

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⁽¹⁾ ($T_J = -65$ to $+100^\circ\text{C}$, gate open)	V_{DRM}	200 400 600	Volts
T4120B			
T4120D			
T4120M			
RMS on-state current (conduction angle = 360° , $T_C \leq 75^\circ\text{C}$)	$I_{\text{T(RMS)}}$	15	Amps
Peak non-repetitive surge current (One Cycle, 60Hz)	I_{TSM}	100	Amps
Circuit fusing considerations ($T_C = -65$ to $+100^\circ\text{C}$, $t = 1.25$ to 10ms)	I^2t	50	A^2s
Peak gate power (pulse width = $1.0\mu\text{s}$)	P_{GM}	16	Watts
Average gate power	$P_{\text{G(AV)}}$	0.5	Watts
Peak trigger current (pulse width = $1.0\mu\text{s}$)	I_{GM}	4	Amps
Operating junction temperature range	T_J	-65 to +100	$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150	$^\circ\text{C}$
Stud torque		30	In. lb.

Note 1: Ratings apply for open gate conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal resistance, junction to case	$R_{\theta\text{JC}}$	1.1	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ and either polarity of MT2 to MT1 voltage, unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak off state current (Rated V_{DRM} @ $T_C = 100^\circ\text{C}$)	I_{DRM}	-	-	2	mA
Peak on-state voltage ($I_{\text{TM}} = 21\text{A}$ peak)	V_{TM}	-	1.4	1.8	Volts
DC gate trigger current (continuous dc) ⁽²⁾ ($V_D = 12\text{V}$, $R_L = 30\Omega$) 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}	-	-	50 80 150 200	mA
DC gate trigger voltage (continuous dc), all quadrants ($V_D = 12\text{V}$, $R_L = 30\Omega$) ($V_D = 12\text{V}$, $R_L = 30\Omega$, $T_C = -65^\circ\text{C}$) ($V_D = \text{Rated } V_{\text{DRM}}$, $R_L = 125\Omega$, $T_C = 100^\circ\text{C}$)	V_{GT}	-	-	2.5 4.0 -	Volts
Holding current ($V_D = 12\text{V}$, 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}	-	-	75 300	mA

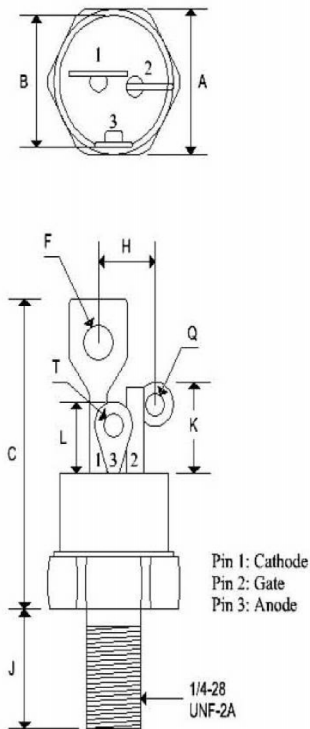
T4120 SERIES

SILICON BIDIRECTIONAL THYRISTORS

Gate controlled turn on time ($V_D = \text{Rated } V_{DRM}$, $I_T = 25A$, $I_{GT} = 160mA$, rise time = $0.1\mu s$)	t_{gt}	-	1.6	2.5	μs
Critical rate of rise of commutating voltage (Rated V_{DRM} , $I_{T(RMS)} = 15A$, commutating $di/dt = 8A/ms$, gate unenergized, $T_C = 75^\circ C$)	$dv/dt(c)$	2	10	-	$V/\mu s$
Critical rate of rise of off-state voltage (Rated V_{DRM} , exponential voltage rise, gate open, $T_C = 100^\circ C$)	dv/dt				$V/\mu s$
T4120B		30	150	-	
T4120D		20	100	-	
T4120M		10	75	-	

MECHANICAL CHARACTERISTICS

Case	TO-48 ISO
Marking	Alpha-numeric
Pin out	Cathode is stud



TO-48 ISO				
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.551	0.559	14.000	14.200
B	0.501	0.505	12.730	12.830
C	-	1.280	-	32.510
F	-	0.160	-	4.060
H	-	0.265	-	6.730
J	0.420	0.455	10.670	11.560
K	0.300	0.350	7.620	8.890
L	0.255	0.275	6.480	6.990
Q	0.055	0.085	1.400	2.160
T	0.135	0.150	3.430	3.810

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