

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° 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 =0.2A	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°	BUX84	-	-	1.4	
			BUX85				

(1) Turn off current

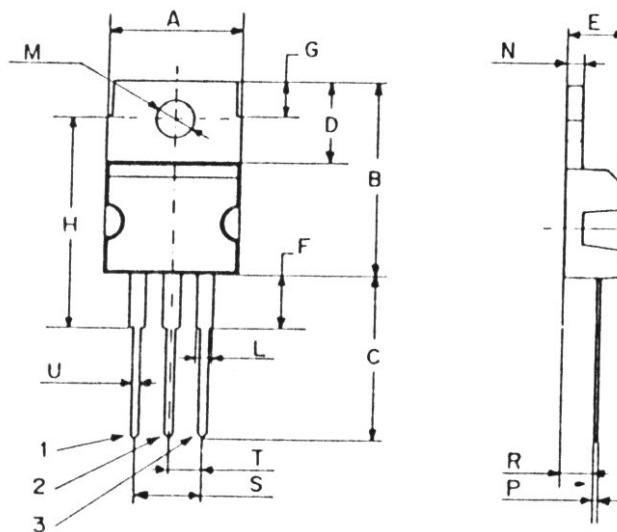
(2) Measured with a half-sinewave (curve tracer)

(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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