

## HIGH CURRENT NPN SILICON TRANSISTOR

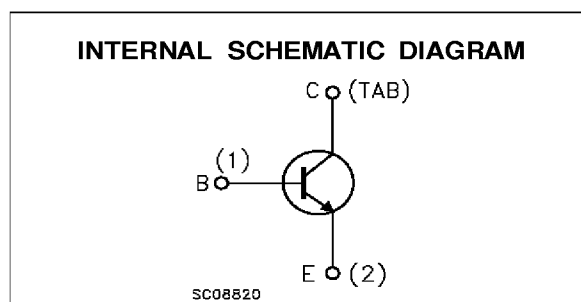
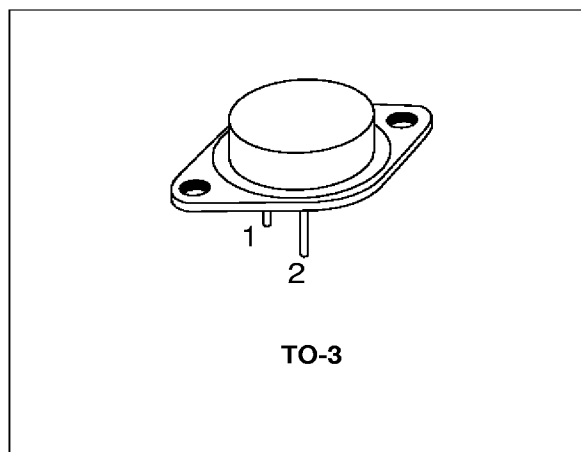
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

**APPLICATIONS**

- MOTOR CONTROL
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

**DESCRIPTION**

The BUX41 is a silicon multi-epitaxial 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 ( $I_E = 0$ )	250	V
$V_{CEX}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )	250	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	200	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	15	A
$I_{CM}$	Collector Peak Current ( $t_P = 10$ ms)	20	A
$I_B$	Base Current	3	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25$ °C	120	W
$T_{stg}$	Storage Temperature	-65 to 200	°C
$T_j$	Max Operating Junction Temperature	200	°C

# BUX41

## 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 ( $I_B = 0$ )	$V_{CE} = 160 V$			1	mA	
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = 250 V$ $T_{case} = 125^{\circ}C$			1	mA	
		$V_{CE} = 250 V$ $V_{BE} = -1.5V$			5	mA	
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 V$			1	mA	
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200 mA$	200			V	
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	$I_E = 50 mA$	7			V	
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 5 A$ $I_C = 8 A$	$I_B = 0.5 A$ $I_B = 1 A$	0.38 0.6	1.2 1.6	V V	
		$I_C = 8 A$	$I_B = 1 A$	1.35	2	V	
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 8 A$		1.35	2	V	
$h_{FE*}$	DC Current Gain	$I_C = 5 A$ $I_C = 8 A$	$V_{CE} = 4 V$ $V_{CE} = 4 V$	15 8		45	
$I_{S/b}$	Second Breakdown Collector Current	$V_{CE} = 30 V$	$t = 1 s$	4		A	
		$V_{CE} = 135 V$	$t = 1 s$	0.15		A	
$f_T$	Transistor Frequency	$V_{CE} = 15 V$ $f = 10 MHz$	$I_C = 1 A$	8		MHz	
$t_{on}$	Turn-on Time	$I_C = 8 A$ $V_{CC} = 150 V$	$I_{B1} = 1 A$		0.28	1	$\mu s$
$t_s$ $t_f$	Storage Time	$I_C = 8 A$	$I_{B1} = 1 A$		1.2	1.7	$\mu s$
	Fall Time	$I_{B2} = -1 A$	$V_{CC} = 150V$		0.25	0.8	$\mu s$
	Clamped $E_{S/b}$ Collector Current	$V_{clamp} = 200 V$ $L = 500 \mu H$		8		A	

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

