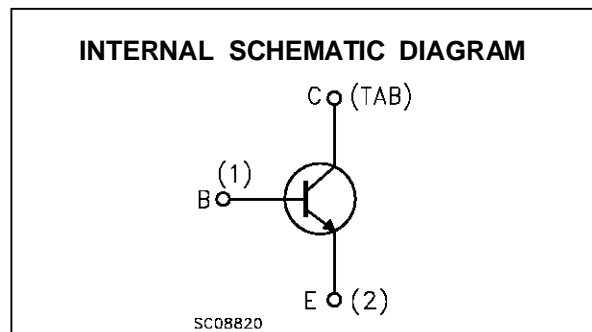
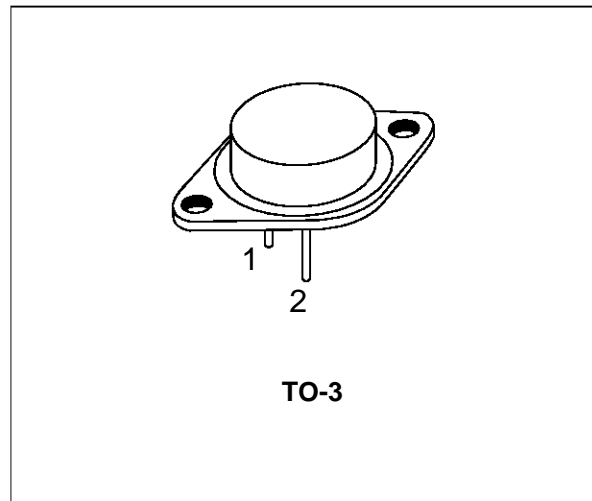


HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

DESCRIPTION

The BUX41N is a silicon multiepitaxial planar NPN transistor in Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	220	V
V_{CEX}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	220	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	160	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	18	A
I_{CM}	Collector Peak Current ($t_P = 10$ ms)	25	A
I_B	Base Current	3.6	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	120	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ C$
T_j	Max Operating Junction Temperature	200	$^\circ C$

BUX41N

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.46	$^{\circ}C/W$
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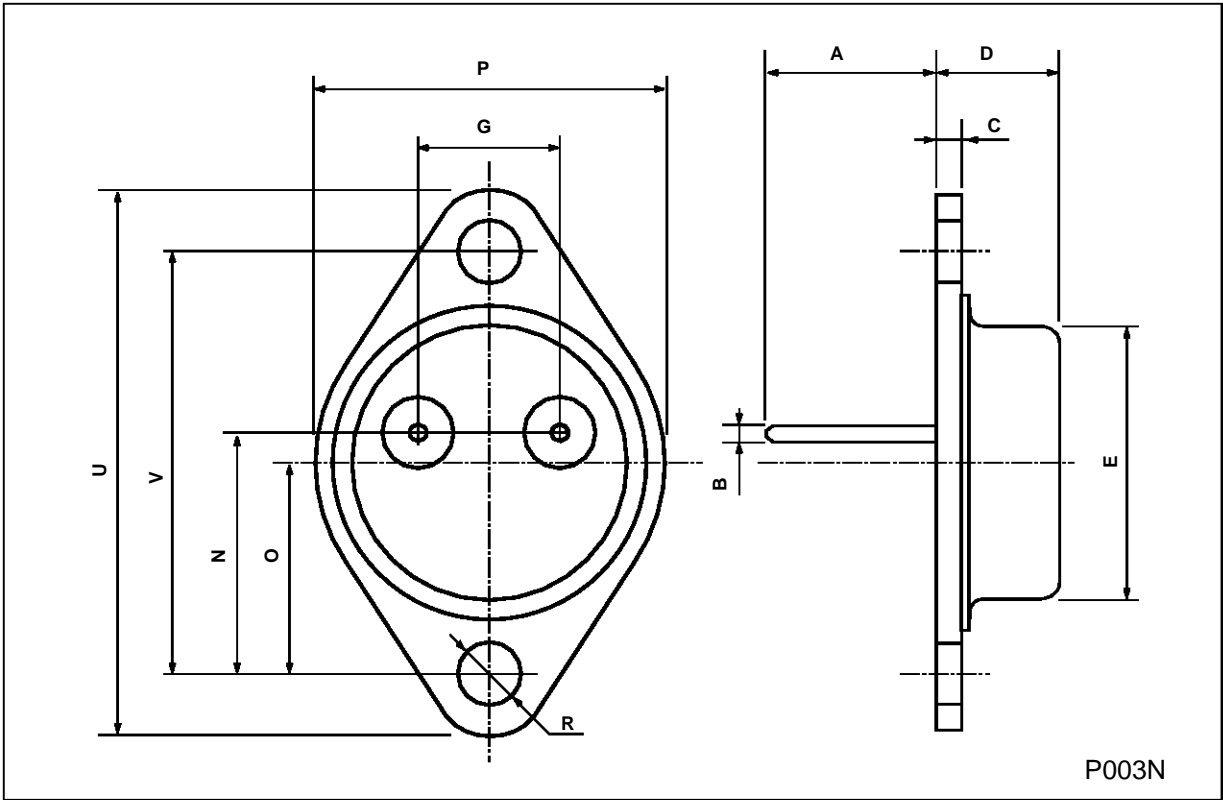
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 130 V$			1	mA
I_{CEX}	Collector Cut-off Current	$V_{CE} = 220 V$ $T_{case} = 125^{\circ}C$ $V_{BE} = -1.5V$			1	mA
		$V_{CE} = 220 V$ $V_{BE} = -1.5V$			5	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 V$			1	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 200 mA$	160			V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	$I_E = 50 mA$	7			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 8 A$ $I_C = 12 A$		0.5 0.75	1.2 1.6	V V
		$I_B = 0.8 A$ $I_B = 1.5 A$				
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 12 A$		1.5	2	V
h_{FE}^*	DC Current Gain	$I_C = 8 A$ $I_C = 12 A$	15 8		45	
		$V_{CE} = 4 V$ $V_{CE} = 4 V$				
$I_{S/b}$	Second Breakdown Collector Current	$V_{CE} = 30 V$ $V_{CE} = 100 V$	4 0.27			A A
		$t = 1 s$ $t = 1 s$				
f_T	Transistor Frequency	$V_{CE} = 15 V$ $f = 10 MHz$	8			MHz
		$I_C = 1 A$				
t_{on}	Turn-on Time	$I_C = 12 A$ $V_{CC} = 30 V$		0.35	1.3	μs
		$I_{B1} = 1.5 A$				
t_s	Storage Time	$I_C = 12 A$		0.85	1.5	μs
t_f	Fall Time	$V_{CC} = 30V$		0.14	0.8	μs
		$I_{B1} = - I_{B2} = 1.5 A$				
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 160 V$ $L = 500 \mu H$	12			A

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

TO-3 (H) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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