DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

T6410 SERIES

BIDIRECTIONAL TRIODE THYRISTORS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive peak off-stage voltage, gate open (T_J = -65 to +110°C) T6410B T6410D T6410M T6410N	V_{DRM}	 200 400 600 800	Volts
RMS on-state current (conduction angle = 360°, $T_C \leq$ 65°C)	$I_{T(RMS)}$	40	Amps
Peak non-repetitive surge current (One Cycle, 60Hz)	I_{TSM}	300	Amps
Circuit fusing considerations (T_J = -65 to +110°C, t = 1.25 to 10ms)	I^2t	450	A^2s
Peak gate power (pulse width = 10µs)	P_{GM}	40	Watts
Average gate power	$P_{G(AV)}$	0.75	Watts
Peak gate current (pulse width ≤ 10µs)	I_{GM}	12	Amps
Operating junction temperature range	T_J	-65 to +110	°C
Storage temperature range	T_{stg}	-65 to +150	°C
Stud torque		30	In. lb.

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal resistance, junction to case	$R_{\Theta JC}$	0.9	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C and either polarity of MT2 to MT1 voltage, unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak off state current ($V_D = V_{DRM}$, gate open, T_J = 110°C)	I_{DRM}	-	-	4	mA
Peak on-state voltage (either direction) (I_{TM} = 100A peak)	V_{TM}	-	1.5	2.0	Volts
DC gate trigger current (continuous dc) (V_D = 12V, R_L = 30Ω) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) MT2(+), G(+); MT2(-), G(-), T_C = -65°C MT2(+), G(-); MT2(-), G(+), T_C = -65°C	I_{GT}	 - - - - -	 15 30 20 40 - -	 50 80 50 80 125 240	mA
DC gate trigger voltage (continuous dc), all trigger modes (V_D = 12V, R_L = 30Ω) (V_D = 12V, R_L = 30Ω, T_C = -65°C) (V_D = Rated V_{DRM}, R_L = 125Ω, T_C = 110°C)	V_{GT}	 - - 0.2	 1.35 - -	 2.5 3.4 -	Volts

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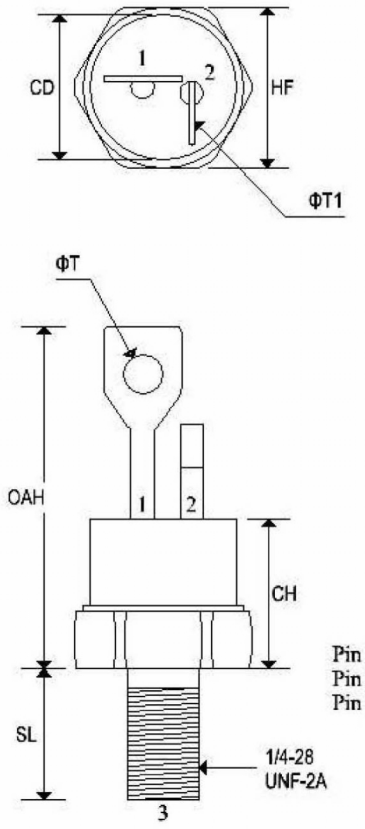
Holding current (either direction) (V_D = 12V, gate open, I_T = 500mA, T_C = 25°C) (V_D = 12V, gate open, I_T = 500mA, T_C = -65°C)	I_H	- -	25 -	60 100	mA
Gate controlled turn on time (V_D = Rated V_{DRM}, I_T = 60A, I_{GT} = 200mA, rise time = 0.1µs)	t_{gt}	-	1.7	3	µs
Critical rate of rise of commutating voltage (commutating di/dt = 22A/ms, gate unenergized, V_D = Rated V_{DRM}, $I_{T(RMS)}$ = 40A, T_C = 65°C)	dv/dt(c)	-	5	-	V/µs

MECHANICAL CHARACTERISTICS

Case	TO-48
Marking	Alpha-numeric
Polarity	Cathode is stud



	TO-48			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	-	0.543	-	13.793
CH	-	0.550	-	13.970
HF	0.544	0.563	13.817	14.301
OAH	-	1.193	-	30.303
SL	0.422	0.453	10.718	11.507
ΦT	0.125	0.165	3.175	4.191
$ΦT_1$	0.060	0.075	1.524	1.905

Note: Contour and angular orientation of terminals 1 and 2 with respect to hex portion and to each other are optional.

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