

DIGITRON SEMICONDUCTORS

T6410 SERIES

BIDIRECTIONAL TRIODE THYRISTORS

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

MAXIMUM RATINGS

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

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal resistance, junction to case	$R_{\theta\text{JC}}$	0.9	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak off state current ($V_D = V_{\text{DRM}}$, gate open, $T_J = 110^\circ\text{C}$)	I_{DRM}	-	-	4	mA
Peak on-state voltage (either direction) ($I_{\text{TM}} = 100\text{A}$ peak)	V_{TM}	-	1.5	2.0	Volts
DC gate trigger current (continuous dc) ($V_D = 12\text{V}$, $R_L = 30\Omega$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) MT2(+), G(+); MT2(-), G(-), $T_C = -65^\circ\text{C}$ MT2(+), G(-); MT2(-), G(+), $T_C = -65^\circ\text{C}$	I_{GT}	-	15 30 20 40 - -	50 80 50 80 125 240	mA
DC gate trigger voltage (continuous dc), all trigger modes ($V_D = 12\text{V}$, $R_L = 30\Omega$) ($V_D = 12\text{V}$, $R_L = 30\Omega$, $T_C = -65^\circ\text{C}$) ($V_D = \text{Rated } V_{\text{DRM}}$, $R_L = 125\Omega$, $T_C = 110^\circ\text{C}$)	V_{GT}	-	1.35 - 0.2	2.5 3.4 -	Volts
Holding current (either direction) ($V_D = 12\text{V}$, gate open, $I_T = 500\text{mA}$, $T_C = 25^\circ\text{C}$) ($V_D = 12\text{V}$, gate open, $I_T = 500\text{mA}$, $T_C = -65^\circ\text{C}$)	I_{H}	-	25 -	60 100	mA
Gate controlled turn on time ($V_D = \text{Rated } V_{\text{DRM}}$, $I_T = 60\text{A}$, $I_{\text{GT}} = 200\text{mA}$, rise time = $0.1\mu\text{s}$)	t_{gt}	-	1.7	3	μs
Critical rate of rise of commutating voltage (commutating $di/dt = 22\text{A/ms}$, gate unenergized, $V_D = \text{Rated } V_{\text{DRM}}$, $I_{\text{T(RMS)}} = 40\text{A}$, $T_C = 65^\circ\text{C}$)	$dv/dt(c)$	-	5	-	$\text{V}/\mu\text{s}$

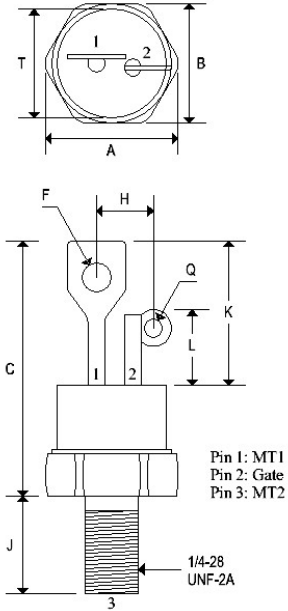
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MECHANICAL CHARACTERISTICS

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



	TO-48			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.604	0.614	15.340	15.600
B	0.551	0.559	14.000	14.200
C	1.050	1.190	2.670	30.230
F	0.135	0.160	3.430	4.060
H	-	0.265	-	6.730
J	0.420	0.455	10.670	11.560
K	0.620	0.670	15.750	17.020
L	0.300	0.350	7.620	8.890
Q	0.055	0.085	1.400	2.160
T	0.501	0.505	12.730	12.830

