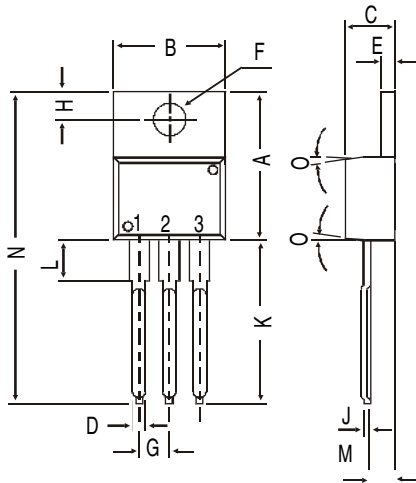
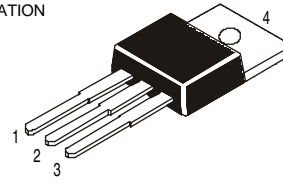


**TO-220 Plastic Package**

**BUX84, BUX84A**

**BUX84, 84A NPN PLASTIC POWER TRANSISTORS**  
*High Voltage, High Speed Power Switching Applications*

**PIN CONFIGURATION**  
 1. BASE  
 2. COLLECTOR  
 3. EMITTER  
 4. COLLECTOR



DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

All dimensions in mm.

**ABSOLUTE MAXIMUM RATINGS**

	<b>84</b>	<b>84A</b>
Collector-emitter voltage ( $V_{BE} = 0$ )	$V_{CES}$ max. 800	800 V
Collector-emitter voltage (open base)	$V_{CEO}$ max. 400	400 V
Collector current	$I_C$ max.	2.0 A
Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$ max.	40 W
Junction temperature	$T_j$ max.	150 $^\circ\text{C}$
Collector-emitter saturation voltage $I_C = 0.3\text{A}; I_B = 30\text{ mA}$	$V_{CEsat}$ max. 1.5	0.8 V
D.C. current gain $I_C = 0.1\text{ A}; V_{CE} = 5\text{ V}$	$h_{FE}$ min.	30

**RATINGS (at  $T_A=25^\circ\text{C}$  unless otherwise specified)**

*Limiting values*

	<b>84</b>	<b>84A</b>
Collector-emitter voltage ( $V_{BE} = 0$ )	$V_{CES}$ max. 800	800 V
Collector-emitter voltage (open base)	$V_{CEO}$ max. 400	400 V
Emitter-base voltage (open collector)	$V_{EBO}$ max.	5.0 V

## BUX84, BUX84A

Collector current	$I_C$	max.	2.0	A
Collector current (Peak value)	$I_{CM}$	max.	3.0	A
Base current	$I_B$	max.	0.75	A
Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$	max.	40	W
Junction temperature	$T_j$	max.	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-65 to +150	$^\circ\text{C}$

### THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	=	3.125	$^\circ\text{C/W}$
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### CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$  unless otherwise specified

			84	84A
Collector cutoff current				
$V_{BE} = 0$ ; $V_{CE} = \text{Rated } V_{CES}$	$I_{CES}$	max.	0.2	mA
$V_{BE} = 0$ ; $V_{CE} = \text{Rated } V_{CES}$ ; $T_C = 125^\circ\text{C}$	$I_{CES}$	max.	1.5	mA
Emitter cut-off current				
$I_C = 0$ ; $V_{EB} = 5\text{V}$	$I_{EBO}$	max.	1.0	mA
Breakdown voltages				
$I_C = 100\text{ mA}$ ; $I_B = 0$	$V_{CEO(sus)}^*$	min.	400	V
$I_C = 1\text{ mA}$ ; $V_{BE} = 0$	$V_{CES}$	min.	800	V
$I_E = 1\text{ mA}$ ; $I_C = 0$	$V_{EBO}$	min.	5.0	V
Saturation voltages				
$I_C = 0.3\text{ A}$ ; $I_B = 30\text{ mA}$	$V_{CEsat}^*$	max.	1.5	0.8 V
$I_C = 1\text{ A}$ ; $I_B = 0.2\text{ A}$	$V_{CEsat}^*$	max.	3.0	1.0 V
	$V_{BEsat}^*$	max.	1.1	V
D.C. current gain				
$I_C = 0.1\text{ A}$ ; $V_{CE} = 5\text{ V}$	$h_{FE}^*$	min.	30	
Transition frequency $f = 1\text{ MHz}$				
$I_C = 0.2\text{ A}$ ; $V_{CE} = 10\text{ V}$	$f_T$	typ.	20	MHz

### Switching time

$I_C = 1\text{ A}$ ; $V_{CC} = 250\text{ V}$				
$I_B = 0.2\text{ A}$ ; $-I_B = 0.4\text{ A}$				
Turn on time	$t_{on}$	max	0.5	$\mu\text{s}$
Storage time	$t_s$	max.	3.5	$\mu\text{s}$
Fall time	$t_f$	max.	1.4	$\mu\text{s}$

\* Pulsed: pulse duration = 300  $\mu\text{s}$ ; duty cycle  $\leq 2\%$ .

## Notes

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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