



## ISOTAB\* TRIACS ELECTRICALLY ISOLATED

TO-220

8 AMPERE  
10 AMPERE  
15 AMPERE

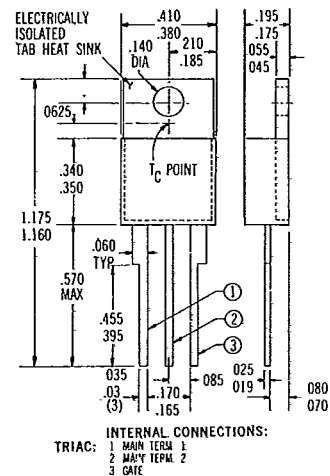


Hutson ISOTAB\*-packaged triacs featuring an improved electrical isolation technique, will withstand a minimum of 1600 VAC from leads to tab for one minute at 80°C case temperature. Hermetically sealed within this package is a dense, void-free-glass passivated, hermetically-sealed chip. ISOTAB triacs 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.



TO-220  
ELECTRICALLY ISOLATED  
ISOTAB

REGISTERED TRADEMARK OF HUTSON INDUSTRIES

ALL DIMENSIONS IN INCHES

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**MAXIMUM RATINGS**

**ELECTRICAL CHARACTERISTICS**  
At Maximum Ratings and at Specific J Case Temperatures

	SYMBOL	V <sub>DROM</sub>	DEVICE NOS. (NOTE 1)			UNITS	
MAXIMUM RATINGS	Repetitive Peak Off-State Voltage, Gate Open, and T <sub>J</sub> = 100°C	V <sub>DROM</sub>	50	08	010	015	VOLT
			100	18	110	115	
			200	28	210	215	
			300	38	310	315	
			400	48	410	415	
			500	58	510	515	
			600	68	610	615	
	RMS On-State Current at T <sub>C</sub> = 75°C and Conduction Angle of 180°	I <sub>HRMS</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>ETM</sub>		3	4	4	AMP
Peak Gate-Power Dissipation at I <sub>ET</sub> ≤ I <sub>ETM</sub> for 3μsec, Max.	P <sub>GM</sub>		20	40	40	WATT	
Average Gate-Power Dissipation	P <sub>GIAVI</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	
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>ET</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>ET</sub>		2.5 MAX	2.5 MAX	2.5 MAX	VOLTS	
Gate-Controlled Turn-on Time for V <sub>D</sub> = V <sub>DROM</sub> , I <sub>ET</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	

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ALL VALUES APPLY IN EITHER DIRECTION

\*BeO Substrate

# ISOTAB (ELECTRICALLY ISOLATED) TRIACS

DEVICE NO. DESIGNATION

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EXAMPLE

I T 4 8 A

NOTE 1: I = ELECTRICALLY ISOLATED

T = TRIAC

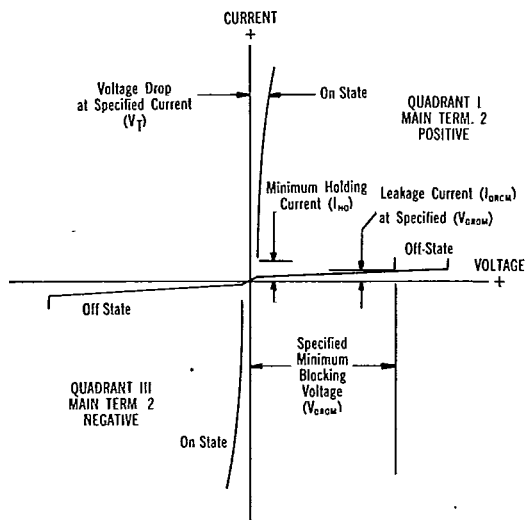
0 to 6 = 50 to 600 V ( $V_{DRM}$ ) RATING  
 8, 10, 15 = 8A, 10A & 15A  $I_{T(RMS)}$

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

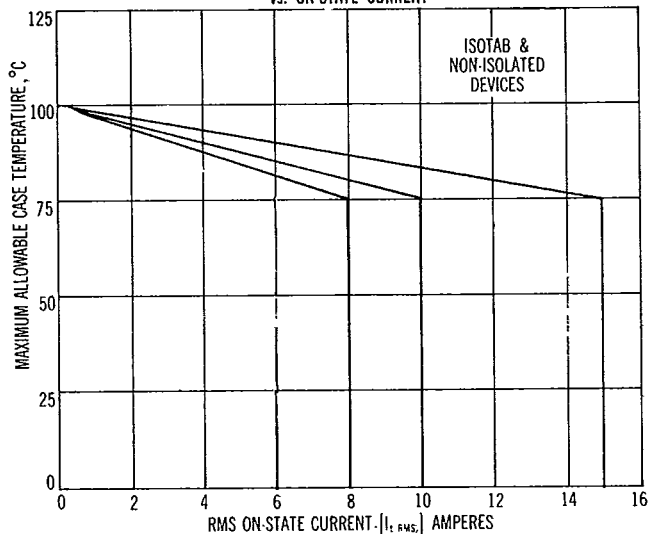
NOTE 2:  $I_{GT}$  CHARACTERISTICS:

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

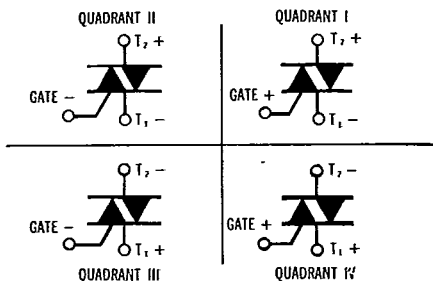
### TYPICAL VOLTAGE-CURRENT CHARACTERISTICS



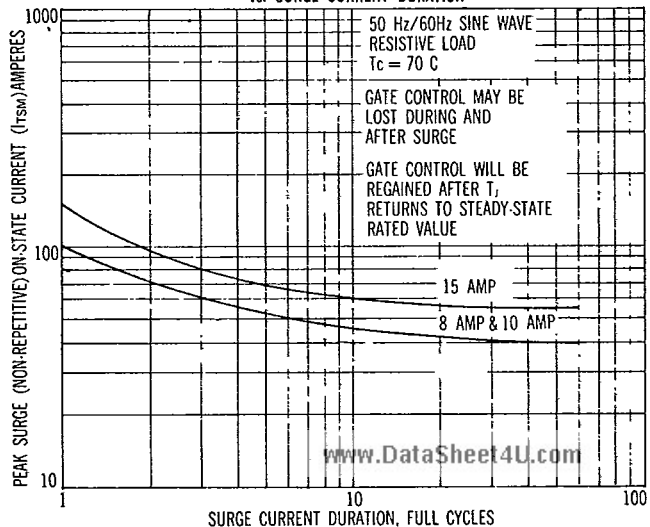
### MAXIMUM ALLOWABLE CASE TEMPERATURE vs. ON-STATE CURRENT



### DEFINITION OF QUADRANTS



### PEAK SURGE ON-STATE CURRENT vs. SURGE CURRENT DURATION



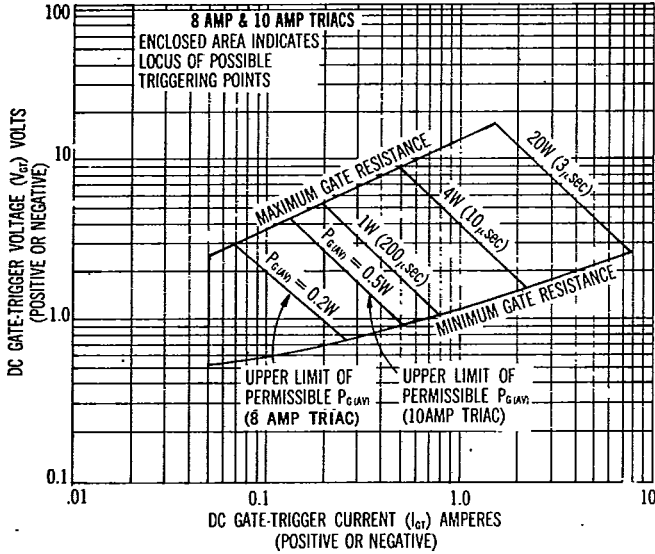
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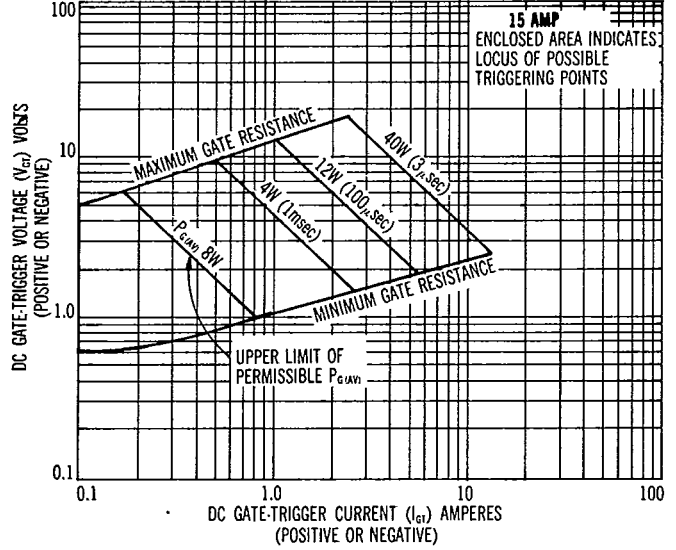
# HUTSON INDUSTRIES 8A, 10A, 15A ISOTAB (ELECTRICALLY ISOLATED) TRIACS

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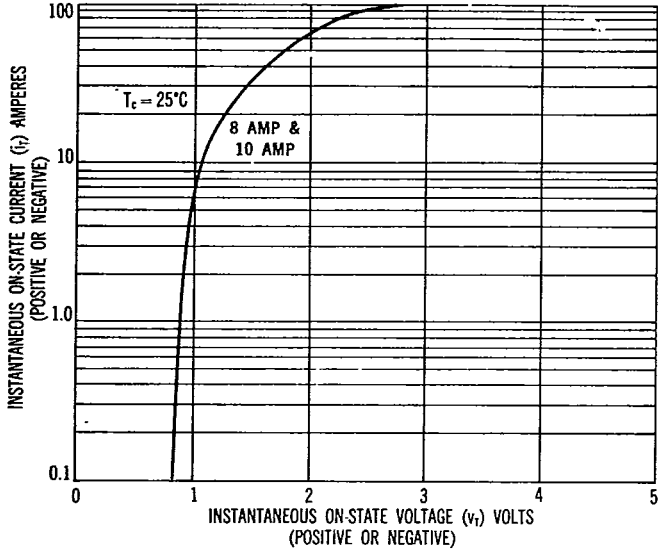
GATE-TRIGGER CHARACTERISTICS AND  
LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



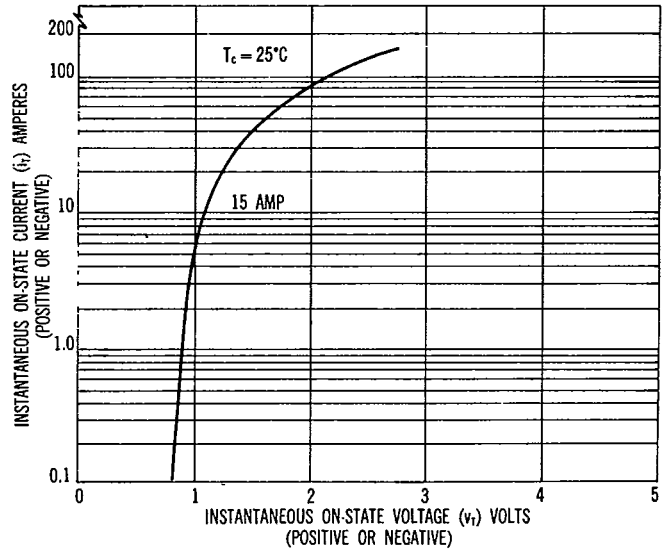
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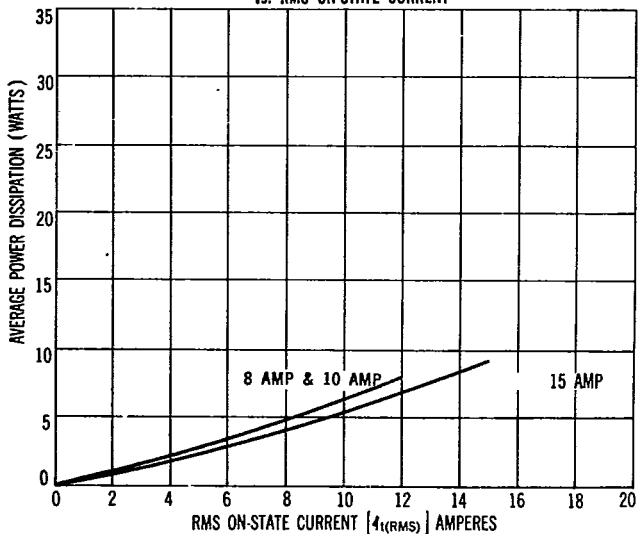
TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL AVERAGE POWER DISSIPATION  
vs. RMS ON-STATE CURRENT



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