

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				
		$V_{CEM} = V_{CESmax}$ $V_{BE} = 0V$ $T_j = 125^\circ C$	BUX84	-	-	1.5	
			BUX85				
I_{EBO}	Emitter Cutoff Current	$V_{BE} = 5.0 V, I_C = 0$	BUX84	-	-	1	mA
			BUX85				
$V_{CEOsust}$	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				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 0.3 A, I_B = 30 mA$	BUX84	-	-	0.8	V
			BUX85				
		$I_C = 1 A, I_B = 0.2 A$	BUX84	-	-	1	
			BUX85				
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 1 A, I_B = 0.2 A$	BUX84	-	-	1.1	
			BUX85				
f_T	Transition frequency	$I_C = 0.5 A, V_{CE} = 10 V$ $f = 1MHz$	BUX84	4	20	-	MHz
			BUX85				
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	μs
			BUX85				
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				
T_f	Fall Time	$I_C = 1 A, V_{CC} = 250 V$ $I_{B1} = 0.2A, I_{B2} = 0.4$	BUX84	-	0.4	-	
			BUX85				
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) Turn off current

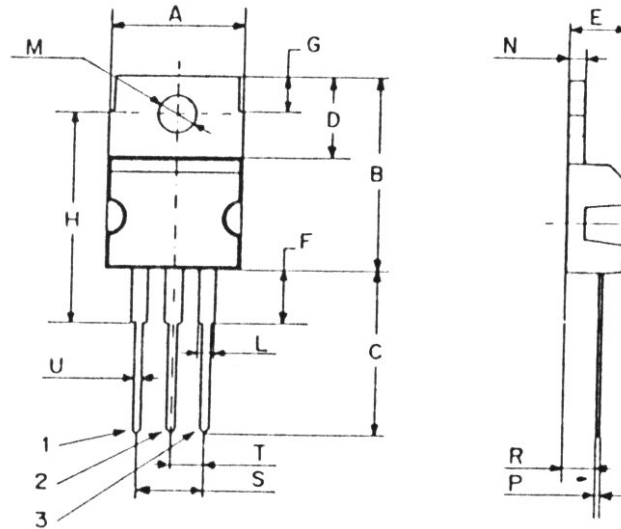
(2) Measured with a half-sinewave (curve tracer)

(3) Puls test : PW = 300 μs , 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

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