



NPN BUX39

HIGH CURRENT, HIGH SPEED, HIGH POWER TRANSISTOR

The BUX39 is silicon multi-epitaxial planar NPN transistor in Jedec TO-3. They are intended for use in switching and linear applications in military and industrial equipment.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	90 V
V_{CBO}	Collector-Base Voltage	$I_E = 0$	120 V
V_{EBO}	Emitter-Base Voltage	$I_C = 0$	7 V
V_{CEX}	Collector-Emitter Voltage	$V_{BE} = -1.5V$	120 V
I_C	Collector Current		30 A
I_{CM}	Collector Peak Current	$t_p = 10ms$	40 A
I_B	Base Current		6 A
P_t	Total Power Dissipation	@ $T_C = 25^\circ$	120 Watts
T_J	Junction Temperature		200 $^\circ C$
T_{Stg}	Storage Temperature		-65 to +200 $^\circ C$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case	1.46	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

$T_C = 25^\circ C$ unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (1)	$I_C = 200\text{ mA}$	90	-	-	V
V_{EBO}	Emitter-Base Voltage	$I_C = 0A, I_E = 50\text{ mA}$	7	-	-	V
I_{CEO}	Collector Cutoff Current	$V_{CE} = 70\text{ V}, I_B = 0A$	-	-	1	mA
I_{CEX}	Collector Cutoff Current	$V_{CE} = V_{CEX}, V_{BE} = -1.5V$	-	-	1	mA
		$V_{CE} = V_{CEX}, V_{BE} = -1.5V, T_{case} = 125^\circ C$	-	-	5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5.0\text{ V}, I_C = 0$	-	-	1	mA

NPN BUX39

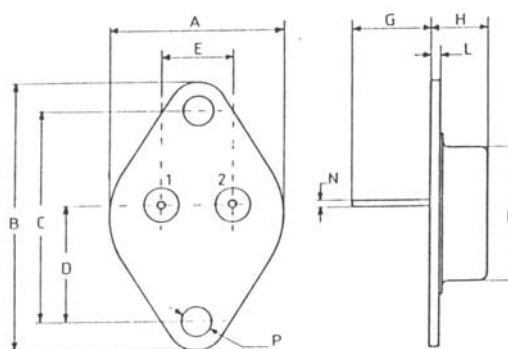
h_{FE}	DC Current Gain (1)	I _C =12 A , V _{CE} =4.0 V	15	-	45	-
		I _C =20 A , V _{CE} =4.0 V	8	-	-	
V_{CE(SAT)}	Collector-Emitter saturation Voltage (1)	I _C =12 A , I _B =1.2 A	-	0.7	1.2	V
		I _C =20 A , I _B =2.5 A	-	1.25	1.6	
V_{BE(SAT)}	Base-Emitter saturation Voltage (1)	I _C =20 A , I _B =2.5 A	-	2.1	2.5	

Symbol	Ratings	Test Condition(s)Sec	Min	Typ	Mx	Unit
I_{S/B}	Second breakdown collector current	V _{CE} =30 V , t _s = 1 s	4	-	-	A
		V _{CE} =135 V , t _s = 1 s	1	-	-	
f_T	Transition frequency	V _{CE} =15 V , I _C =1 A , f=4 MHz	8	-	-	MHz
t_{on}	Turn-on time	I _C =8 A , I _B =1 A , V _{CC} =150 V	-	0.8	1.2	μs
t_s	Storage time	I _C =8 A , V _{CC} =150 V I _{B1} = -I _{B2} =1 A	-	0.55	1	
t_f	File time		-	.15	0.25	

(1) Pulse Duration = 300 μs, Duty Cycle <= 2%

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector

Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.
Data are subject to change without notice.