- 40 W at 25°C Case Temperature
- 2 A Continuous Collector Current
- 3 A Peak Collector Current
- Typical t_f = 200 ns at 25°C

TO-220 PACKAGE (TOP VIEW)

3

Pin 2 is in electrical contact with the mounting base.

MDTRACA

absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING	SYMBOL	VALUE	UNIT
Collector-base voltage (I _E = 0)	V _{CBO}	800	V
Collector-emitter voltage (V _{BE} = 0)	V _{CES}	800	V
Collector-emitter voltage (I _B = 0)	V _{CEO}	400	V
Continuous collector current	I _C	2	Α
Peak collector current (see Note 1)	I _{CM}	3	Α
Continuous device dissipation at (or below) 25°C case temperature	P _{tot}	40	W
Operating junction temperature range	T _j	-65 to +150	°C
Storage temperature range	T _{stg}	-65 to +150	°C

 $\mathsf{E} \subset$

NOTE 1: This value applies for $t_p \le 2$ ms, duty cycle $\le 2\%$.



BUX84 NPN SILICON POWER TRANSISTOR

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electrical characteristics at 25°C case temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT	
V _{CEO(sus)}	Collector-emitter sustaining voltage	I _C =	0.1 A	L = 25 mH	(see Note 2)	400			V
I _{CES}	Collector-emitter cut-off current		800 V 800 V	$V_{BE} = 0$ $V_{BE} = 0$	T _C = 125°C			0.2 1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =	5 V	I _C = 0				1	mA
h _{FE}	Forward current transfer ratio	V _{CE} =	5 V	I _C = 0.1 A	(see Notes 3 and 4)		35		
V _{CE(sat)}	Collector-emitter saturation voltage	I _B = I _B =	0.03 A 0.2 A	$I_C = 0.3 A$ $I_C = 1 A$	(see Notes 3 and 4)			0.8 1	V
V _{BE(sat)}	Base-emitter saturation voltage	I _B =	0.2 A	I _C = 1 A	(see Notes 3 and 4)			1.1	V
f _t	Current gain bandwidth product	V _{CE} =	10 V	I _C = 0.2 A			12		MHz
C _{ob}	Output capacitance	V _{CB} =	20 V	I _E = 0	f = 0.1 MHz		60		pF

NOTES: 2. Inductive loop switching measurement.

- 3. These parameters must be measured using pulse techniques, t_p = 300 μ s, duty cycle \leq 2%.
- 4. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.
- 5. To obtain f_t the $[h_{FE}]$ response is extrapolated at the rate of -6 dB per octave from f = 1 MHz to the frequency at which $[h_{FE}] = 1$.

thermal characteristics

PARAMETER			TYP	MAX	UNIT
$R_{\theta JC}$	Junction to case thermal resistance			2.5	°C/W

resistive-load-switching characteristics at 25°C case temperature (unless otherwise noted)

	PARAMETER		TEST CONDITIONS †		MIN	TYP	MAX	UNIT
t _{on}	Turn on time	Ι. – 1 Δ	Ι02Δ	Ι – -0.4.Δ		0.25	0.5	μs
t _s	Storage time	$I_{\rm C} = 1 \text{ A}$ $V_{\rm CC} = 250 \text{ V}$	I _{B(on)} = 0.2 A (see Figures 1 and 2)	$I_{B(off)} = -0.4 A$		1.8		μs
t _f	Fall time					0.2		μs
t _f	Fall time	$I_C = 1 \text{ A}$ $V_{CC} = 250 \text{ V}$	$I_{B(on)} = 0.2 \text{ A}$ $T_{C} = 95^{\circ}\text{C}$	$I_{B(off)} = -0.4 A$			0.4	μs

[†] Voltage and current values shown are nominal; exact values vary slightly with transistor parameters.

PARAMETER MEASUREMENT INFORMATION

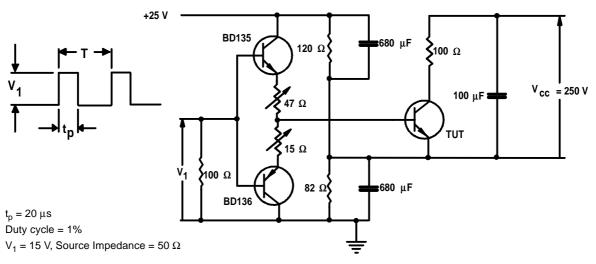


Figure 1. Resistive-Load Switching Test Circuit

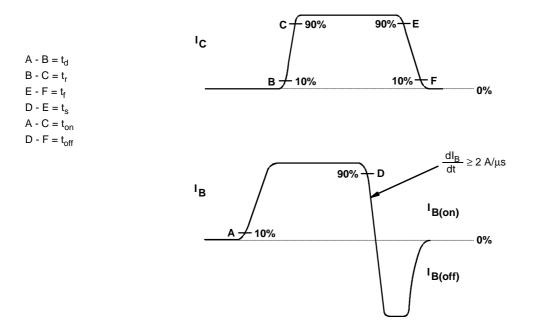
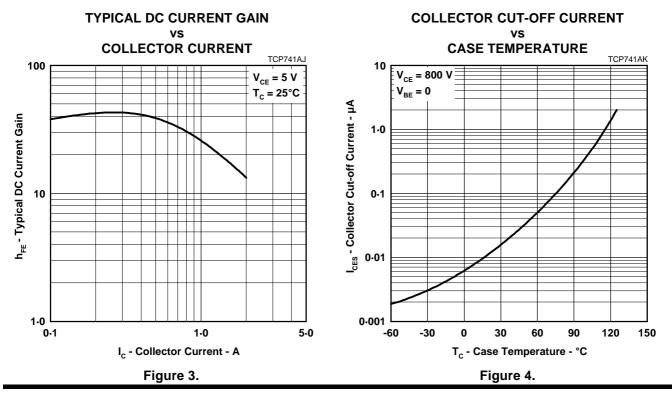
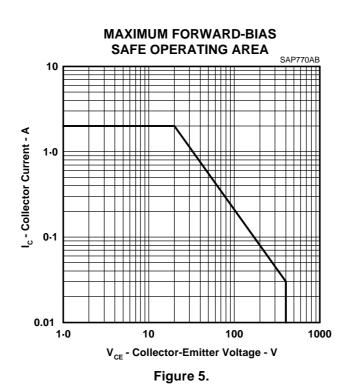


Figure 2. Resistive-Load Switching Waveforms

TYPICAL CHARACTERISTICS



MAXIMUM SAFE OPERATING REGIONS



PRODUCT INFORMATION

THERMAL INFORMATION

THERMAL RESPONSE JUNCTION TO CASE

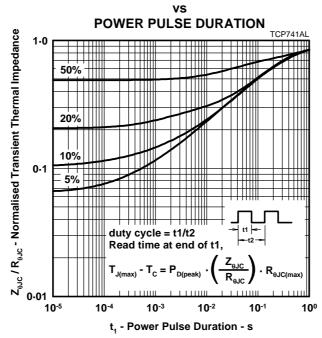


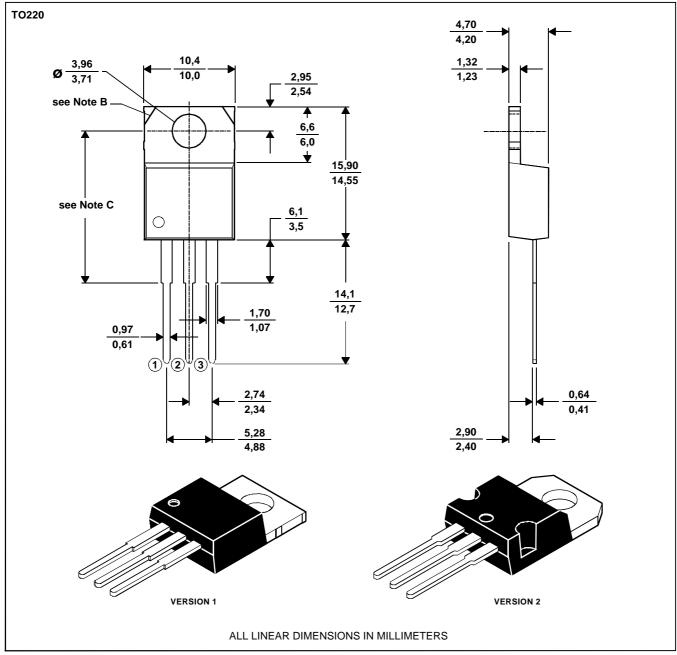
Figure 6.

MECHANICAL DATA

TO-220

3-pin plastic flange-mount package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.



NOTES: A. The centre pin is in electrical contact with the mounting tab.

B. Mounting tab corner profile according to package version.

C. Typical fixing hole centre stand off height according to package version. Version 1, 18.0 mm. Version 2, 17.6 mm. **MDXXBE**

PRODUCT INFORMATION

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