

# HUTSON INDUSTRIES

# TRIAC's



## ISOTAB\* TRIACS ELECTRICALLY ISOLATED

TO-220

8 AMPERE  
10 AMPERE  
15 AMPERE

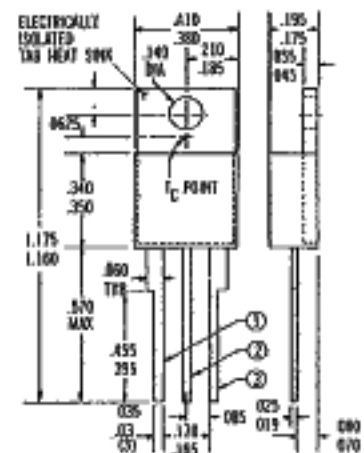


Hutson ISOTAB\*-packaged triacs featuring an improved electrical isolation technique, will withstand a minimum of 1600 VAC from leads to tab for one minute at 80°C case temperature. Hermetically sealed within this package is a dense, void-free-glass passivated, hermetically-sealed chip. ISOTAB triacs have a low thermal impedance and are available in wide range of current and voltage ratings, from 8 to 15 Amperes and 50 to 600 Volts. The 15 Amp versions feature Beryllium Oxide isolation for further improved thermal characteristics.

These economical, highly reliable triacs are the result of Hutson's advanced engineering and manufacturing technology, and experience in switching-device applications.

These Hutson triacs are bi-directional triode thyristors and 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 AC loads in applications such as lighting, heating, and motor speed controls, and static switching relays.

In addition to these plastic packaged triacs, Hutson offers other package configurations in current ratings to 60 Amperes and Voltage ( $V_{DRM}$ ) ratings to 1000V. All Hutson triacs are available in chip form. For additional information, please consult Hutson Industries.



INTERNAL CONNECTIONS:  
TRIAC: 1. 100V 1.0A  
2. 100V 1.0A  
3. GATE

TO-220  
ELECTRICALLY ISOLATED  
ISOTAB

REGISTERED TRADEMARK OF HUTSON INDUSTRIES

ALL DIMENSIONS IN INCHES

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# HUTSON INDUSTRIES

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



ISOT 00008-1X

APRIL 1977

	SYMBOL	V <sub>DROM</sub>	DEVICE NOS. (NOTE 1)			UNITS	
			08	010	015		
MAXIMUM RATINGS	Repetitive Peak Off-State Voltage, Gate Open, and T <sub>J</sub> = 100°C	V <sub>DROM</sub>	50 100 200 300 400 500 600	08 18 28 38 48 58 68	010 110 210 310 410 510 610	015 115 215 315 415 515 615	VOLT
	RMS On-State Current at T <sub>C</sub> = 75°C and Conduction Angle of 180°	I <sub>RMSI</sub>		8	10	15	AMP
	Peak Surge (Non-Repetitive) On-State Current, One-Cycle, at 50Hz or 60Hz	I <sub>TSM</sub>		100	100	150	AMP
	Peak Gate-Trigger Current for 3μsec, Max.	I <sub>GT</sub>		3	4	4	AMP
	Peak Gate-Power Dissipation at I <sub>GT</sub> ≤ I <sub>GT</sub> for 3μsec, Max.	P <sub>GM</sub>		20	40	40	WATT
	Average Gate-Power Dissipation	P <sub>GLAVI</sub>		0.2	0.5	0.8	WATT
	Storage Temperature Range	T <sub>stg</sub>		← -40 to +150 →			°C
	Operating Temperature Range, T <sub>C</sub>	T <sub>oper.</sub>		← -40 to +100 →			°C
ELECTRICAL CHARACTERISTICS At Maximum Ratings and at Specific Case Temperatures	Peak Off-State Current, Gate Open, T <sub>J</sub> = 100°C V <sub>DROM</sub> = Max. Rating	I <sub>DROM</sub>		2.0 MAX	2.0 MAX	2.0 MAX	mA
	Maximum On-State Voltage at T <sub>C</sub> = 25°C (Peak)	V <sub>F</sub>		2.2 MAX	2.2 MAX	2.2 MAX	VOLTS
			Peak On-State Current	11	14	21	AMP
	DC Holding Current, Gate Open and T <sub>C</sub> = 25°C	I <sub>HO</sub>		50 MAX	50 MAX	50 MAX	mA
	Critical Rate-of-Rise of Off-State Voltage for V <sub>D</sub> = V <sub>DROM</sub> , Gate Open, T <sub>C</sub> = 100°C	Critical dv/dt		5 TYP	5 TYP	5 TYP	V/μsec
	DC Gate-Trigger Current for V <sub>D</sub> = 12VDC, R <sub>L</sub> = 30Ω and at T <sub>C</sub> = 25°C (T <sub>2</sub> +Gate+, T <sub>2</sub> -Gate-) Quads I and III (T <sub>2</sub> +Gate-, T <sub>2</sub> -Gate+) Quads II and IV (Note 2)	I <sub>GT</sub>		50 MAX 80 MAX	50 MAX 80 MAX	50 MAX 80 MAX	mA mA
			DC Gate-Trigger Voltage for V <sub>D</sub> = 12VDC, R <sub>L</sub> = 30Ω and at T <sub>C</sub> = 25°C	V <sub>GT</sub>		2.5 MAX	2.5 MAX
	Gate-Controlled Turn-on Time for V <sub>D</sub> = V <sub>DROM</sub> , I <sub>GT</sub> = 80mA, t <sub>r</sub> = 0.1μsec., I <sub>T</sub> = 10A (Peak) and T <sub>C</sub> = 25°C	t <sub>GT</sub>		2.5 TYP	2.5 TYP	2.5 TYP	μsec
Thermal Resistance, Junction-to-Case	R <sub>θJC</sub>		2.5 TYP	2.5 TYP	*1.5 TYP	°C/W	

ALL VALUES APPLY IN EITHER DIRECTION

\*BeO Substrate

ISφTT 00008-2X

# ISOTAB (ELECTRICALLY ISOLATED) TRIACS

## DEVICE NO. DESIGNATION

NOTE 1: I = ELECTRICALLY ISOLATED

T = TRIAC

0 to 6 = 50 to 600 V ( $V_{BOSSU}$ ) RATING  
 8, 10, 15 = 8A, 10A & 15A ( $I_{T(RMS)}$ )

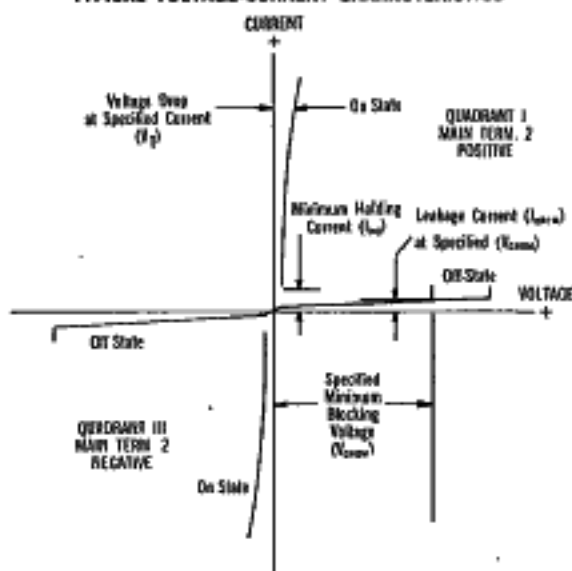
NOTE 2: For CHARACTERISTICS:

NO SUFFIX = 50 mA, I & III QUADS;  
 80 mA, II & IV QUADS;  
 A = 50 mA I & III QUADS ONLY  
 B = 100 mA I & III QUADS ONLY  
 HA = 25 mA I & III QUADS ONLY  
 HX = 25 mA I & III QUADS 40 mA, QUADS II & IV

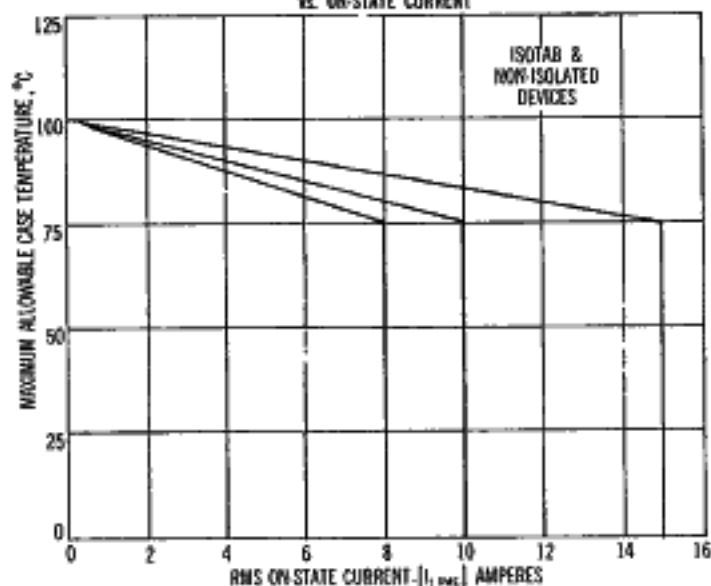
EXAMPLE  
 I T 4 8 A

Example Device No.  
 would be:  
 an Electrically  
 isolated Triac,  
 400 V ( $V_{BOSSU}$ ),  
 8A ( $I_{T(RMS)}$ ) with  
 50 mA ( $I_{GT}$ )  
 Quads I & III

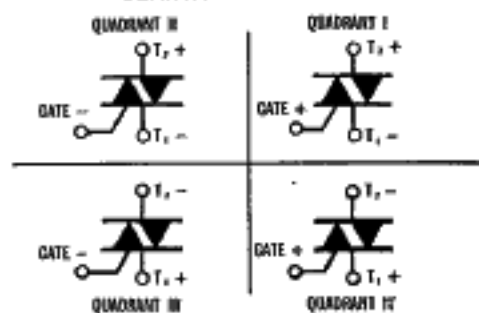
TYPICAL VOLTAGE-CURRENT CHARACTERISTICS



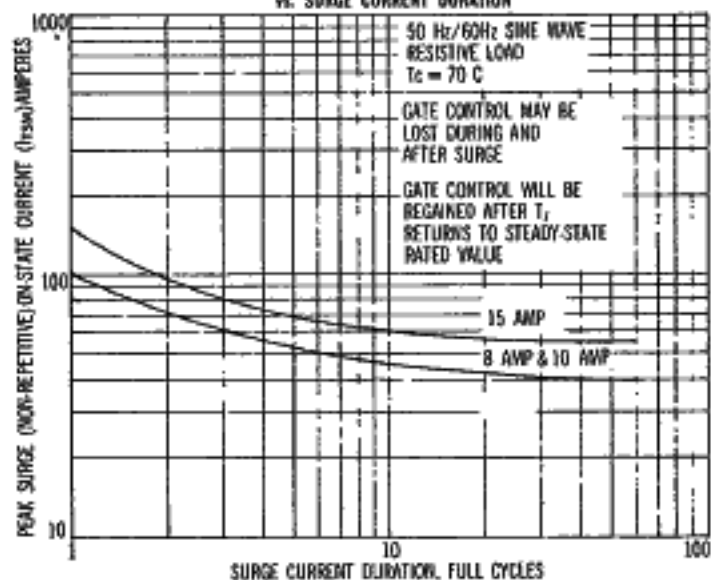
MAXIMUM ALLOWABLE CASE TEMPERATURE vs. ON-STATE CURRENT



DEFINITION OF QUADRANTS



PEAK SURGE ON-STATE CURRENT vs. SURGE CURRENT DURATION

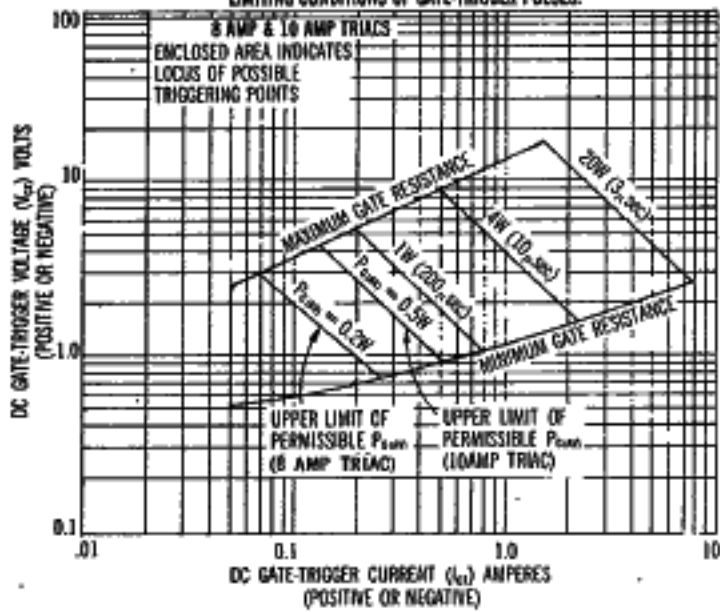


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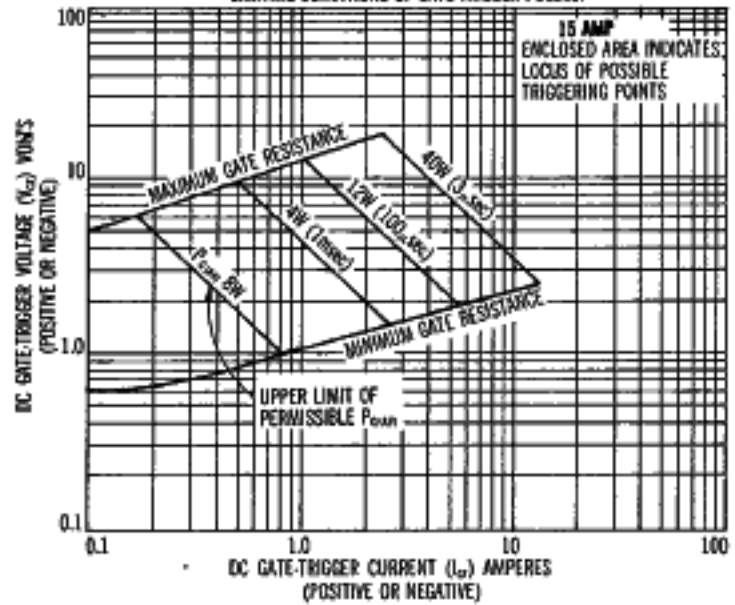
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# HUTSON INDUSTRIES 8A, 10A, 15A ISOTAB (ELECTRICALLY ISOLATED) TRIACS

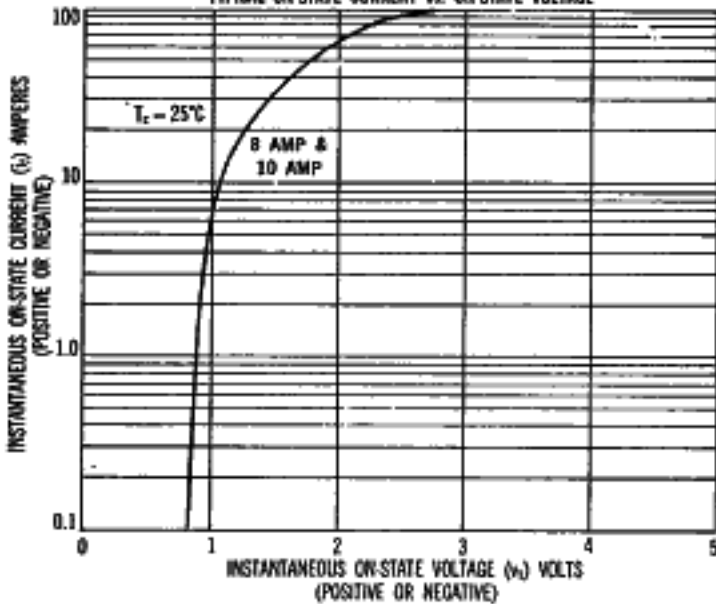
GATE-TRIGGER CHARACTERISTICS AND LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



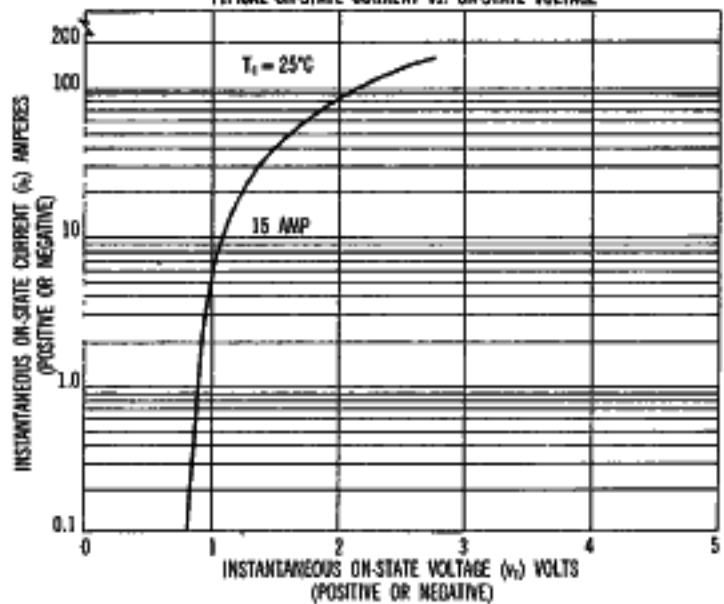
GATE-TRIGGER CHARACTERISTICS AND LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



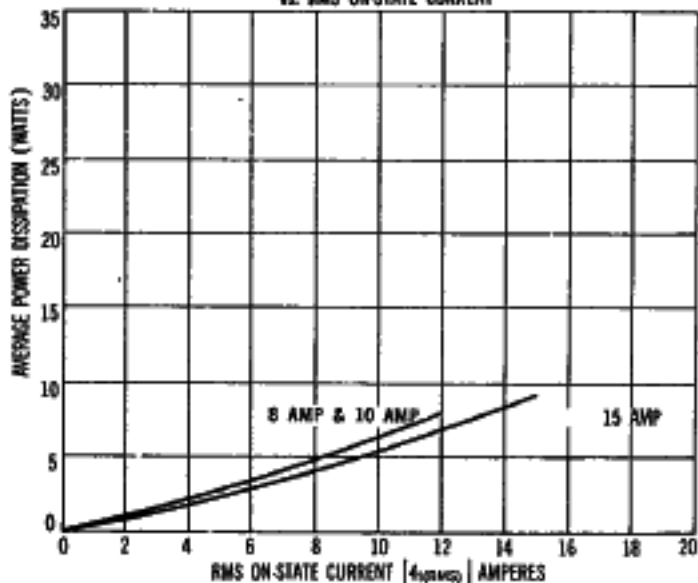
TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL AVERAGE POWER DISSIPATION vs. RMS ON-STATE CURRENT



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