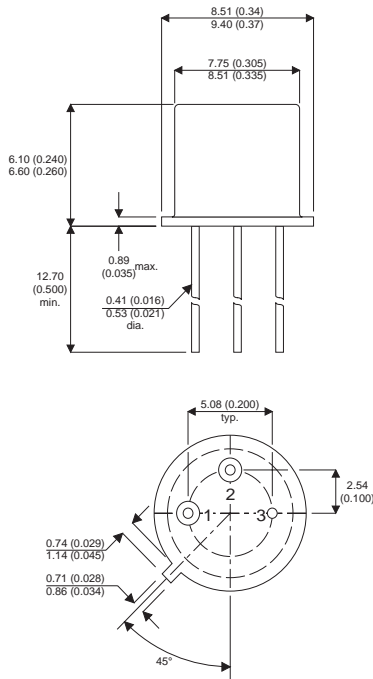


MECHANICAL DATA

Dimensions in mm(inches)



TO39 (TO-205AD)

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

NPN SILICON TRANSISTOR

FEATURES

- FAST SWITCHING
- HIGH PULSE POWER

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	450V
V_{CEX}	Collector – Emitter Voltage ($V_{BE} = -1.5V$)	450V
V_{CEO}	Collector – Emitter Voltage	400V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Collector Current	2A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	5A
I_B	Base Current	0.375A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	10W
T_j, T_{stg}	Maximum Junction And Storage Temperature Range	-65°C to +200°C

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ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}$ Collector - Emitter Sustaining Voltage	$I_{\text{C}} = 200\text{mA}$ $I_{\text{B}} = 0\text{A}$ $L = 25\text{mH}$	400			V
I_{CEX} Collector Emitter Cut-off Current	$V_{\text{CE}} = 450\text{V}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.1 0.5	mA
$V_{\text{CE(sat)}}$ * Collector - Emitter Saturation Voltage	$I_{\text{C}} = 0.6\text{A}$ $I_{\text{C}} = 1.2\text{A}$	$I_{\text{B}} = 0.06\text{A}$ $I_{\text{B}} = 0.15\text{A}$		0.5 1.3	V
$V_{\text{BE(sat)}}$ * Base - Emitter Saturation Voltage	$I_{\text{C}} = 1.2\text{A}$	$I_{\text{B}} = 0.15\text{A}$		1.5	V
f_{t} Transition Frequency	$V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 0.2\text{A}$	$f = 5\text{MHz}$	8		MHz
$t_{\text{d}} + t_{\text{r}}$ Turn-On Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}} = 0.15\text{A}$			0.25	μs
t_{f} Fall Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}2} = 0.15\text{A}$	$I_{\text{B}1} = 0.15\text{A}$		1.2	
t_{s} Carrier Storage Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}2} = 0.15\text{A}$	$I_{\text{B}1} = 0.15\text{A}$		3.5	

*Pulsed $t_{\text{p}} = 300\mu\text{s}$ @ < 1%

THERMAL CHARACTERISTICS

$R_{\theta\text{JC}}$ Junction to Case Thermal Resistance			17.5	$^{\circ}\text{C/W}$
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