



## NPN BUX11

### HIGH CURRENT, HIGH SPEED, HIGH POWER TRANSISTOR

The BUX11 is silicon multi-epitaxial planar NPN transistors in Jedec TO-3. They are intended for use in switching and linear applications in military and industrial equipments.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	200	V
$V_{CBO}$	Collector-Base Voltage	$I_E = 0$	250	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	7.0	V
$V_{CEX}$	Collector-Emitter Voltage	$V_{BE} = -1.5V$	250	V
$I_C$	Collector Current		20	A
$I_{CM}$	Collector Peak Current	$t_p = 10ms$	25	A
$I_B$	Base Current		4	A
$P_t$	Total Power Dissipation	@ $T_C = 25^\circ$	150	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	1.17	$^\circ C/W$

## NPN BUX11

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage (1)	$I_C=200\text{ mA}$	200	-	-	V
$V_{EB0(SUS)}$	Emitter-Base Breakdown Voltage (1)	$I_C=0\text{ A}, I_E=50\text{ mA}$	7	-	-	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=160\text{ V}, I_B=0\text{ A}$	-	-	1.5	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=V_{CEX}, V_{BE}=-1.5\text{ V}$	-	-	1.5	mA
		$V_{CE}=V_{CEX}, V_{BE}=-1.5\text{ V}, T_{case}=125^\circ\text{C}$	-	-	6	
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5.0\text{ V}, I_C=0$	-	-	1	

$h_{FE}$	DC Current Gain (1)	$I_C=6\text{ A}, V_{CE}=2.0\text{ V}$	20	-	60	-
		$I_C=12\text{ A}, V_{CE}=4.0\text{ V}$	10	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	$I_C=6\text{ A}, I_B=0.6\text{ A}$	-	0.3	0.6	V
		$I_C=12\text{ A}, I_B=1.5\text{ A}$	-	0.6	1.5	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (1)	$I_C=12\text{ A}, I_B=1.5\text{ A}$	-	1.3	1.5	

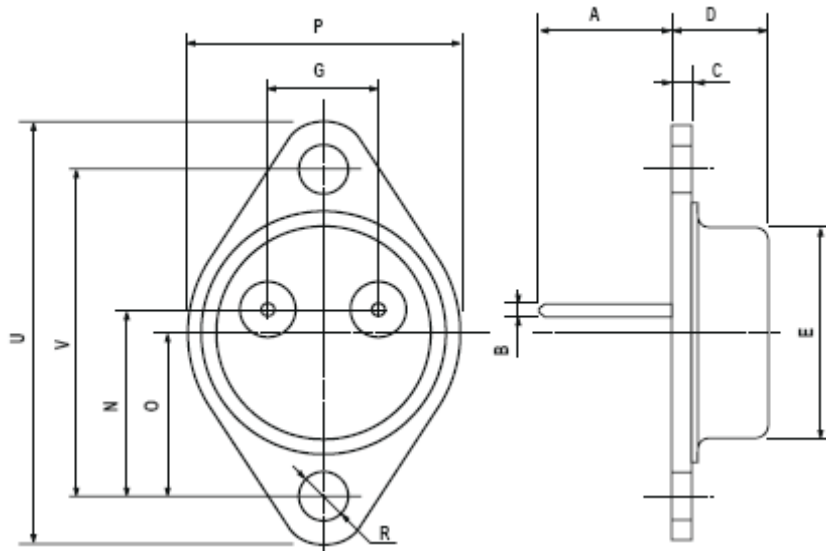
Symbol	Ratings	Test Condition(s)Sec	Min	Typ	Mx	Unit
$I_{S/B}$	Second breakdown collector current	$V_{CE}=30\text{ V}, t_s=1\text{ s}$	5	-	-	A
		$V_{CE}=140\text{ V}, t_s=1\text{ s}$	0.15	-	-	
$E_{S/B}$	Clamped $E_{S/B}$ Collector current	$V_{clamp}=200\text{ V}, L=500\text{ }\mu\text{H}$	12	-	-	
$f_T$	Transition frequency	$V_{CE}=15\text{ V}, I_C=1\text{ A}, f=10\text{ MHz}$	8	-	-	MHz
$t_{on}$	Turn-on time	$I_C=12\text{ A}, I_B=1.5\text{ A}, V_{CC}=150\text{ V}$	-	0.3	1.0	$\mu\text{s}$
$t_s$	Storage time	$I_C=12\text{ A}, V_{CC}=150\text{ V}$	-	1.2	1.8	
$t_f$	File time	$I_{B1}=-I_{B2}=1.5\text{ A}$	-	0.24	0.4	

(1) Pulse Duration = 300  $\mu\text{s}$ , Duty Cycle  $\leq$  2%

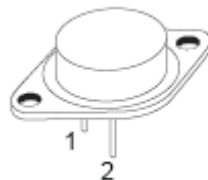
## NPN BUX11

### MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)			
	min	typ	max
A	11	-	13.10
B	0.97	-	1.15
C	1.5	-	1.65
D	8.32	-	8.92
F	19	-	20
G	10.70	-	11.1
N	16.50	-	17.20
P	25	-	26
R	4	-	4.09
U	38.50	-	39.30
V	30	-	30.30



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.