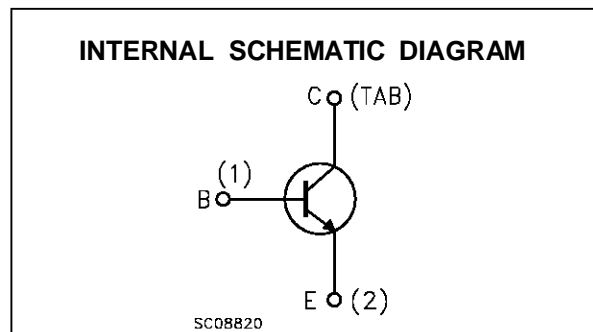
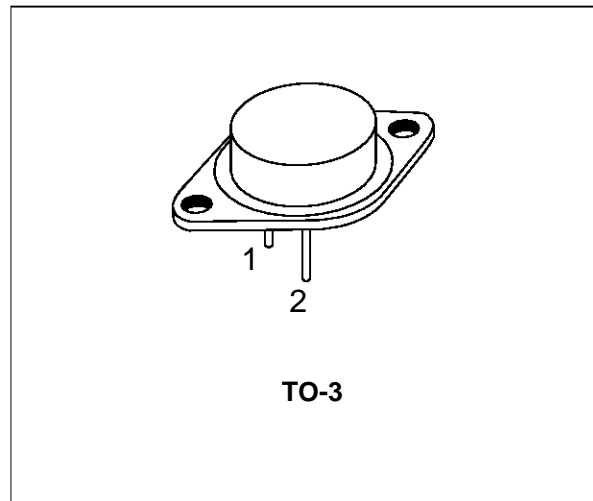


## HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

**DESCRIPTION**

The BUX10 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 ( $I_E = 0$ )	160	V
$V_{CEX}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )	160	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	125	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	25	A
$I_{CM}$	Collector Peak Current ( $t_P = 10$ ms)	30	A
$I_B$	Base Current	5	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25$ °C	150	W
$T_{stg}$	Storage Temperature	-65 to 200	°C
$T_j$	Max Operating Junction Temperature	200	°C

## BUX10

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.17	°C/W
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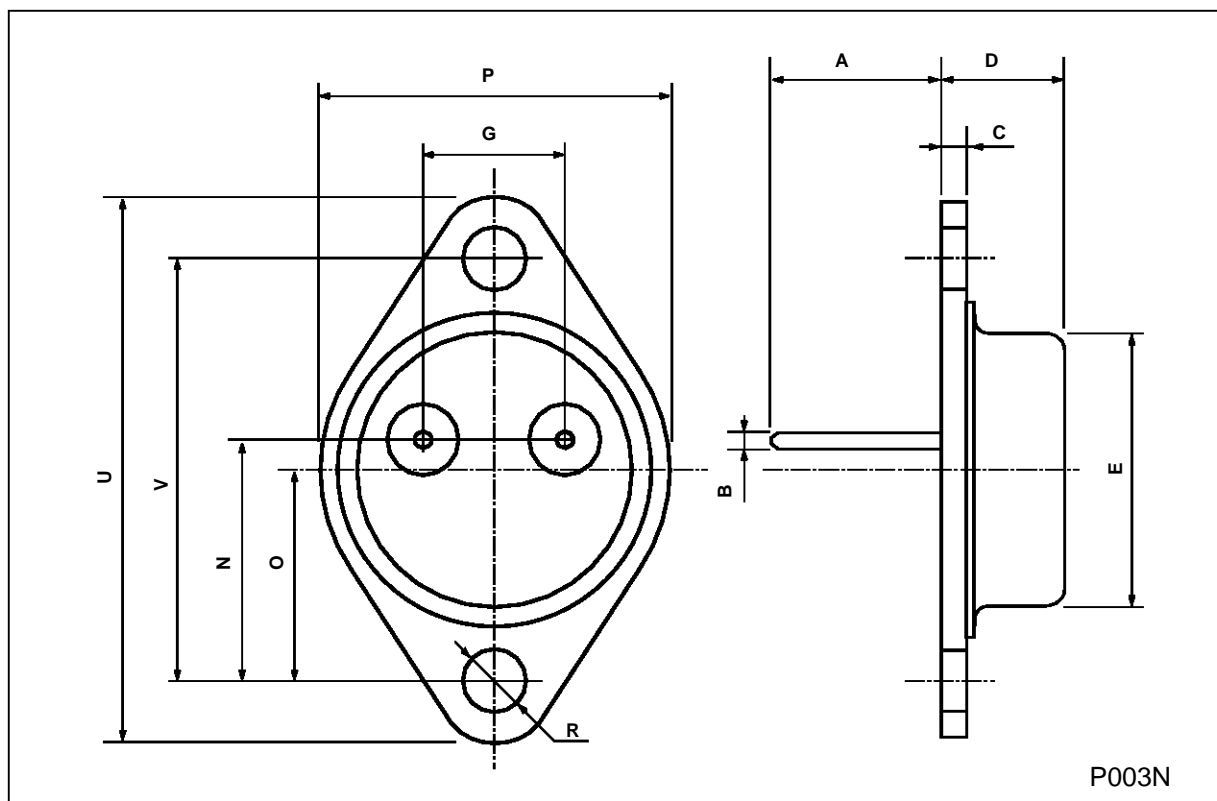
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 100\text{ V}$			1.5	mA	
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = 160\text{ V}$ $T_{case} = 125\text{ °C}$ $V_{CE} = 160\text{ V}$			1.5	mA	
		$V_{BE} = -1.5\text{ V}$ $V_{BE} = -1.5\text{ V}$			6	mA	
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5\text{ V}$			1	mA	
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{ mA}$	125			V	
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	$I_E = 50\text{ mA}$	7			V	
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{ A}$ $I_C = 20\text{ A}$		0.3 0.7	0.6 1.2	V V	
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 20\text{ A}$		1.6	2	V	
$h_{FE}$	DC Current Gain	$I_C = 10\text{ A}$ $I_C = 20\text{ A}$		$V_{CE} = 2\text{ V}$ $V_{CE} = 4\text{ V}$	20 10		60
$I_{S/b}$	Second Breakdown Collector Current	$V_{CE} = 30\text{ V}$ $V_{CE} = 48\text{ V}$		$t = 1\text{ s}$ $t = 1\text{ s}$	5 1	A A	
$f_T$	Transistor Frequency	$I_C = 1\text{ A}$ $f = 10\text{ MHz}$		$V_{CE} = 15$	8		MHz
$t_{on}$	Turn-on Time	$I_C = 20\text{ A}$ $V_{CC} = 30\text{ V}$		$I_{B1} = 2\text{ A}$	0.5	1.5	$\mu\text{s}$
$t_s$ $t_f$	Storage Time Fall Time	$I_C = 20\text{ A}$ $V_{CC} = 30\text{ V}$		$I_{B1} = -I_{B2} = 2\text{ A}$	0.6 0.15	1.2 0.3	$\mu\text{s}$ $\mu\text{s}$
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 125\text{ V}$ $L = 500\text{ }\mu\text{H}$	20			A	

\* Pulsed: Pulse duration = 300 $\mu\text{s}$ , 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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