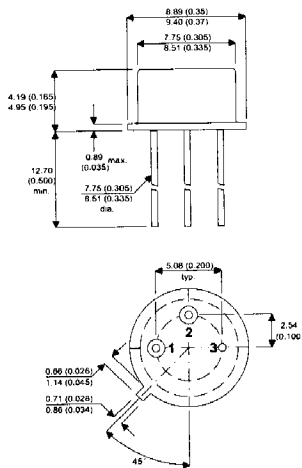


MECHANICAL DATA

Dimensions in mm(inches)



TO39

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	300V
V_{CEX}	Collector – Emitter Voltage ($V_{BE} = -1.5V$)	300V
V_{CEO}	Collector – Emitter Voltage	200V
V_{ER}	Collector – Emitter Voltage $R_{BE} = 100\Omega$	260V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Collector Current	3.5A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	5A
I_B	Base Current	0.7A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	10W
T_{stg}	Storage Temperature	200°C
T_j	Junction Temperature	-65°C to +200°C

BUX51

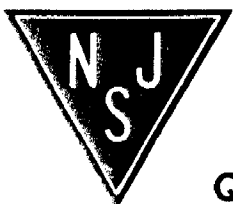
ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _{CEO(sus)} Collector - Emitter Sustaining Voltage	I _C = 200mA I _B = 0.5A L = 25mH	200			V
V _{(BR)EBO} Emitter - Base Breakdown Voltage	I _C = 0 I _E = 5mA	7			V
I _{CEO} Collector Emitter Cut-off Current	V _{CE} = 160V I _B = 0			0.5	mA
I _{CEX} Collector Emitter Cut-off Current	V _{CE} = 250V V _{BE} = -1.5V T _C = 125°C			0.1 0.5	mA
I _{EBO} Emitter-Base Cut-off Current	I _C = 0 V _{EB} = 5V			0.5	mA
V _{CE(sat)*} Collector - Emitter Saturation Voltage	I _C = 1A I _C = A		0.15 0.3	0.5 1	V
V _{BE(sat)*} Base - Emitter Saturation Voltage	I _C = 2A I _B = 0.2A		0.9	1.3	V
I _{S/b} Second Breakdown Collector Current	V _{CE} = 40V t = 1s	0.25			A
f _t Transition Frequency	I _C = 0.5A f = 10MHz V _{CE} = 10V	8			MHz
t _{d + tr} Turn-On Time	I _C = 2A I _B = 0.2A		0.45	0.8	
t _f Fall Time	I _C = 2A I _{B2} = 0.2A I _{B1} = 0.2A		0.2	0.5	μs
Carrier Storage Time	I _C = 2A I _{B2} = 0.2A I _{B1} = 0.2A		1.2	2.5	

*Pulsed tp = 300μs @ < 1%

THERMAL CHARACTERISTICS

R _{θJC} Junction to Case Thermal Resistance	17.5 °C/W
R _{θJA} Junction to Ambient Thermal Resistance	175 °C/W



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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