

HUTSON INDUSTRIES

TRIAC's



ISOTAB* TRIACS ELECTRICALLY ISOLATED

TO-220

8 AMPERE
10 AMPERE
15 AMPERE

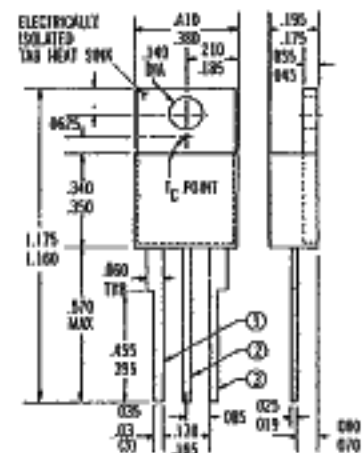


Hutson ISOTAB*-packaged triacs featuring an improved electrical isolation technique, will withstand a minimum of 1600 VAC from leads to tab for one minute at 80°C case temperature. Hermetically sealed within this package is a dense, void-free-glass passivated, hermetically-sealed chip. ISOTAB triacs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



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_{DROM}	DEVICE NOS. (NOTE 1)			UNITS
MAXIMUM RATINGS	Repetitive Peak Off-State Voltage, Gate Open, and $T_J = 100^\circ\text{C}$	V_{DROM}	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 $T_C = 75^\circ\text{C}$ and Conduction Angle of 180°	I_{RMS}		8	10	15	AMP
Peak Surge (Non-Repetitive) On-State Current, One-Cycle, at 50Hz or 60Hz	I_{TSM}		100	100	150	AMP	
Peak Gate-Trigger Current for $3\mu\text{sec}$, Max.	I_{GTM}		3	4	4	AMP	
Peak Gate-Power Dissipation at $I_{GT} \leq I_{GTM}$ for $3\mu\text{sec}$, Max.	P_{GM}		20	40	40	WATT	
Average Gate-Power Dissipation	$P_{G(AV)}$		0.2	0.5	0.8	WATT	
Storage Temperature Range	T_{stg}		← -40 to +150 →			$^\circ\text{C}$	
Operating Temperature Range, T_C	$T_{oper.}$		← -40 to +100 →			$^\circ\text{C}$	
ELECTRICAL CHARACTERISTICS At Maximum Ratings and at Specific Case Temperatures	Peak Off-State Current, Gate Open, $T_J = 100^\circ\text{C}$ $V_{DROM} = \text{Max. Rating}$	I_{DROM}		2.0 MAX	2.0 MAX	2.0 MAX	mA
	Maximum On-State Voltage at $T_C = 25^\circ\text{C}$ (Peak)	V_F		2.2 MAX	2.2 MAX	2.2 MAX	VOLTS
				Peak On-State Current			
	DC Holding Current, Gate Open and $T_C = 25^\circ\text{C}$	I_{HO}		50 MAX	50 MAX	50 MAX	mA
	Critical Rate-of-Rise of Off-State Voltage for $V_D = V_{DROM}$, Gate Open, $T_C = 100^\circ\text{C}$	Critical dv/dt		5 TYP	5 TYP	5 TYP	V/ μsec
	DC Gate-Trigger Current for $V_D = 12\text{VDC}$, $R_L = 30\Omega$ and at $T_C = 25^\circ\text{C}$ ($T_2 + \text{Gate} +$, $T_2 - \text{Gate} -$) Quads I and III ($T_2 + \text{Gate} -$, $T_2 - \text{Gate} +$) Quads II and IV (Note 2)	I_{GT}		50 MAX 80 MAX	50 MAX 80 MAX	50 MAX 80 MAX	mA mA
	DC Gate-Trigger Voltage for $V_D = 12\text{VDC}$, $R_L = 30\Omega$ and at $T_C = 25^\circ\text{C}$	V_{GT}		2.5 MAX	2.5 MAX	2.5 MAX	VOLTS
	Gate-Controlled Turn-on Time for $V_D = V_{DROM}$, $I_{GT} = 80\text{mA}$, $t_r = 0.1\mu\text{sec}$, $I_T = 10\text{A}$ (Peak) and $T_C = 25^\circ\text{C}$	t_{GT}		2.5 TYP	2.5 TYP	2.5 TYP	μSEC
	Thermal Resistance, Junction-to-Case	$R_{\theta JC}$		2.5 TYP	2.5 TYP	*1.5 TYP	$^\circ\text{C/W}$

ALL VALUES APPLY IN EITHER DIRECTION

*BeO Substrate

ISOTT 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_{RMS})

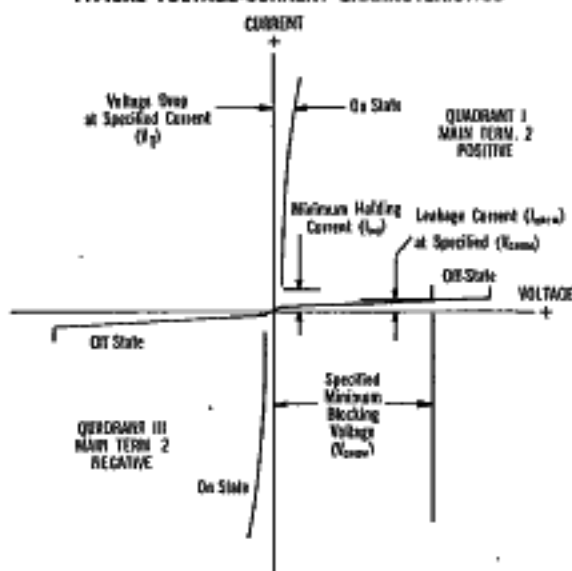
NOTE 2: For CHARACTERISTICS:

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

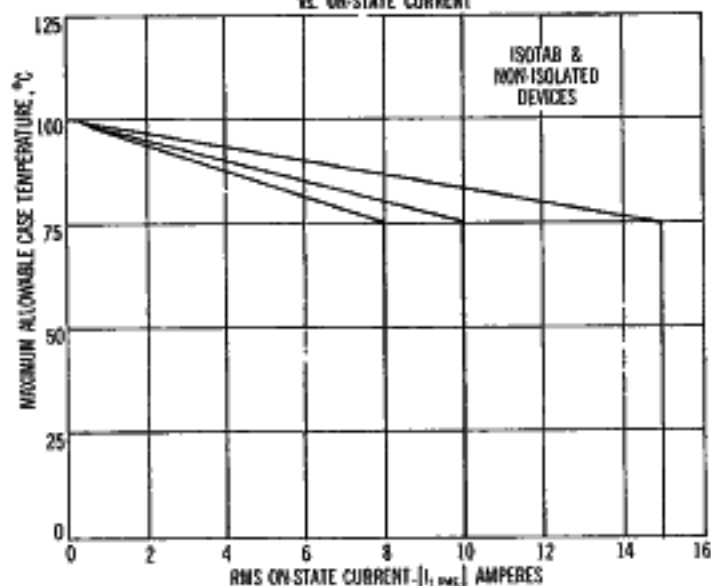
EXAMPLE
 I T 4 8 A

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

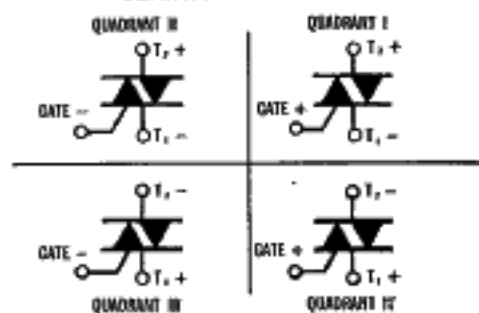
TYPICAL VOLTAGE-CURRENT CHARACTERISTICS



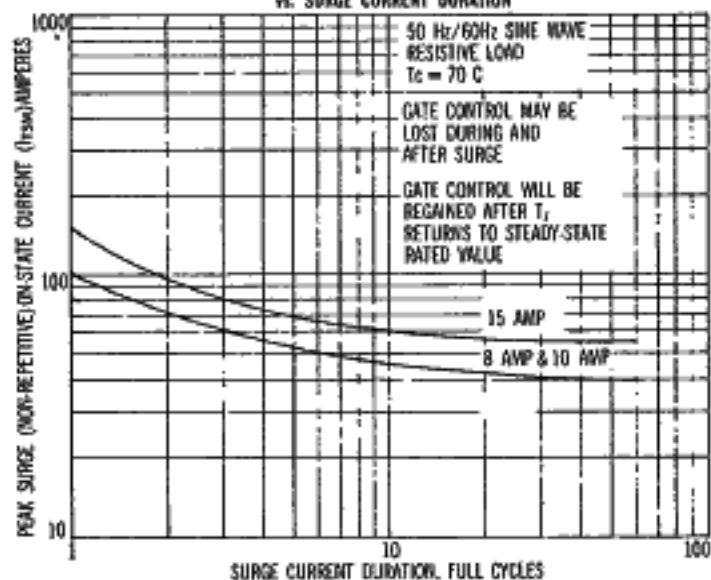
MAXIMUM ALLOWABLE CASE TEMPERATURE vs. ON-STATE CURRENT



DEFINITION OF QUADRANTS



PEAK SURGE ON-STATE CURRENT vs. SURGE CURRENT DURATION

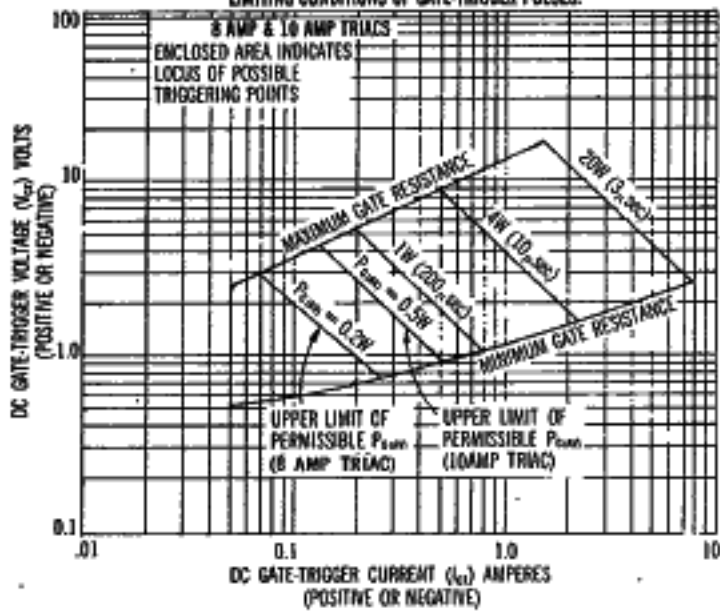


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 DALLAS, TEXAS 75234 (214) 241-3511
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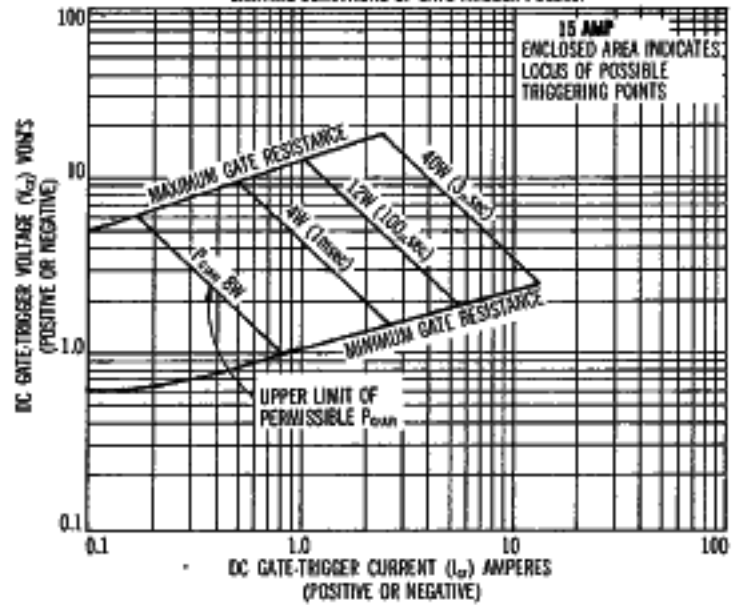
ISOTT-00008-3X

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

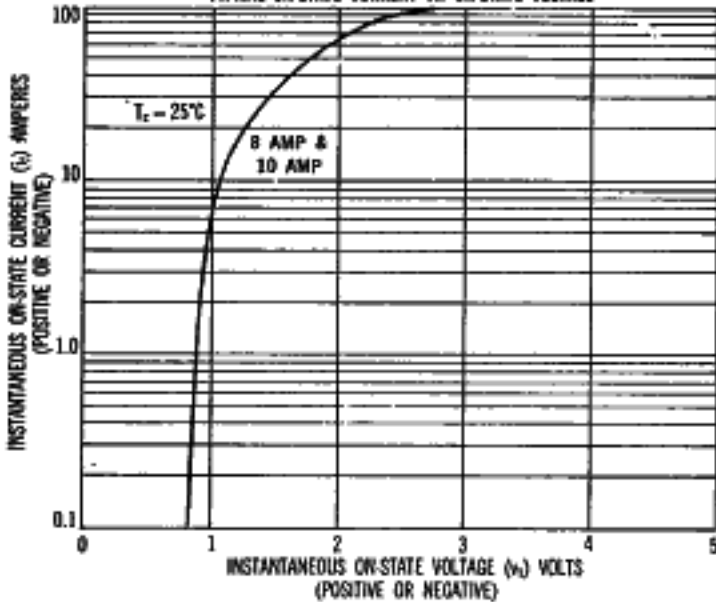
GATE-TRIGGER CHARACTERISTICS AND LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



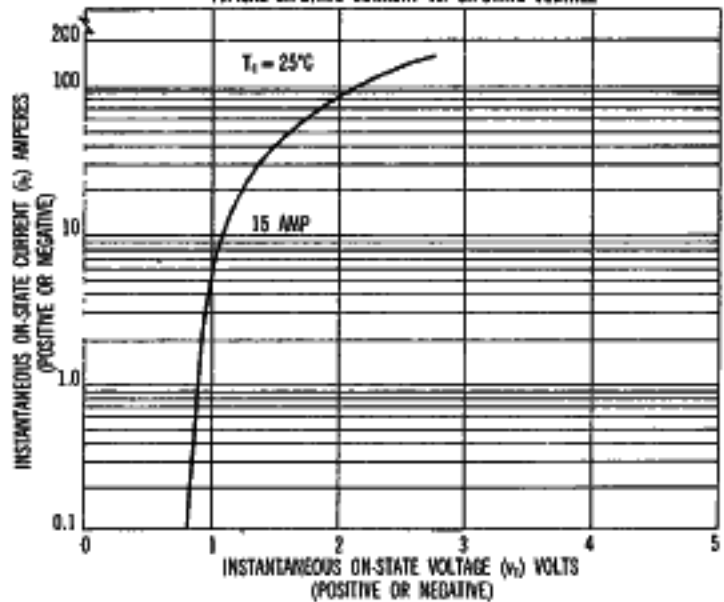
GATE-TRIGGER CHARACTERISTICS AND LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



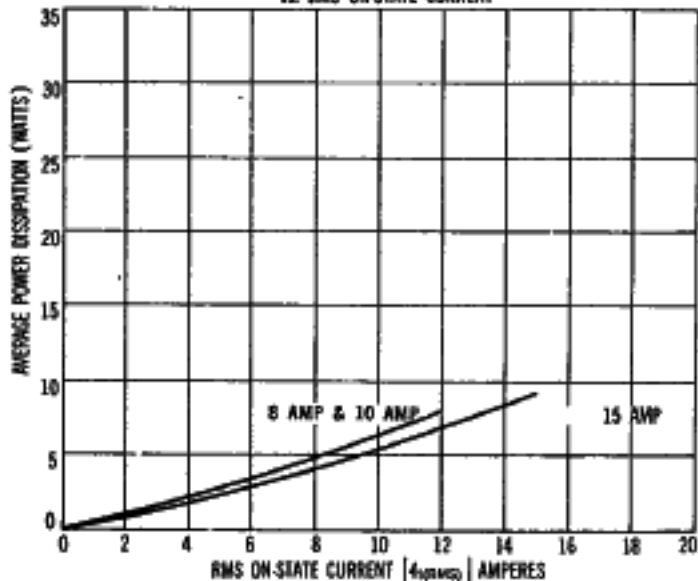
TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL AVERAGE POWER DISSIPATION vs. RMS ON-STATE CURRENT



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2018 W. VALLEY VIEW LANE
DALLAS, TEXAS 75234 (214) 241-3511
TWX 910-860-5537

EUROPEAN OFFICE:
30 RUE PIERRE SEMARD,
YERRES, 91, FRANCE
TEL: Paris 825-8258
TELEX 21311

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