

HUTSON INDUSTRIES

TRIAC's



3 AMPERE SENSITIVE GATE TRIACS

3mA DC Gate-Trigger Current
4mA DC Gate-Trigger Current
5mA DC Gate-Trigger Current
10mA DC Gate-Trigger Current
25mA DC Gate-Trigger Current
ALL QUADRANT GATING

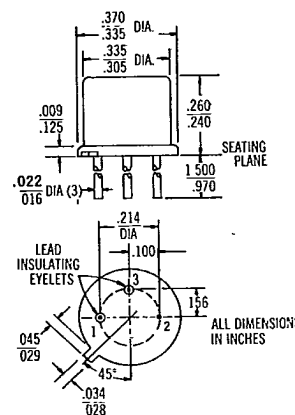
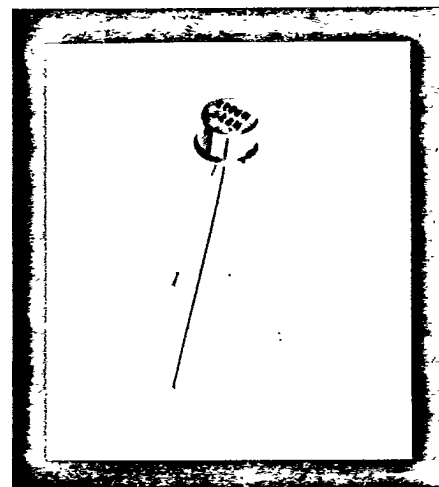
The Hutson line of sensitive gate triacs are designed to be driven directly with IC and MOS devices. These triacs feature proprietary, void-free glass passivated chips and are hermetically sealed in TO-5 outline cans.

These 3 Ampere triacs are available in voltage ratings from 50 to 600 Volts (V_{DROM}) and in 3mA, 5mA, 10mA and 25mA (I_{GT}) ratings. All devices are tested at their upper operating limits before shipment.

The economical and highly reliable triacs are the result of Hutson's advanced engineering and manufacturing technology, state-of-the-art passivation materials and techniques and experience in switching device applications.

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-trigger current. They are designed for control applications in lighting, heating, cooling and static switching relays.

In addition to standard package configurations, all Hutson triacs are also available in chip form. Please consult Hutson Industries for additional information.



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

TO-5
(MODIFIED)

NOTE: Main Term 2 and case
are electrically common.

HUTSON INDUSTRIES

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



SGTT-00003-1X

MARCH, 1977/HDT 100A

HUTSON INDUSTRIES

MAXIMUM RATINGS		SYMBOL	V _{DRM}	DEVICE NO.	DEVICE NOS.
	Repetitive Peak Off-State Voltage, ⁽¹⁾ Gate Open, and T _J = 100°C ⁽¹⁾	V _{DRM}	50	HI03SS	HI03SC
			100	HI13SS	HI13SC
			200	HI23SS	HI23SC
			300	HI33SS	HI33SC
			400	HI43SS	HI43SC
			500	HI53SS	HI53SC
			600	HI63SS	HI63SC
	RMS On-State Current at T _c = 75°C and Conduction Angle of 360°	I _{H(RMS)}		3	3
	Peak Surge (Non-Repetitive) On-State Current, One-Cycle, at 50Hz or 60Hz	I _{TSM}		30	30
ELECTRICAL CHARACTERISTICS At Maximum Ratings and Specified Case Temperatures	Peak Gate-Trigger Current for 3μsec, Max.	I _{GT}		1	1
	Peak Gate-Power Dissipation at I _{GT} ≤ I _{GT} for 3μsec, 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 +90	-40 to +90
	Peak Off-State Current, ⁽¹⁾ Gate Open T _J = 100°C ⁽¹⁾ V _{DRM} = Max. Rating	I _{DRM}		0.75 Max.	0.75 Max.
	Maximum On-State Voltage ⁽¹⁾ at T _c = 25°C and I _T = 5 Amp (Peak)	V _{TM}		1.85 Max.	1.85 Max.
	DC Holding Current, Gate Open and T _c = 25°C	I _{HO}		5 Max.	15 Max.
	Critical Rate-of-Rise of Off-State Voltage ⁽¹⁾ for V _D = V _{DRM} , Gate Open, T _c = 100°C ⁽²⁾	Critical dv/dt		3 Typ.	3 Typ.
	DC Gate-Trigger Current for V _D = 6VDC, R _L = 39Ω and at T _c = 25°C (T ₂ +Gate+, T ₂ -Gate-) Quads I and III (T ₂ +Gate-, T ₂ -Gate+) Quads II and IV	I _{GT}		3 Max.	4 Max.
	DC Gate-Trigger Voltage for V _D = 6VDC, R _L = 39Ω and at T _c = 25°C	V _{GT}		2.2 Max.	2.2 Max.
	Gate-Controlled Turn-on Time for V _D = V _{DRM} , I _{GT} = 80mA, t _r = 0.1μsec., I _T = 10A (Peak) and T _c = 25°C	t _{gt}		2.2 Typ.	2.2 Typ.
	Thermal Resistance, Junction-to-Case	θ _{J-C}		4 Typ.	4 Typ.
	Fusing Current (For Triac Protection) T = 1.25 to 10ms	I ² t		3	3

ADDITIONAL GATE TRIGGER CURRENTS AVAILABLE

GATE TRIGGER CURRENTS (MAX.)					
SUFFIX	QUADRANTS				UNITS
	I	II	III	IV	
SA	3	N/S	3	N/S	mA
CA	4	N/S	4	N/S	mA
DA	5	N/S	5	N/S	mA
GA	10	N/S	10	N/S	mA
HA	25	N/S	25	N/S	mA

N/S —
Not Specified

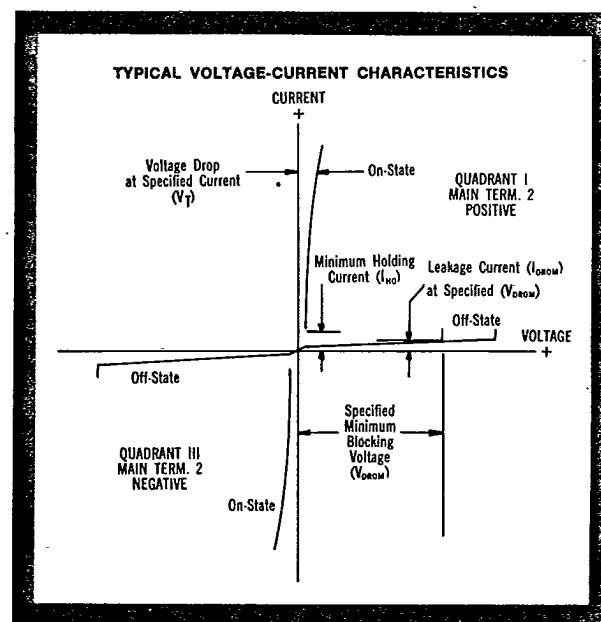
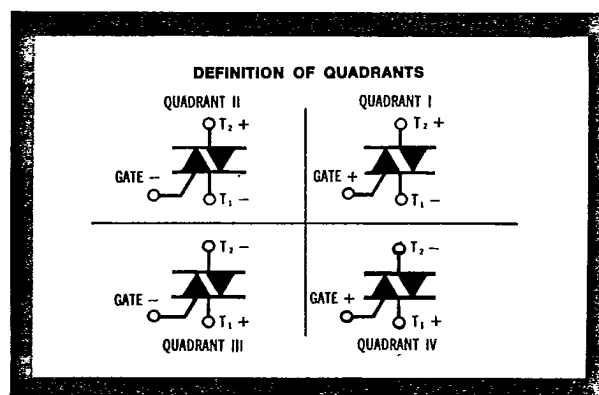
SGTT-00003-2X

3 AMPERE SENSITIVE GATE TRIACS

DEVICE NOS.			UNITS
HI03SD	HI03SG	HI03SH	VOLT
HI13SD	HI13SG	HI13SH	
HI23SD	HI23SG	HI23SH	
HI33SD	HI33SG	HI33SH	
HI43SD	HI43SG	HI43SH	
HI53SD	HI53SG	HI53SH	
HI63SD	HI63SG	HI63SH	
3	3	3	AMP
30	30	30	AMP
1	1	1	AMP
20	20	20	WATT
0.2	0.2	0.2	WATT
-40 to +150	-40 to +150	-40 to +150	°C
-40 to +100	-40 to +100	-40 to +100	°C
0.75 Max.	0.75 Max.	0.75 Max.	mA
2.20 Max.	2.20 Max.	2.20 Max.	VOLT
15 Max.	15 Max.	15 Max.	mA
4 Typ.	5 Typ.	7 Typ.	V/μsec
5 Max.	10 Max.	25 Max.	mA
2.2 Max.	2.2 Max.	2.2 Max.	VOLT
2.2 Typ.	2.2 Typ.	2.2 Typ.	μsec
4 Typ.	4 Typ.	4 Typ.	°C/WATT
3	3	3	A°S

NOTES:

1. SS and SC devices are at $T_J = 90^\circ\text{C}$
2. SS and SC devices are at $T_C = 90^\circ\text{C}$
3. All values apply in either direction.

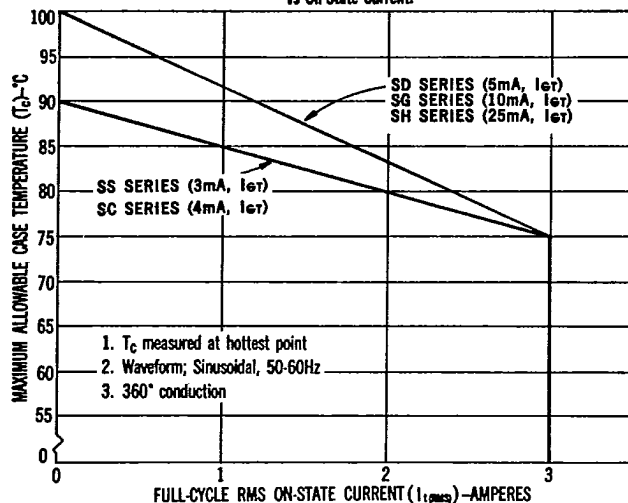

HUTSON INDUSTRIES

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

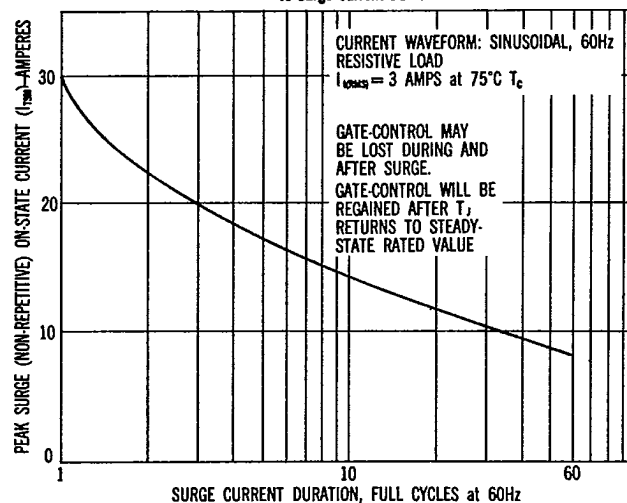
SGT-00003-3X

3 AMPERE SENSITIVE GATE TRIACS

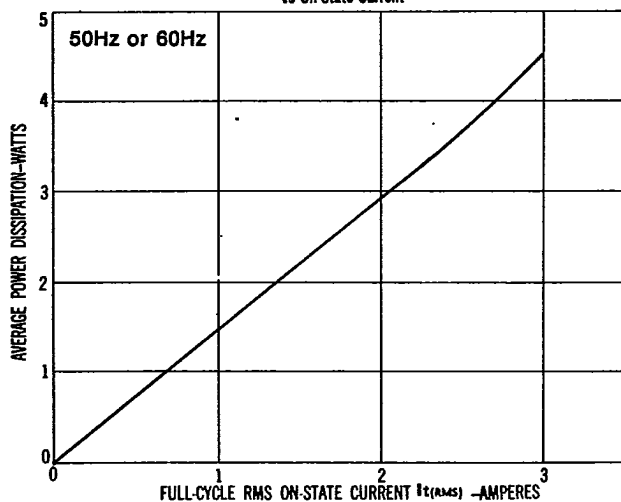
Maximum Allowable Case Temperature
vs On-State Current



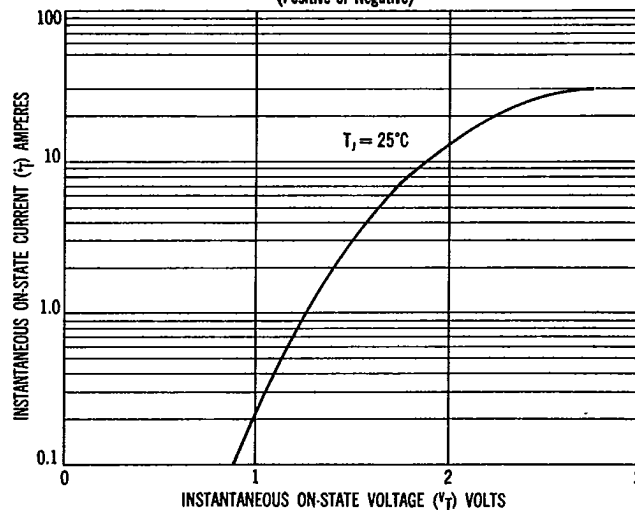
Peak Surge On-State Current
vs Surge Current Duration



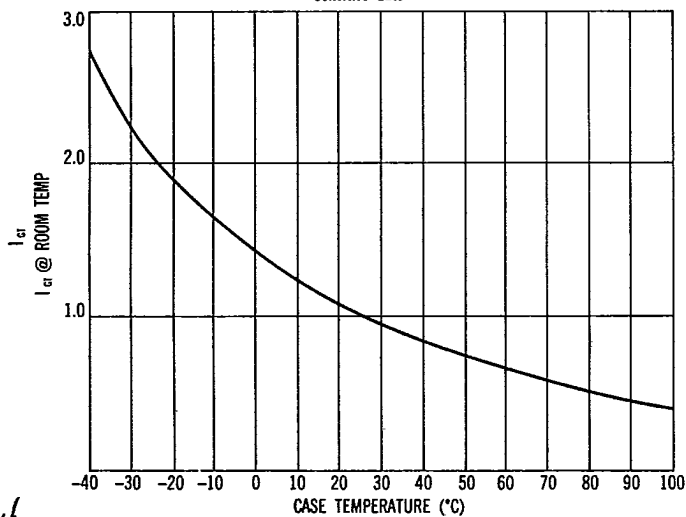
Maximum Power Dissipation
vs On-State Current



On-State Current vs On-State Voltage
(Positive or Negative)



Typical Gate Current vs Case Temperature
Sensitive Gate



HUTSON INDUSTRIES

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

EUROPEAN OFFICE:
10 RUE F. D'ORBAY
DRAVEIL 91 FRANCE
TEL: PARIS 921-7640
TELEX 21-311

The information furnished by Hutson in this publication is believed to be accurate and reliable. However, no responsibility is assumed by Hutson for its use; nor for any infringements of patents or other rights of third parties resulting from its use. No license either expressed or implied is granted under any patents or patent rights of Hutson Industries, Inc.

PRINTED IN USA

SGTT-00003-4X