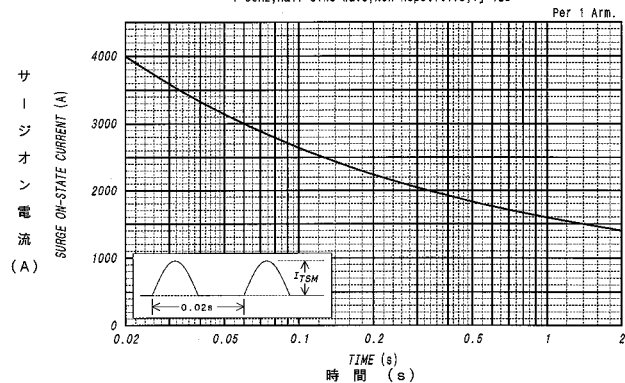
平均オン電流－ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



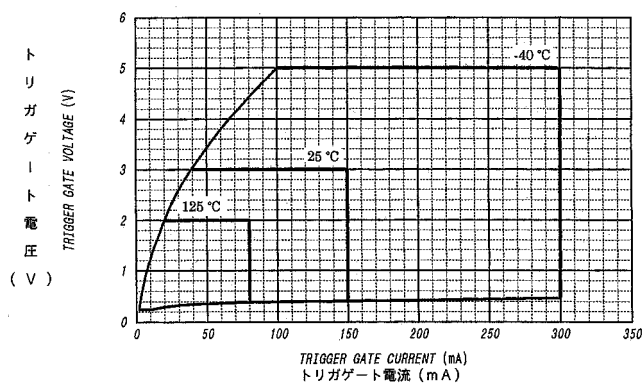
平均オン電流－ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE



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

