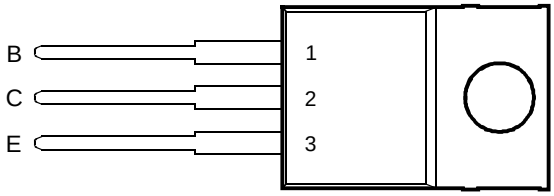
BDX34, BDX34A, BDX34B, BDX34C, BDX34D
Transistor de puissance PNP darlington

AUGUST 1993 - REVISED MARCH 1997

- **Transistor complémentaire conçut pour être utilisé avec BDX33, BDX33A, BDX33B, BDX33C and BDX33D**
- **70 W à 25°C Température du boîtier**
- **10 A Courant continu de collecteur**
- **Minimum h_{FE} of 750 at 3 V, 3 A**

Boîtier TO-220
Vue de dessus



La broche 2 est en contact avec le boîtier

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Valeurs limites absolues à une température boîtier de 25°C

Paramètres		Symbole	Valeur	Unité
Tension Collector-base (I_E = 0)	BDX34	V_{CBO}	-45	V
	BDX34A		-60	
	BDX34B		-80	
	BDX34C		-100	
	BDX34D		-120	
Tension Collector-emetteur (I_B = 0)	BDX34	V_{CEO}	-45	V
	BDX34A		-60	
	BDX34B		-80	
	BDX34C		-100	
	BDX34D		-120	
Tension Emetteur-base		V_{EBO}	-5	V
Courant de collecteur en continu		I_C	-10	A
Courant de base en continu		I_B	-0.3	A
Continuous device dissipation at (or below) 25°C case temperature (see Note 1)		P_{tot}	70	W
Continuous device dissipation at (or below) 25°C free air temperature (see Note 2)		P_{tot}	2	W
Température de fonctionnement à l'air libre		T_J	-65 to +150	°C
Tempétature de stockage		T_{stg}	-65 to +150	°C
Température de fonctionnement à l'air libre		T_A	-65 to +150	°C

NOTES: 1. Derate linearly to 150°C case temperature at the rate of 0.56 W/°C.
2. Derate linearly to 150°C free air temperature at the rate of 16 mW/°C.

Caractéristiques électriques avec le boîtier à 25°C (sauf indication)

Paramètres		Conditions				MIN	TYP	MAX	UNITE
$V_{(BR)CEO}$	Tension de claquage Collecteur-emetteur	I_C = -100 mA	I_B = 0	(Voir Note 3)	BDX34	-45			V
					BDX34A	-60			
					BDX34B	-80			
					BDX34C	-100			
					BDX34D	-120			
I_{CEO}	Courant de bloquage Collecteur-emetteur	V_{CE} = -30 V	I_B = 0		BDX34			-0.5	mA
		V_{CE} = -30 V	I_B = 0		BDX34A			-0.5	
		V_{CE} = -40 V	I_B = 0		BDX34B			-0.5	
		V_{CE} = -50 V	I_B = 0		BDX34C			-0.5	
		V_{CE} = -60 V	I_B = 0		BDX34D			-0.5	
		V_{CE} = -30 V	I_B = 0	T_C = 100°C	BDX34			-10	
		V_{CE} = -30 V	I_B = 0	T_C = 100°C	BDX34A			-10	
		V_{CE} = -40 V	I_B = 0	T_C = 100°C	BDX34B			-10	
		V_{CE} = -50 V	I_B = 0	T_C = 100°C	BDX34C			-10	
		V_{CE} = -60 V	I_B = 0	T_C = 100°C	BDX34D			-10	
I_{CBO}	Courant de bloquage au collecteur	V_{CB} = -45 V	I_E = 0		BDX34			-1	mA
		V_{CB} = -60 V	I_E = 0		BDX34A			-1	
		V_{CB} = -80 V	I_E = 0		BDX34B			-1	
		V_{CB} = -100 V	I_E = 0		BDX34C			-1	
		V_{CB} = -120 V	I_E = 0		BDX34D			-1	
		V_{CB} = -45 V	I_E = 0	T_C = 100°C	BDX34			-5	
		V_{CB} = -60 V	I_E = 0	T_C = 100°C	BDX34A			-5	
		V_{CB} = -80 V	I_E = 0	T_C = 100°C	BDX34B			-5	
		V_{CB} = -100 V	I_E = 0	T_C = 100°C	BDX34C			-5	
		V_{CB} = -120 V	I_E = 0	T_C = 100°C	BDX34D			-5	
I_{EBO}	Courant de bloquage à l'émetteur	V_{EB} = -5 V	I_C = 0					-10	mA
h_{FE}	Gain en courant	V_{CE} = -3 V	I_C = -4 A		BDX34	750			
		V_{CE} = -3 V	I_C = -4 A		BDX34A	750			
		V_{CE} = -3 V	I_C = -3 A	(Voir Notes 3 et 4)	BDX34B	750			
		V_{CE} = -3 V	I_C = -3 A		BDX34C	750			
		V_{CE} = -3 V	I_C = -3 A		BDX34D	750			
$V_{BE(on)}$	Tension Base-emitter	V_{CE} = -3 V	I_C = -4 A		BDX34			-2.5	V
		V_{CE} = -3 V	I_C = -4 A		BDX34A			-2.5	
		V_{CE} = -3 V	I_C = -3 A	(Voir Notes 3 et 4)	BDX34B			-2.5	
		V_{CE} = -3 V	I_C = -3 A		BDX34C			-2.5	
		V_{CE} = -3 V	I_C = -3 A		BDX34D			-2.5	
$V_{CE(sat)}$	Tension de saturation Collecteur-emetteur	I_B = -8 mA	I_C = -4 A		BDX34			-2.5	V
		I_B = -8 mA	I_C = -4 A		BDX34A			-2.5	
		I_B = -6 mA	I_C = -3 A	(Voir Notes 3 et 4)	BDX34B			-2.5	
		I_B = -6 mA	I_C = -3 A		BDX34C			-2.5	
		I_B = -6 mA	I_C = -3 A		BDX34D			-2.5	
V_{EC}	Courant direct dans la diode parallèle	I_E = -8 A	I_B = 0					-4	V

NOTES: 3. Ces paramètres sont obtenus en utilisant des impulsions, t_p = 300 µs, rapport cyclique ≤ 2%.
4. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.

thermal characteristics

PARAMETER		MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to case thermal resistance			1.78	°C/W
$R_{\theta JA}$	Junction to free air thermal resistance			62.5	°C/W

resistive-load-switching characteristics at 25°C case temperature

PARAMETER		TEST CONDITIONS †			MIN	TYP	MAX	UNIT
t_{on}	Turn-on time	I_C = -3 A	$I_{B(on)}$ = -12 mA	$I_{B(off)}$ = 12 mA		1		µs
t_{off}	Turn-off time	$V_{BE(off)}$ = 3.5 V	R_L = 10 Ω	t_p = 20 µs, dc ≤ 2%		5		µs

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

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN vs COLLECTOR CURRENT

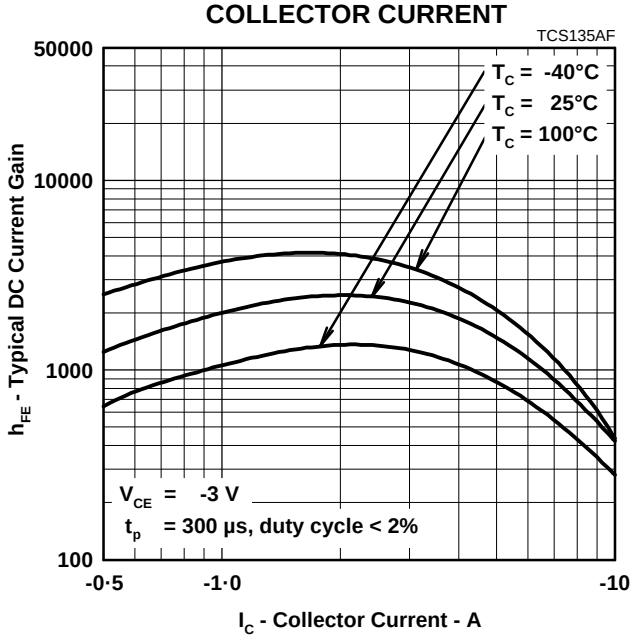

Figure 1.

COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

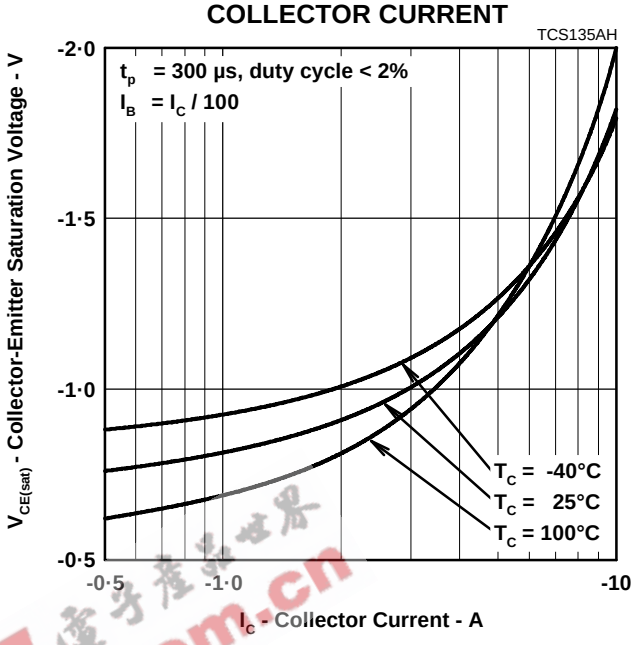

Figure 2.

BASE-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

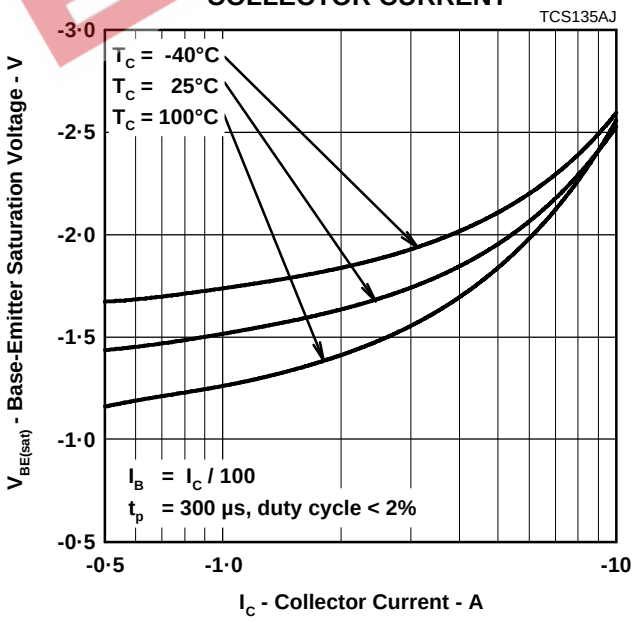

Figure 3.

THERMAL INFORMATION

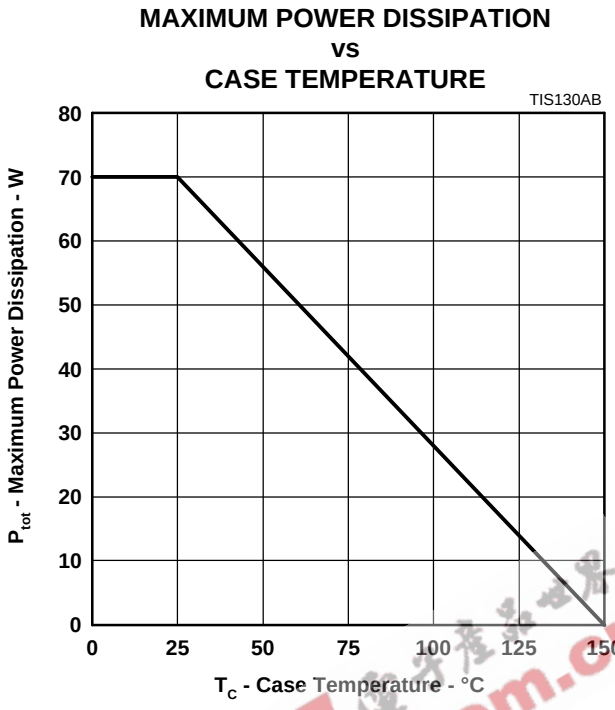

Figure 4.

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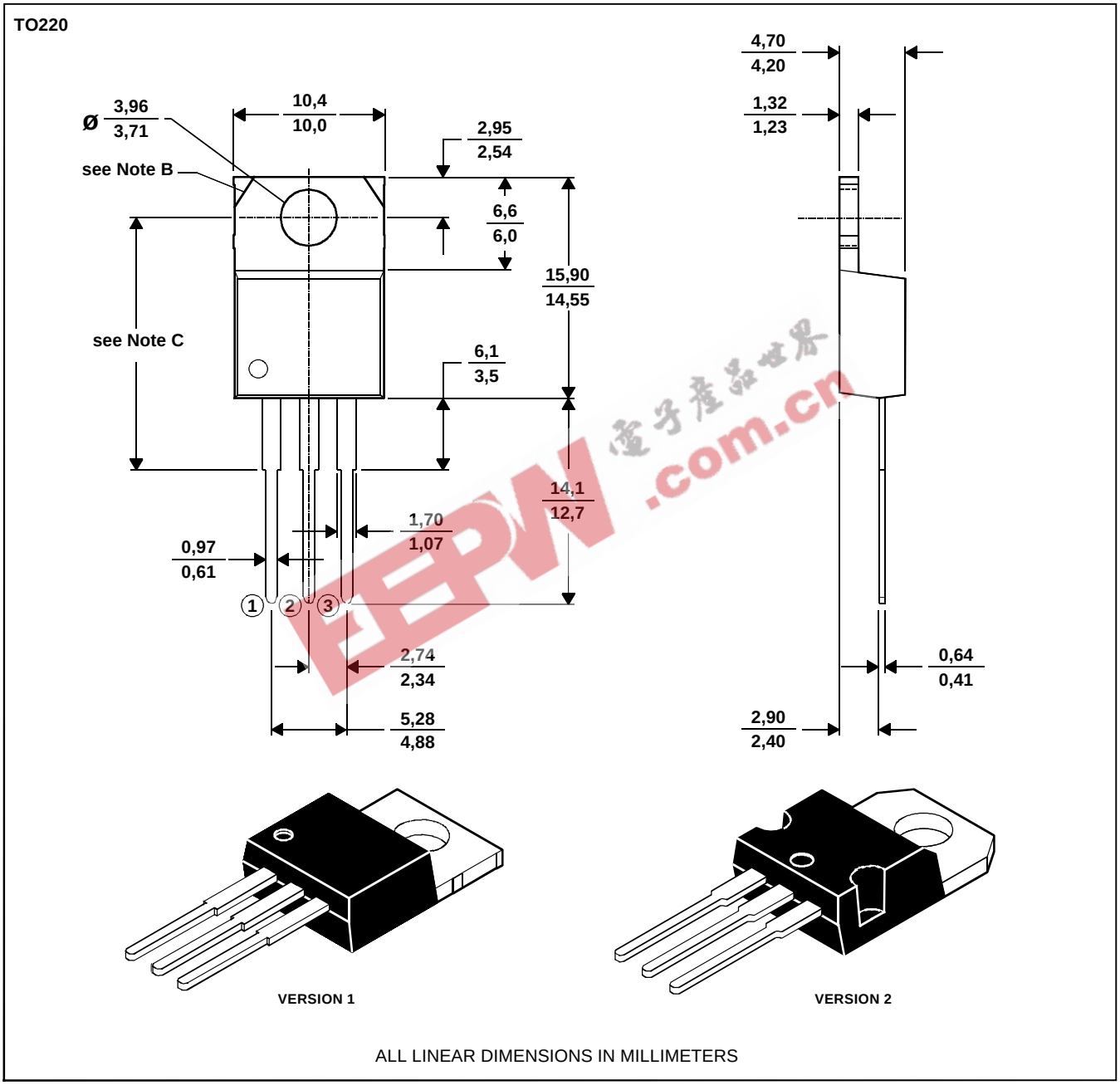
MECHANICAL DATA

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.

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