

HUTSON INDUSTRIES

TRIAC's



T.25-15

JAN. 1974/HDT

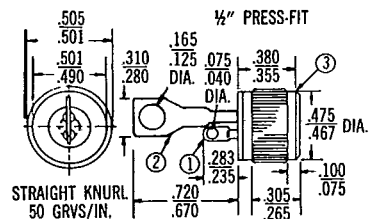
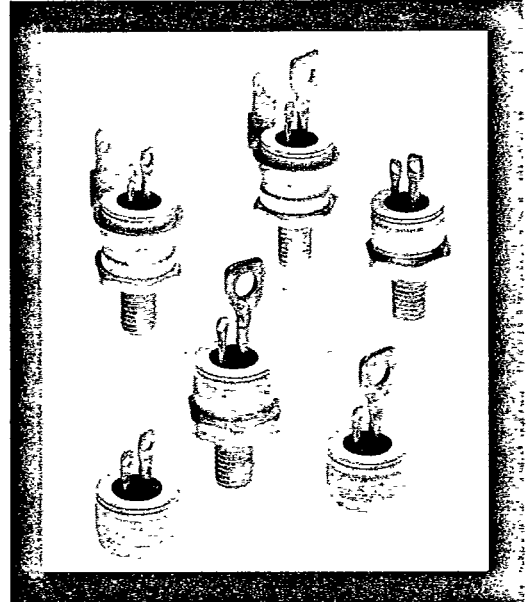
PRESS FIT SERIES TRIACS

- 6 AMPERE CENTER GATE
- 8 AMPERE CENTER GATE
- 10 AMPERE CENTER GATE
- 15 AMPERE CENTER GATE
- 25 AMPERE CENTER GATE

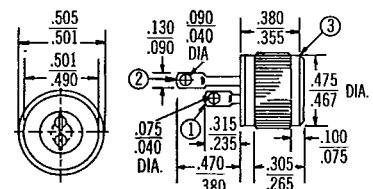
Hutson's medium power triacs are bi-directional triode thyristors which may be switched from off-state to conduction for either polarity of applied voltage with positive or negative gate triggering. They are designed for control of A. C. loads in applications such as lighting, heating, and motor speed control, as well as static switching relays.

These economical and highly reliable triacs are the result of Hutson's advanced engineering and manufacturing technology, state-of-the art glass passivation materials and techniques and experience in switching devices application.

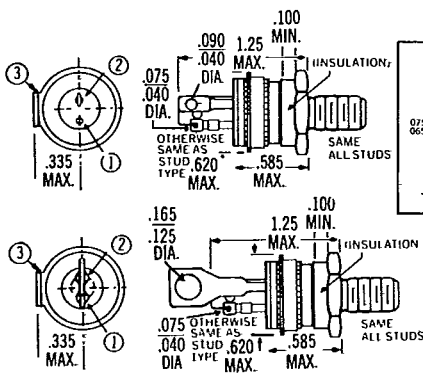
In addition to these center-gate devices, Hutson manufactures a complete line of both triacs and SCR's in standard package configurations, from 3 ampere to 60 ampere ratings, and blocking voltages from 50 volts to 600 volts (800 volts available in some series).



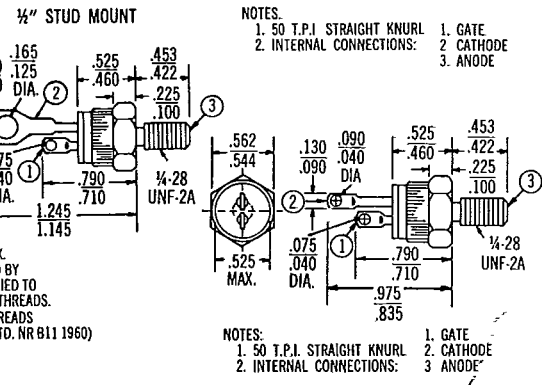
INTERNAL CONNECTIONS
 1 GATE
 2 MAIN TERM. 1
 3 MAIN TERM. 2 (CONNECTED TO CASE)



NOTES:
 1. 50 T.P.I. STRAIGHT KNURL
 2. INTERNAL CONNECTIONS:
 1. GATE
 2. CATHODE
 3. ANODE



1. PARTIAL THREADS 0.909 MAX.
2. UNITS SHALL NOT BE DAMAGED BY 30 INCH POUNDS TORQUE APPLIED TO CLASS 28 NUT ASSEMBLED ON THREADS.
3. MAX. PITCH DIA. OF PLATED THREADS SHALL BE (0.2268) (REF. ASA STD. NR B11 1960)
4. INTERNAL CONNECTIONS:
 1. GATE
 2. MAIN TERM. 1
 3. MAIN TERM. 2. (CONNECTED TO CASE)



NOTES:
 1. 50 T.P.I. STRAIGHT KNURL
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The packages with the main terminal =1 having a hole diameter of 0.125" to 0.165" are available only in 25 ampere rated devices.

ALL DIMENSIONS IN INCHES

PFST-00006-1X HUTSON INDUSTRIES

P. O. BOX 34235 • 2019 W. VALLEY VIEW LANE DALLAS, TEXAS 75234 (214) 241-3511 TWX .910-860-5537

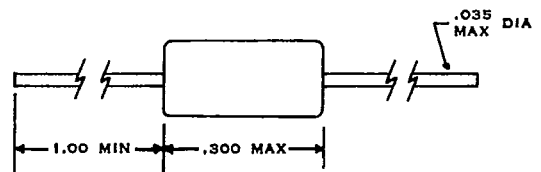


	SYMBOL	V _{DROM}	HUTSON	HUTSON	
			6 AMP DEVICE NUMBER (1)	8 AMP DEVICE NUMBER (1)	
MAXIMUM RATINGS	Repetitive Peak Off-State Voltage, Gate Open and T _j = 100°C	V _{DROM}	50 100 200 300 400 500 600	T06 T16 T26 T36 T46 T56 T66	T08 T18 T28 T38 T48 T58 T68
	RMS On-State Current at T _c = 75°C and Conduction Angle of 360°	I _{TRMS}		6	8
	Peak Surge (Non-Repetitive) On-State Current, One-Cycle at, at 50 Hz or 60 Hz	I _{TSM}		80	100
	Peak Gate-Trigger Current for 3 μsec. Max.	I _{GTM}		1	1
	Peak Gate-Power Dissipation at I _{GT} < I _{GTM} for 3 μsec. Max.	P _{GM}		20	20
	Average Gate-Power Dissipation	P _{G(AV)}		0.2	0.2
	Storage Temperature Range	T _{stg}		-40 to +150	-40 to +150
	Operating Temperature Range T _c	T _{OPER}		-40 to +100	-40 to +100
ELECTRICAL CHARACTERISTICS At Maximum Ratings and Indicated Case Temperatures (unless otherwise specified)	Peak Off-State Current, Gate Open, T _j = 100°C V _{DROM} = Max. Rating	I _{DROM}		2 Max.	2 Max.
	Maximum On-State Voltage at T _c = 25°C	V _{TM}		2.2 Max.	2.2 Max.
	Peak On-State Current			10	12
	DC Holding Current, Gate Open and T _c = 25°C	I _{HO}		50 Max.	50 Max.
	Critical Rate-of-Rise of Off-State Voltage, Gate Open and T _c = 100°C, V _D = V _{DROM}	static dv/dt		30 Typ.	30 Typ.
	Critical Rate-of-Rise of Commutation for V _D = V _{DROM} , Gate Open, T _c = 75°C, t _t = I _{TRMS}	Commutating dv/dt		5 Typ.	5 Typ.
	DC Gate-Trigger Current for: V _D = 24 VDC R _L = 12Ω and at T _c = 25°C (T ₂ +, Gate+; T ₂ -, Gate-) Quads I-III (T ₂ +, Gate-; T ₂ -, Gate+) Quads II-IV	I _{GT}		50 Max. 80 Max.	50 Max. 80 Max.
	DC Gate-Trigger Voltage for: V _D = 24 VDC, R _L = 12Ω and T _c = 25°C	V _{GT}		2.5 Max.	2.5 Max.
Gate-Controlled Turn-on Time: V _D = V _{DROM} , I _{GT} = 300 mA, t _r = 0.1 μsec. I _r = 10A(peak), T _c = 25°C	T _{gt}		2.5 Typ.	2.5 Typ.	
Thermal Resistance, Junction to Case	R _{θjc}		2.5 Typ.	2.5 Typ.	

ALL VALUES APPLY IN EITHER DIRECTION

HUTSON INDUSTRIES DIAC D-30

Hutson's D-30 is a bi-directional trigger diode designed to operate in conjunction with all of Hutson Industries' Triacs and SCR's.
 Storage Temperature T_{stg} -40°C to +150°C
 Operating Temperature T_j -40°C to +100°C
MAXIMUM RATINGS AT 50°C Ambient
 Peak Current (10 μsec duration, 120 cycle repetition rate) .. I_p ± 2 Amperes Max.

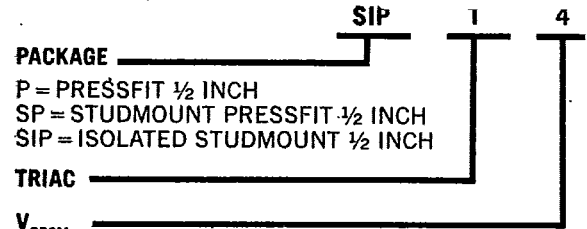


PFS T-00006-2X

CHARACTERISTICS at 25°C Ambient

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Breakover Voltage	V(BR) ₁ and V(BR) ₂	28	32	36	Volts
Breakover Currents	I(BR) ₁ and I(BR) ₂	—	—	200	μamp
Breakover Voltage Symmetry	[V(BR) ₁] - [V(BR) ₂]	—	—	3.8	Volts

HUTSON 10 AMP DEVICE NUMBER (1)	HUTSON 15 AMP DEVICE NUMBER (1)	HUTSON 25 AMP DEVICE NUMBER (1)	UNIT
T010 T110 T210 T310 T410 T510 T610	T015 T115 T215 T315 T415 T515 T615	T025 T125 T225 T325 T425 T525 T625	VOLT
10	15	25	AMP
100	120	250	AMP
2	4	4	AMP
20	40	40	WATT
0.5	0.8	0.8	WATT
-40 to +150	-40 to +150	-40 to +150	°C
-40 to +100	-40 to +100	-40 to +100	°C
2 Max.	2 Max.	4 Max.	mA
2.2 Max.	2.2 Max.	2.5 Max.	VOLT
14	21	100	AMP
50 Max.	60 Max.	60 Max.	mA
40 Typ.	40 Typ.	40 Typ.	V/μsec.
5 Typ.	3 Typ.	3 Typ.	V/μsec.
50 Max. 80 Max.	50 Max. 80 Max.	100 Max. 150 Max.	mA
2.5 Max.	2.5 Max.	2.5 Max.	VOLT
3 Typ.	3 Typ.	3 Typ.	μsec.
2.0 Typ.	1.8 Typ.	1.8 Typ.	°C/W



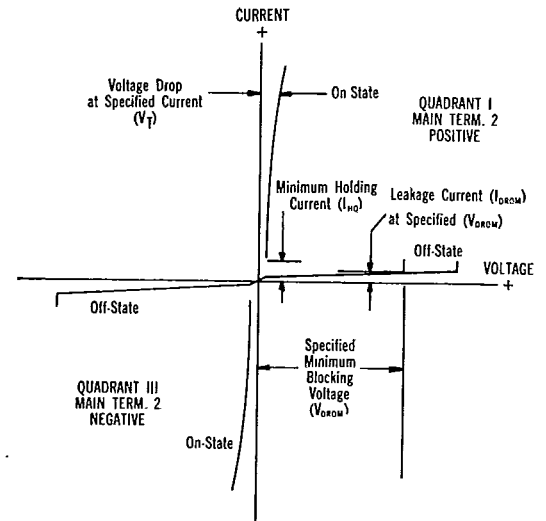
V_{DRM}

0 = 500 VOLTS
 1 = 100 VOLTS
 2 = 200 VOLTS
 3 = 300 VOLTS
 4 = 400 VOLTS
 5 = 500 VOLTS
 6 = 600 VOLTS

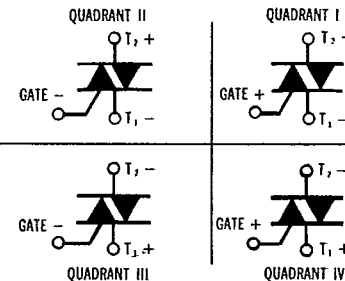
I_{T(RMS)}

6 = 6 AMPERE
 8 = 8 AMPERE
 10 = 10 AMPERE
 15 = 15 AMPERE
 25 = 25 AMPERE

TYPICAL VOLTAGE-CURRENT CHARACTERISTICS



DEFINITION OF QUADRANTS



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EXAMPLE DEVICE NUMBER WOULD BE AN ISOLATED 1/2 INCH STUDMOUNT, 400 VOLT, 25 AMPERE TRIAC WITH $I_{GT} = 100$ ma MAXIMUM IN QUADRANTS I & III AND QUADRANTS II & IV NOT SPECIFIED.

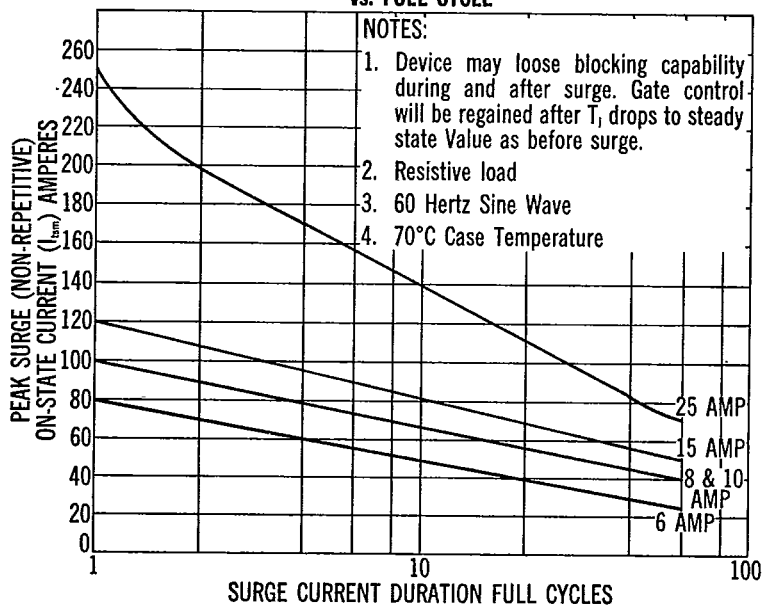
I _{GT} CHARACTERISTICS	QUADRANT					UNIT
		I	III	II	IV	
NO SUFFIX	AS SPECIFIED IN DATA SHEET					ma
A		50	50	-	-	ma
B		100	100	-	-	ma
C		150	150	-	-	ma
AB		50	50	80	80	ma
HA*		25	-25	-	-	ma
HX*		25	25	40	40	ma

*NOT AVAILABLE IN 25 AMPERE DEVICES.

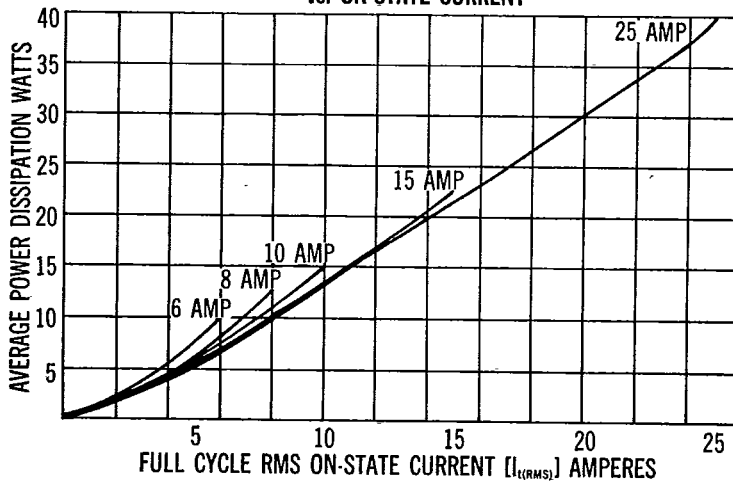
(1) Refer to Device Package for Parts

PRESS FIT
STUDMOUNTED
PRESS FIT
ISOLATED
STUDMOUNTED
PRESS FIT

PEAK CURRENT SURGE vs. FULL CYCLE



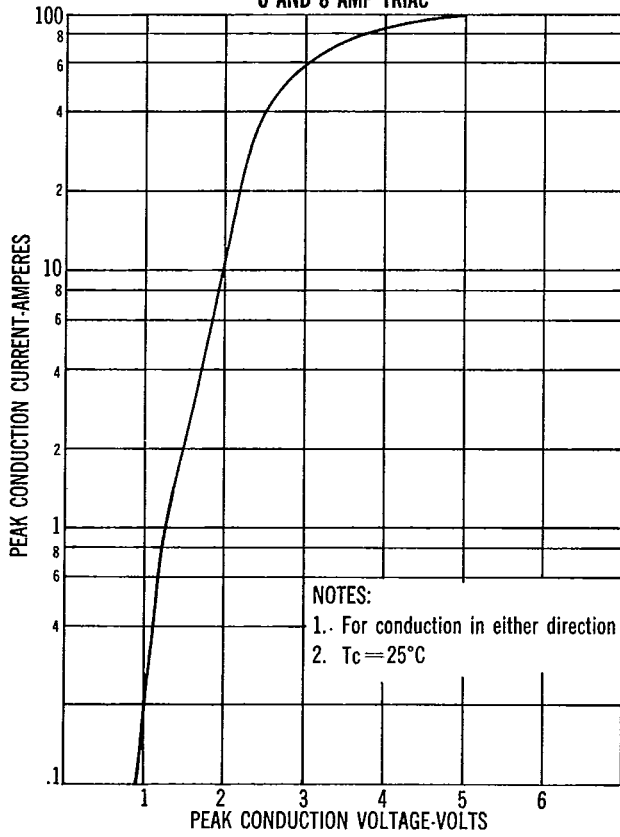
MAXIMUM POWER DISSIPATION vs. ON-STATE CURRENT



PFST-00006-4X

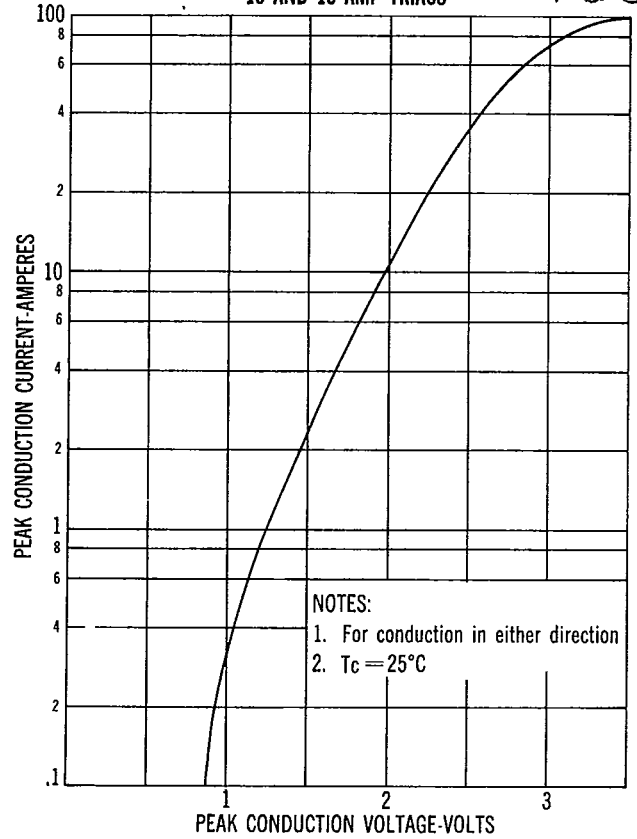
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MAXIMUM CONDUCTION CHARACTERISTICS
6 AND 8 AMP TRIAC

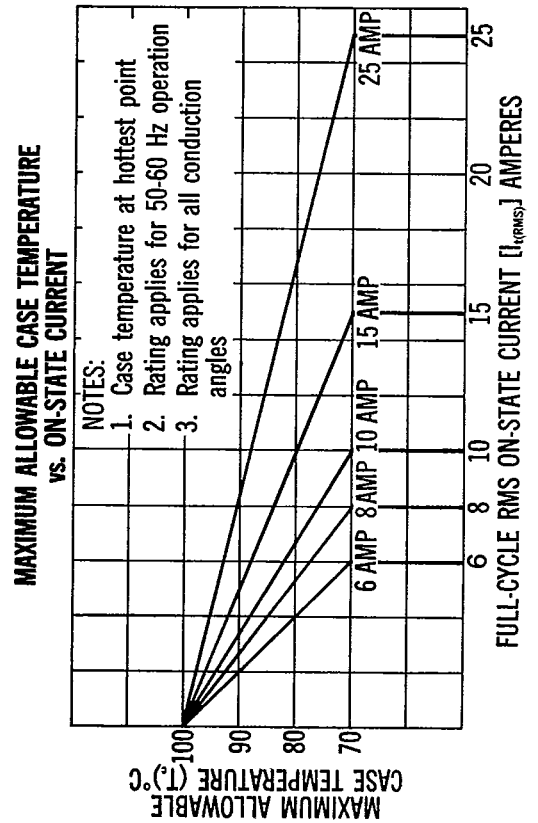
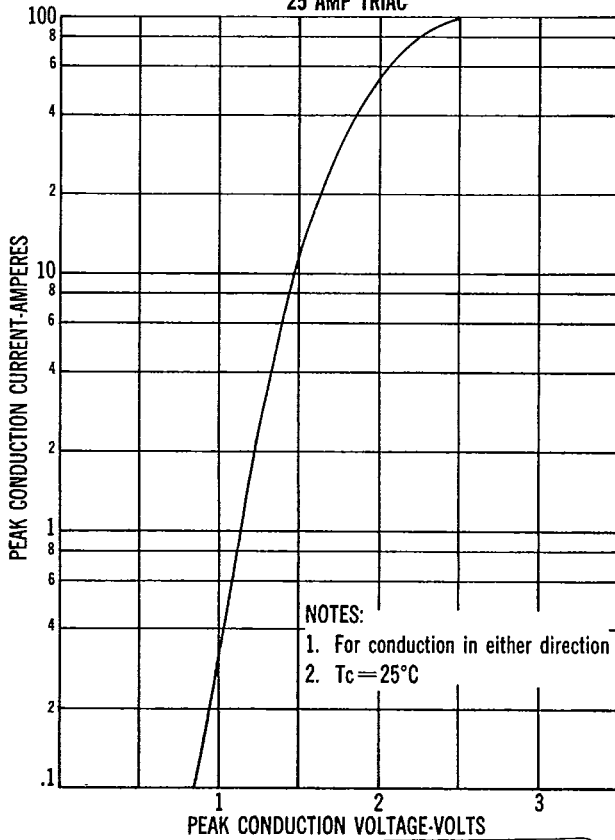


MAXIMUM CONDUCTION CHARACTERISTICS
10 AND 15 AMP TRIACS

T-25-11

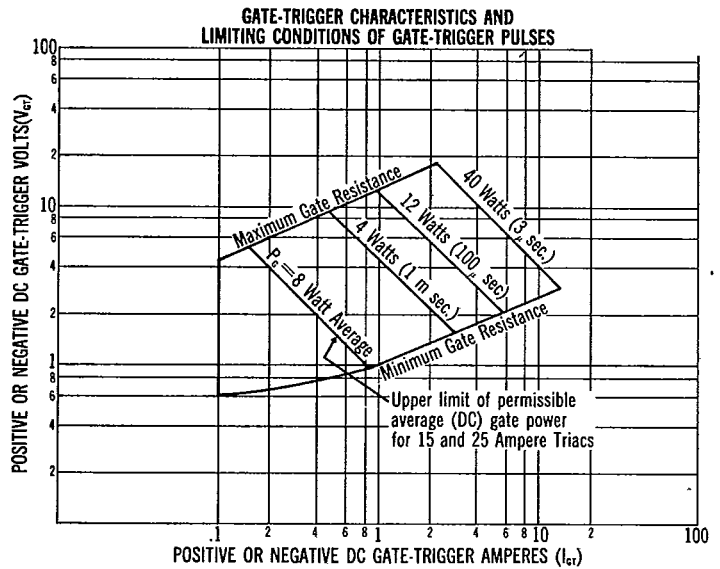
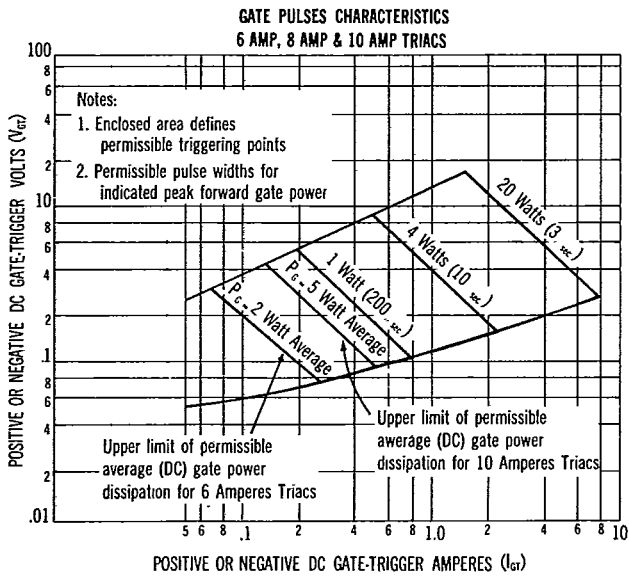


MAXIMUM CONDUCTION CHARACTERISTICS
25 AMP TRIAC



PFS-00006-5X

5



**INSTALLATION INSTRUCTIONS
1/2" PRESS FIT TRIACS**

1. Recommended Heat Sink material: Copper (recommended for maximum heat transfer and minimum corrosion problem), aluminum or steel.
2. Heat sink should be 1/8" thick minimum.
3. The hole diameter into which the Triac is pressed must be $0.4975 \pm .001$ inch. A slight chamfer on the hole should be used. This hole may be punched and reamed in a flat plate or extruded and sized in sheet metal.
4. The entire knurled section of the Triac should be in contact with the heat sink to insure maximum heat transfer. The Triac must not be inserted into a heat sink deeper than the knurl height.
5. The Triac insertion force must not exceed 800 pounds. If the insertion force approaches that value either the Triac is misaligned with the hole or the Triac-to-hole interference is excessive. The insertion force must be uniformly applied to the top face (terminal end) of the Triac within an annular ring which has an inside diameter not less than 0.370 inch and not larger than 0.390 inch; the outside diameter must not be less than 0.500 inch.
6. The thermal resistance between the Triac case and a copper heat sink should not exceed 0.5°C/W if the Triac is inserted in the manner described above.

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6