



**BUX22**

## HIGH CURRENT NPN SILICON TRANSISTOR

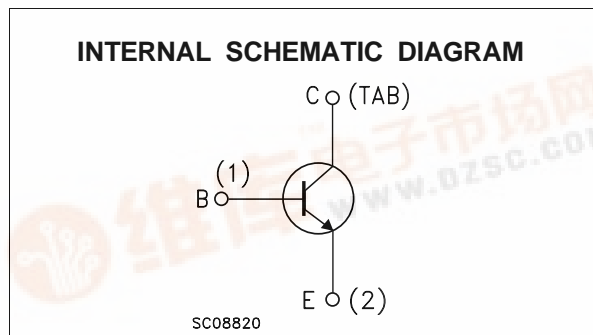
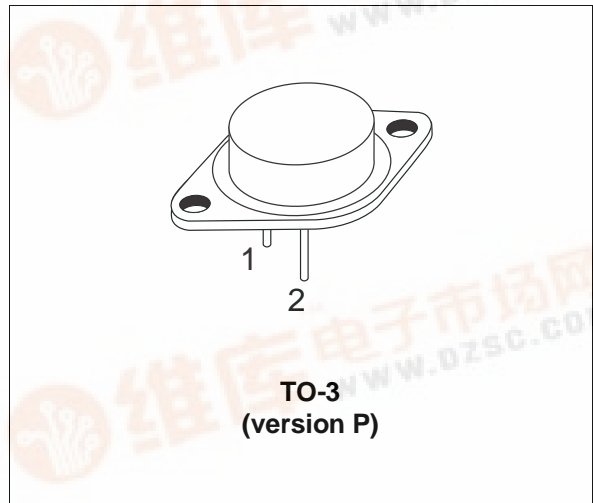
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

### APPLICATIONS

- MOTOR CONTROL
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- HIGH POWER TO-3 PACKAGE

### 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 $T_{case} \leq 25$ °C	350	W
$T_{stg}$	Storage Temperature	-65 to 200	°C
$T_j$	Max Operating Junction Temperature	200	°C

## BUX22

### THERMAL DATA

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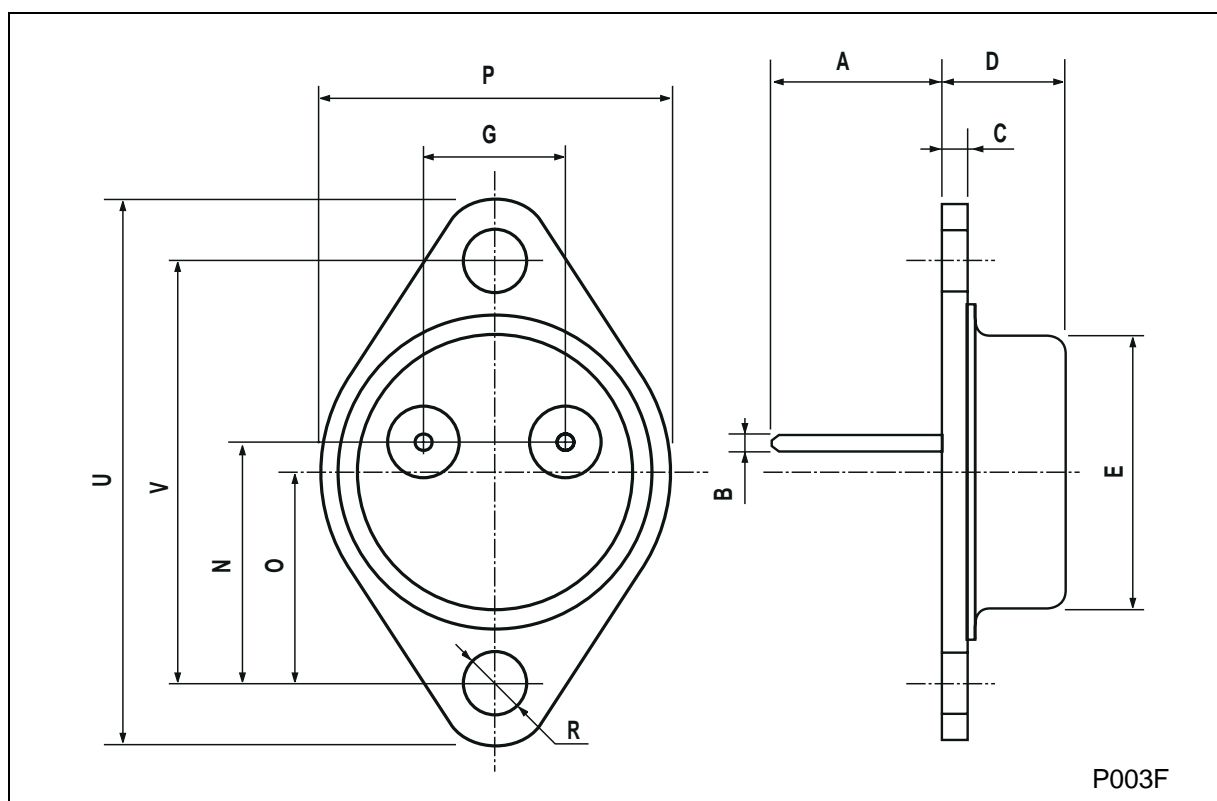
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

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	$V_{CE} = 300\text{ V}$ $T_{case} = 125^{\circ}\text{C}$			3	mA	
		$V_{CE} = 300\text{ V}$			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	$I_C = 10\text{ A}$		0.2	1	V	
		$I_C = 20\text{ A}$	$I_B = 1\text{ A}$ $I_B = 2.5\text{ A}$	0.32	1.5	V	
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 20\text{ A}$		1.1	1.5	V	
$h_{FE*}$	DC Current Gain	$I_C = 10\text{ A}$	$V_{CE} = 4\text{ V}$	20		60	
		$I_C = 20\text{ A}$	$V_{CE} = 4\text{ V}$	10			
$I_{S/b}$	Second Breakdown Collector Current	$V_{CE} = 140\text{ V}$	$t = 1\text{ s}$	0.15		A	
		$V_{CE} = 20\text{ V}$	$t = 1\text{ s}$	17.5		A	
$f_T$	Transistor Frequency	$V_{CE} = 15\text{ V}$ $f = 10\text{ MHz}$	$I_C = 2\text{ A}$	10		MHz	
$t_{on}$	Turn-on Time	$I_C = 20\text{ A}$ $V_{CC} = 100\text{ V}$	$I_{B1} = 2.5\text{ A}$		0.22	1.3	$\mu\text{s}$
$t_s$ $t_f$	Storage Time Fall Time	$I_C = 20\text{ A}$	$I_{B1} = 2.5\text{ A}$		1.5	2	$\mu\text{s}$
		$I_{B2} = -2.5\text{ A}$	$V_{CC} = 100\text{ V}$		0.17	0.5	$\mu\text{s}$
	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 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
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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