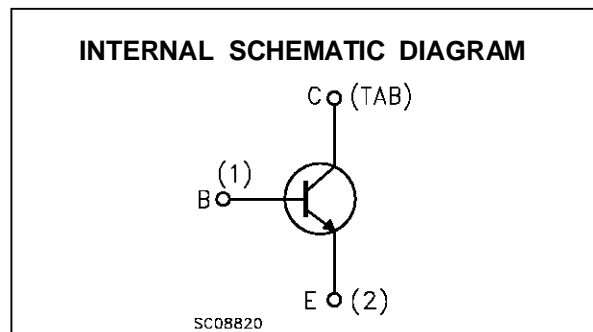
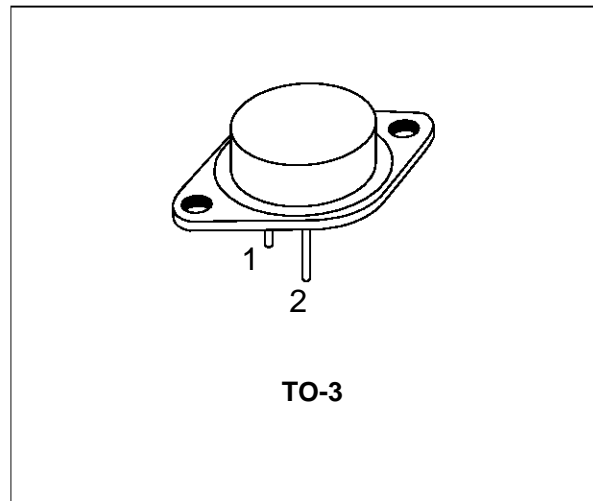


## HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

**DESCRIPTION**

The BUX22 is a silicon multiepitaxial planar NPN transistor in modified 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 ( $I_E = 0$ )	300	V
$V_{CEX}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )	300	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	250	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	40	A
$I_{CM}$	Collector Peak Current ( $t_p = 10$ ms)	50	A
$I_B$	Base Current	8	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^\circ C$	350	W
$T_{stg}$	Storage Temperature	-65 to 200	$^\circ C$
$T_j$	Max Operating Junction Temperature	200	$^\circ C$

## BUX22

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.5	°C/W
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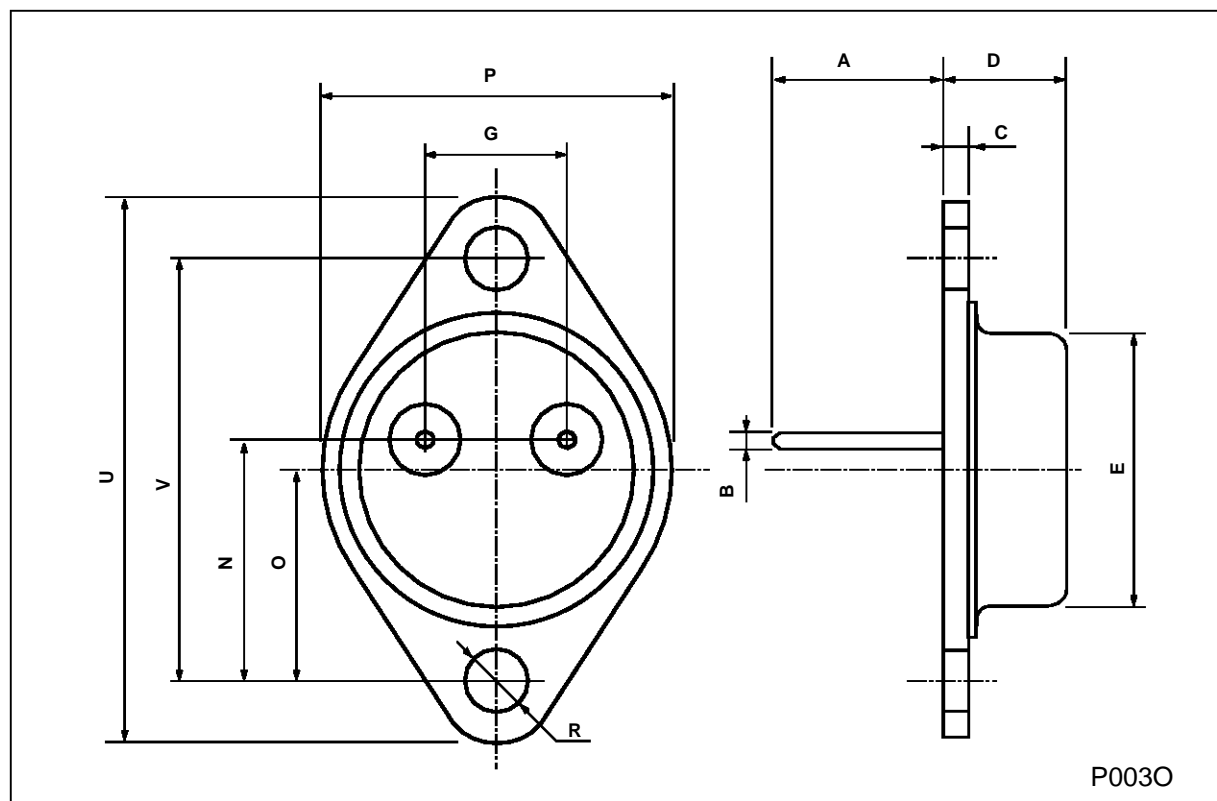
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 200\text{ V}$			3	mA
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = 300\text{ V}$ $T_{case} = 125\text{ °C}$ $V_{CE} = 300\text{ V}$			3	mA
		$V_{BE} = -1.5\text{ V}$ $V_{BE} = -1.5\text{ V}$			12	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5\text{ V}$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{ mA}$	250			V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	$I_E = 50\text{ mA}$	7			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{ A}$ $I_C = 20\text{ A}$		0.2 0.32	1 1.5	V V
		$I_B = 1\text{ A}$ $I_B = 2.5\text{ A}$				
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 20\text{ A}$		1.1	1.5	V
		$I_B = 2.5\text{ A}$				
$h_{FE*}$	DC Current Gain	$I_C = 10\text{ A}$ $I_C = 20\text{ A}$	20 10		60	
		$V_{CE} = 4\text{ V}$ $V_{CE} = 4\text{ V}$				
$I_{S/b}$	Second Breakdown Collector Current	$V_{CE} = 140\text{ V}$ $V_{CE} = 20\text{ V}$	0.15 17.5			A A
		$t = 1\text{ s}$ $t = 1\text{ s}$				
$f_T$	Transistor Frequency	$V_{CE} = 15\text{ V}$ $f = 10\text{ MHz}$	10			MHz
		$I_C = 2\text{ A}$				
$t_{on}$	Turn-on Time	$I_C = 20\text{ A}$ $V_{CC} = 100\text{ V}$		0.22	1.3	$\mu\text{s}$
		$I_{B1} = 2.5\text{ A}$				
$t_s$	Storage Time	$I_C = 20\text{ A}$		1.5	2	$\mu\text{s}$
$t_f$	Fall Time	$I_{B2} = -2.5\text{ A}$		0.17	0.5	$\mu\text{s}$
		$V_{CC} = 100\text{ V}$				
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 250\text{ V}$ $L = 500\text{ }\mu\text{H}$	25			A

\* Pulsed: Pulse duration = 300 $\mu\text{s}$ , duty cycle  $\leq 2\%$

## TO-3 (S) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	1.47		1.60	0.058		0.063
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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