

## NPN BUX84 – BUX85

### SILICON DIFFUSED POWER TRANSISTORS

The BUX84-BUX85 are NPN transistors mounted in Jedec TO-220 plastic package. They are designed for high voltage, high speed power switching applications like converters, inverters, switching regulators, motor control systems.  
Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CEO}$	Collector-Emitter Voltage	BUX84	400	V	
		BUX85	450		
$V_{CESM}$	Collector-Emitter Voltage (open base)	BUX84	800	V	
		BUX85	1000		
$I_C$	Collector Current	$I_C$	BUX84	2	A
			BUX85		
		$I_{CM}$	BUX84	3	A
			BUX85		
$I_B$	Base Current	BUX84	0.75	A	
		BUX85			
$I_{BM}$	Base Current (peak value)	BUX84	1	A	
		BUX85			
$-I_{BM}$	Reverse Base Current (peak value) (1)	BUX84	1	A	
		BUX85			
$P_D$	Total Device Dissipation	@ $T_C = 50^\circ$	BUX84	40	Watts
			BUX85		
$T_J$	Junction Temperature	BUX84	150	$^\circ\text{C}$	
		BUX85			
$T_{Stg}$	Storage Temperature range	BUX84	-65 to +150	$^\circ\text{C}$	
		BUX85			

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-a}$	Thermal Resistance, Junction to mounting base	70	K/W
$R_{thJ-mb}$	Thermal Resistance, Junction to ambient in free air	2.5	K/W

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### ELECTRICAL CHARACTERISTICS (3)

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$I_{CES}$	Collector Cutoff Current(2)	$V_{CEM} = V_{CESmax}$ $V_{BE} = 0V$	BUX84	-	-	0.2	mA
			BUX85	-	-	0.2	
		$V_{CEM} = V_{CESmax}$ $V_{BE} = 0V$ $T_j = 125^\circ C$	BUX84	-	-	1.5	
			BUX85	-	-	1.5	
$I_{EBO}$	Emitter Cutoff Current	$V_{BE} = 5.0 V, I_C = 0$	BUX84	-	-	1	mA
			BUX85	-	-	1	
$V_{CEOsust}$	Collector-Emitter sustaining Voltage	$I_C = 100 mA, I_{Boff} = 0$ $L = 25mH$	BUX84	400	-	-	V
			BUX85	450	-	-	
$h_{FE}$	DC Current Gain	$I_C = 0.1 A, V_{CE} = 5 V$	BUX84	30	50	-	-
			BUX85	30	50	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 0.3 A, I_B = 30 mA$	BUX84	-	-	0.8	V
			BUX85	-	-	0.8	
		$I_C = 1 A, I_B = 0.2 A$	BUX84	-	-	1	
			BUX85	-	-	1	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 1 A, I_B = 0.2 A$	BUX84	-	-	1.1	-
			BUX85	-	-	1.1	
$f_T$	Transition frequency	$I_C = 0.5 A, V_{CE} = 10 V$ $f = 1MHz$	BUX84	4	20	-	MHz
			BUX85	4	20	-	
$t_{on}$	Turn-on time	$I_C = 1 A, V_{CC} = 250 V$ $I_{B1} = 0.2A, I_{B2} = 0.4A$	BUX84	-	0.3	0.5	-
			BUX85	-	0.3	0.5	
$T_s$	Storage time	$I_C = 1 A, V_{CC} = 250 V$ $I_{B1} = 0.2A, I_{B2} = 0.4$	BUX84	-	2	3.5	-
			BUX85	-	2	3.5	
$T_f$	Fall Time	$I_C = 1 A, V_{CC} = 250 V$ $I_{B1} = 0.2A, I_{B2} = 0.4$	BUX84	-	0.4	-	μs
			BUX85	-	0.4	-	
$T_f$	Fall Time	$I_C = 1 A, V_{CC} = 250 V$ $I_{B1} = 0.2A, I_{B2} = 0.4$ $T_C = 95^\circ$	BUX84	-	-	1.4	-
			BUX85	-	-	1.4	

(1) Turn off current

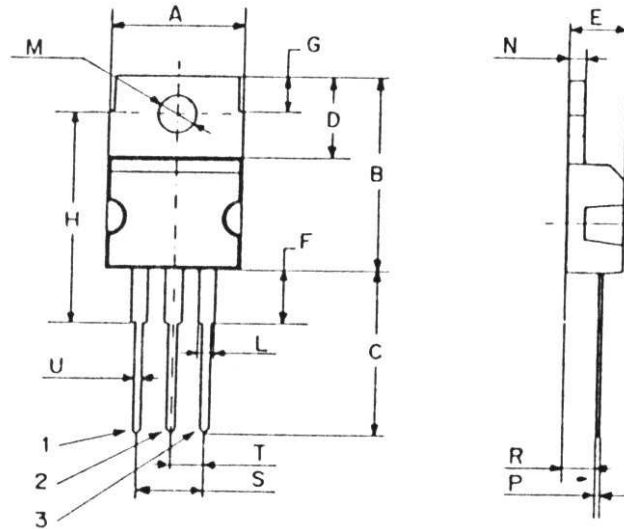
(2) Measured with a half-sinewave (curve tracer)

(3) Puls test : PW = 300μs, Duty Cycle < 2%

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### MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

Revised September 2012

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