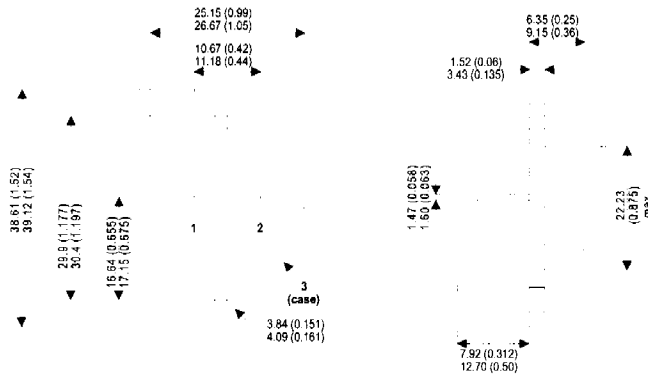


BUX25

NPN SILICON POWER TRANSISTOR



FEATURES

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

APPLICATIONS

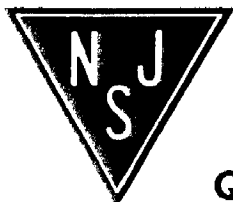
- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

TO-204AE (TO-3)

PIN 1 — Base PIN 2 — Emitter Case is Collector.

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

V_{CBO}	Collector - Base Voltage ($I_E = 0$)	500V
V_{CEX}	Collector - Emitter Voltage ($V_{BE} = -1.5V$)	500V
V_{CEO}	Collector - Emitter Voltage ($I_B = 0$)	500V
V_{CER}	Collector - Emitter Voltage ($R_{BE} = 100\Omega$)	500V
V_{EBO}	Emitter - Base Voltage ($I_C = 0$)	7V
I_C	Collector Current	15A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	20A
I_B	Base Current	3A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	350W
T_{stg}	Storage Temperature	-65 to 200°C
T_j	Junction Temperature	200°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	0.5°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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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(BR)^*}$ Collector - Emitter Breakdown Voltage	$I_C = 200mA$	500			V
V_{EBO} Emitter - Base Voltage	$I_E = 50mA$ $I_C = 0$	7			V
I_{CEO} Collector Cut-off Current	$V_{CE} = 400V$ $I_B = 0$			3	mA
I_{CEX} Collector Cut-off Current	$V_{CE} = 500V$ $V_{BE} = -1.5V$ $T_C = 125^{\circ}C$			3 12	mA
I_{EBO} Emitter Cut-off Current	$I_C = 0$ $V_{EB} = 5V$			1.0	mA
$V_{CE(sat)^*}$ Collector - Emitter Saturation Voltage	$I_C = 4A$ $I_C = 8A$ $I_B = 0.8A$ $I_B = 1.6A$		0.2 0.6	0.6 1.0	V
$V_{BE(sat)^*}$ Base - Emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$		1.2	1.5	V
h_{FE}^* DC Current Gain	$V_{CE} = 4V$ $V_{CE} = 4V$ $I_C = 4A$ $I_C = 8A$	15 8		60	—
$I_{S/b}$ Second Breakdown Collector Current	$V_{CE} = 140V$ $V_{CE} = 25V$ $t = 1s$ $t = 1s$	0.15 14			A
f_T Transition Frequency	$I_C = 2A$ $f = 10MHz$ $V_{CE} = 15V$	8			MHz
t_{on} Turn-On Time	$I_C = 8A$ $I_{B1} = 1.6A$		0.9	1.8	
t_s Storage Time	$I_C = 8A$ $I_{B2} = -1.6A$ $I_{B1} = 1.6A$		3.5	5	μs
t_f Fall Time	$I_C = 8A$ $I_{B2} = -1.6A$ $I_{B1} = 1.6A$		0.9	1.6	

(*) Pulse test: $t_p \leq 300\mu s$, $\delta \leq 2\%$