



PNP BDX45 – BDX46 – BDX47

SILICON PLANAR DARLINGTON TRANSISTORS

The BDX45, BDX46 and BDX47 are silicon PNP planar Darlington transistors and are mounted in Jedec TO-126 plastic package.

They are intended for use in industrial switching applications.

The complementary NPN types are the BDX42, BDX43 and BDX44 respectively.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
- V_{CBO}	Collector-Base Voltage	BDX45	60	V
		BDX46	80	
		BDX47	90	
- V_{CER}	Collector-Emitter Voltage	BDX45	45	V
		BDX46	60	
		BDX47	80	
- V_{EBO}	Emitter-Base Voltage		5	V
- I_C	Collector Current	- I_C	1	A
		- I_{CM}	2	
- I_B	Base Current		0.1	A
P_T	Power Dissipation	@ $T_C = 25^\circ$	1.25	W
T_J	Junction Temperature		150	$^\circ\text{C}$
T_S	Storage Temperature		-65 to +150	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to Ambient	100	K/W
R_{thJ-mb}	Thermal Resistance, Junction to Mounting base	10	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
- I_{CES}	Collector cut-off current	$V_{BE} = 0$; $-V_{CE} = 45V$	BDX45	-	-	10	μA
		$V_{BE} = 0$; $-V_{CE} = 60V$	BDX46	-	-	10	
		$V_{BE} = 0$; $-V_{CE} = 80V$	BDX47	-	-	10	
- I_{EBO}	Emitter cut-off current	$I_C = 0$; $V_{EB} = 4V$	BDX45	-	-	10	μA
			BDX46	-	-	10	
			BDX47	-	-	10	
- $V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$-I_C = 500 \text{ mA}$, $-I_B = 0.5 \text{ mA}$	BDX45	-	-	1.3	V
			BDX46	-	-	1.3	
			BDX47	-	-	1.3	
		$-I_C = 1.0 \text{ A}$, $-I_B = 1.0 \text{ mA}$	BDX46	-	-	1.6	
			BDX45	-	-	1.6	
		$-I_C = 1.0 \text{ A}$, $-I_B = 4.0 \text{ mA}$	BDX47	-	-	1.6	
			BDX45	-	-	1.3	
		$-I_C = 500 \text{ mA}$, $-I_B = 0.5 \text{ mA}$ $T_j = 150^\circ C$	BDX46	-	-	1.3	
			BDX45	-	-	1.3	
			BDX47	-	-	1.3	
- $V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$-I_C = 500 \text{ mA}$, $-I_B = 0.5 \text{ mA}$	BDX46	-	-	1.8	V
			BDX45	-	-	1.6	
			BDX47	-	-	1.6	
		$-I_C = 1.0 \text{ A}$, $-I_B = 1.0 \text{ mA}$	BDX45	-	-	1.9	
			BDX46	-	-	1.9	
		$-I_C = 1.0 \text{ A}$, $-I_B = 4.0 \text{ mA}$	BDX47	-	-	1.9	
h_{FE}	DC Current Gain	$-V_{CE} = 10.0 \text{ V}$ $-I_C = 150 \text{ mA}$	BDX45	1000	-	-	-
			BDX46	1000	-	-	
			BDX47	1000	-	-	
		$-V_{CE} = 10.0 \text{ V}$ $-I_C = 500 \text{ mA}$	BDX45	2000	-	-	
			BDX46	2000	-	-	
			BDX47	2000	-	-	
h_{fe}	Small Signal Current Gain	$-V_{CE} = 5.0 \text{ V}$, $-I_C = 500 \text{ mA}$ $f = 35 \text{ MHz}$	BDX45	-	10	-	-
			BDX46	-	10	-	
			BDX47	-	10	-	
t_{on}	Turn-on time	$-I_C = 500 \text{ mA}$ $-I_{B(on)} = I_{B(off)} = 0.5 \text{ mA}$	-	-	400	-	ns
t_{off}	Turn-off time		-	-	1500	-	
t_{on}	Turn-on time	$-I_C = 1 \text{ A}$ $-I_{B(on)} = I_{B(off)} = 1.0 \text{ mA}$	-	-	400	-	ns
t_{off}	Turn-off time		-	-	1500	-	

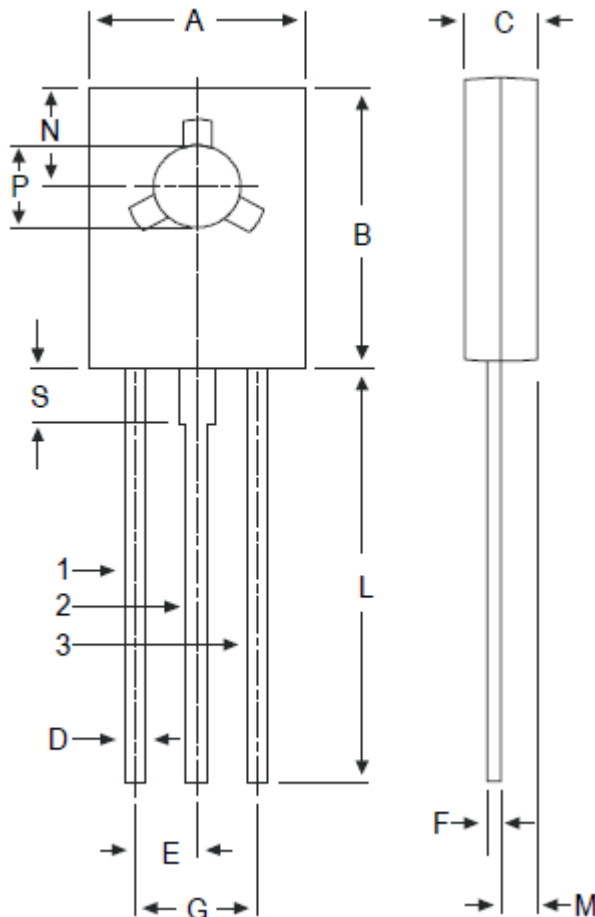


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MECHANICAL DATA CASE TO-126

	DIMENSIONS	
	min	max
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 typ.	
F	0.49	0.75
G	4.4 typ.	
L	15.7 typ.	
M	1.27 typ.	
N	3.75 typ.	
P	3.0	3.2
S	2.54 typ.	

Pin 1 :	Emitter
Pin 2 :	Collector
Pin 3 :	Base



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