

# BDX34, BDX34A, BDX34B, BDX34C, BDX34D

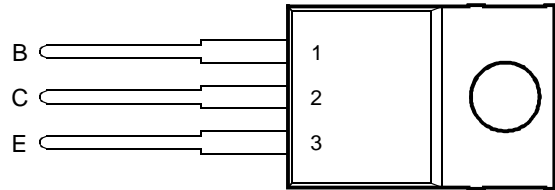
## Transistor de puissance PNP darlington

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- Transistor complémentaire conçu 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

MDTRACA

### 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
Température 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.

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

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

NOTES: 3. Ces paramètres sont obtenus en utilisant des impulsions,  $t_p = 300\text{ }\mu\text{s}$ , rapport cyclique  $\leq 2\%$ .  
4. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.

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## 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	$I_C = -3\text{ A}$	$I_{B(on)} = -12\text{ mA}$	$I_{B(off)} = 12\text{ mA}$		1		μs
$t_{off}$	Turn-off time	$V_{BE(off)} = 3.5\text{ V}$	$R_L = 10\ \Omega$	$t_p = 20\ \mu\text{s}, dc \leq 2\%$		5		μs

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

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TYPICAL CHARACTERISTICS

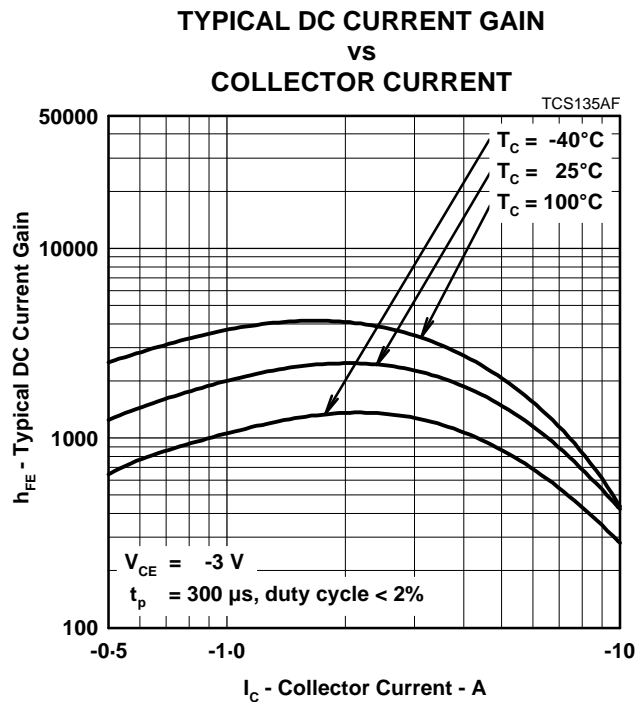


Figure 1.

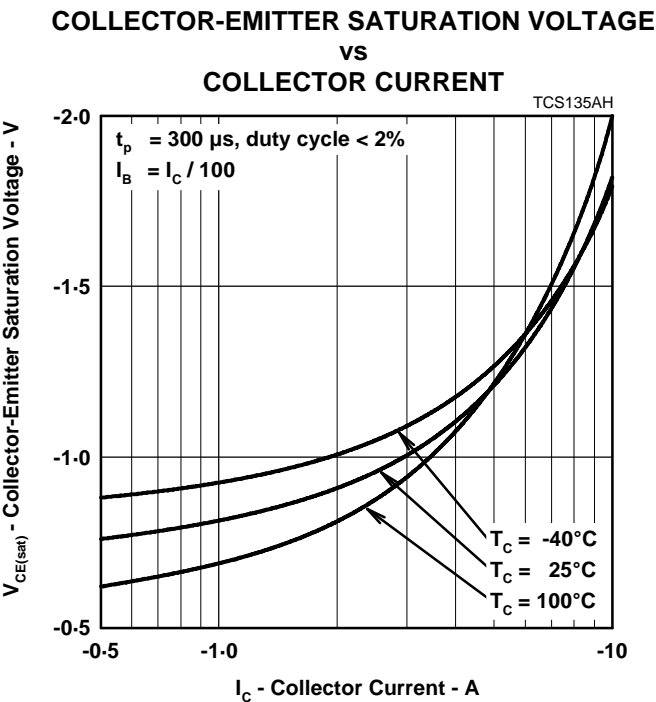


Figure 2.

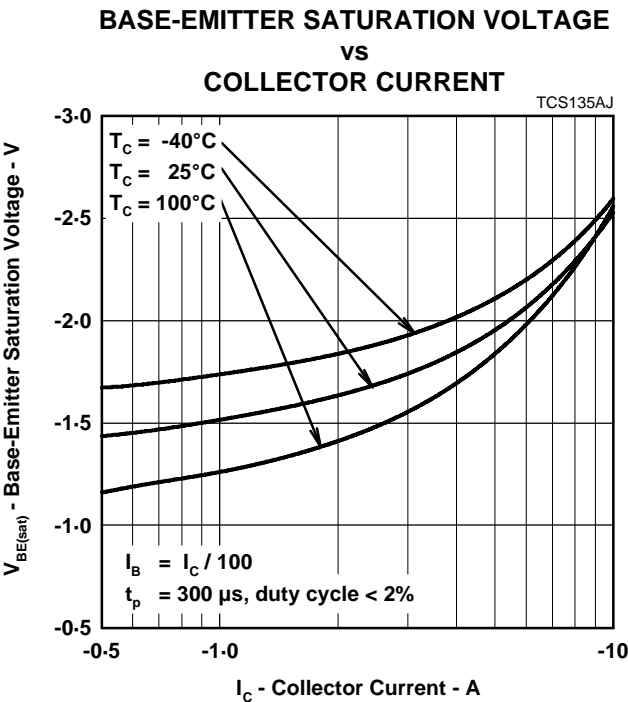


Figure 3.

PRODUCT INFORMATION

THERMAL INFORMATION

MAXIMUM POWER DISSIPATION  
vs  
CASE TEMPERATURE

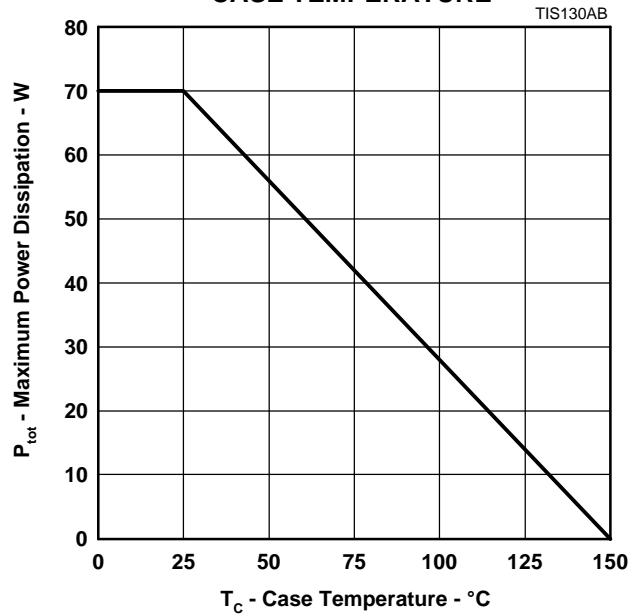


Figure 4.

# BDX34, BDX34A, BDX34B, BDX34C, BDX34D PNP SILICON POWER DARLINGTONS

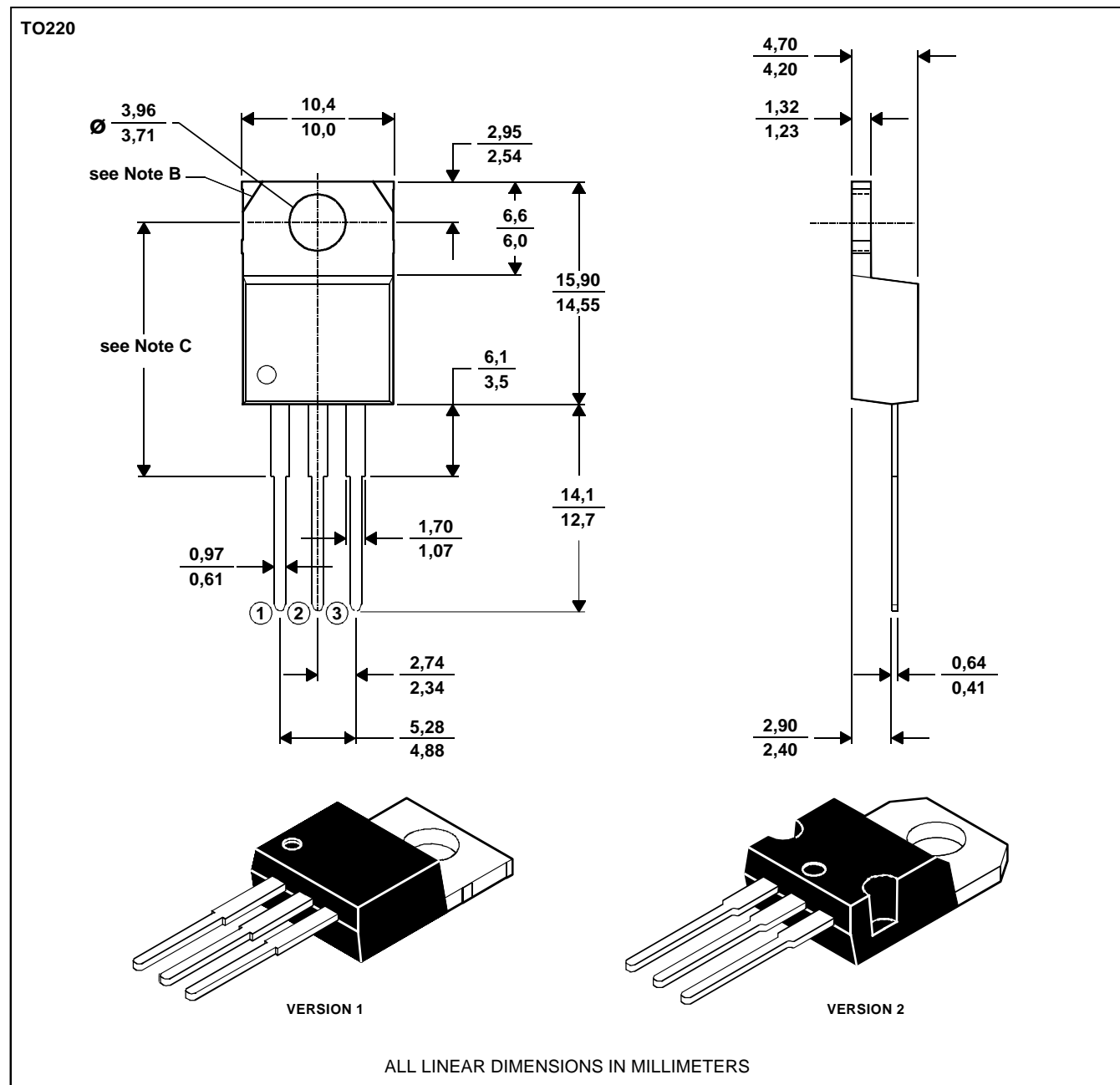
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## MECHANICAL DATA

### 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.

MDXXBE

## PRODUCT INFORMATION

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