NPN BDX42 – BDX43– BDX44

SILICON PLANAR DARLINGTON TRANSISTORS

The BDX42, BDX43 and BDX44 are silicon NPN planar Darlington transistors and are mounted in Jedec TO-126 plastic package.
They are intented for use in industrial switching applications.
The complementary PNP types are the BDX45, BDX46 and BDX47 respectively.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-Base Voltage		BDX42	60	V
			BDX43	80	
			BDX44	90	
V_{CER}	Collector-EmitterVoltage		BDX42	45	V
			BDX43	60	
			BDX44	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°		1.25	Watts
T_J	Junction Temperature			150	°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	BDX42	-	-	10	µA
		V_{BE} = 0 ; V_{CE} = 60V	BDX43	-	-	10	
		V_{BE} = 0 ; V_{CE} = 80V	BDX44	-	-	10	
I_{EBO}	Emitter cut-off current	I_C =0 ; V_{EB} = 4V	BDX42	-	-	10	µA
			BDX43	-	-	10	
			BDX44	-	-	10	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C=500 m A, I_B=0.5 mA	BDX42	-	-	1.3	V
			BDX43	-	-	1.3	
			BDX44	-	-	1.3	
		I_C=1.0 A, I_B=1.0 mA	BDX43	-	-	1.6	
		I_C=1.0 A, I_B=4.0 mA	BDX42	-	-	1.6	
			BDX44	-	-	1.6	
		I_C=500 m A, I_B=0.5 mA Tj=150 °C	BDX42	-	-	1.3	
			BDX43	-	-	1.3	
			BDX44	-	-	1.3	
		I_C=1.0 A, I_B=1.0 mA Tj=150 °C	BDX43	-	-	1.8	
		I_C=1.0 A, I_B=4.0 mA Tj=150 °C	BDX42	-	-	1.6	
			BDX44	-	-	1.6	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	I_C=500 m A, I_B=0.5 mA	BDX42	-	-	1.9	V
			BDX43	-	-	1.9	
			BDX44	-	-	1.9	
		I_C=1.0 A, I_B=1.0 mA	BDX43	-	-	2.2	
		I_C=1.0 A, I_B=4.0 mA	BDX42	-	-	2.2	
			BDX44	-	-	2.2	
h_{FE}	DC Current Gain	V_{CE}=10 V, I_C=150 mA	BDX42	1000	-	-	-
			BDX43	1000	-	-	
			BDX44	1000	-	-	
		V_{CE}=10 V, I_C=500 mA	BDX42	2000	-	-	
			BDX43	2000	-	-	
			BDX44	2000	-	-	
h_{fe}	Small Signal Current Gain	V_{CE}=5.0 V, I_C=500 mA f=35MHz	BDX42	-	10	-	-
			BDX43	-	10	-	
			BDX44	-	10	-	
t_{on}	Turn-on time	I_C=500 mA		-	400	-	ns
t_{off}	Turn-off time	I_{Bon}= -I_{Boff}=0.5 mA		-	1500	-	
t_{on}	Turn-on time	I_C=1 A		-	400	-	ns
t_{off}	Turn-off time	I_{Bon}= -I_{Boff}=1.0 mA		-	1500	-	

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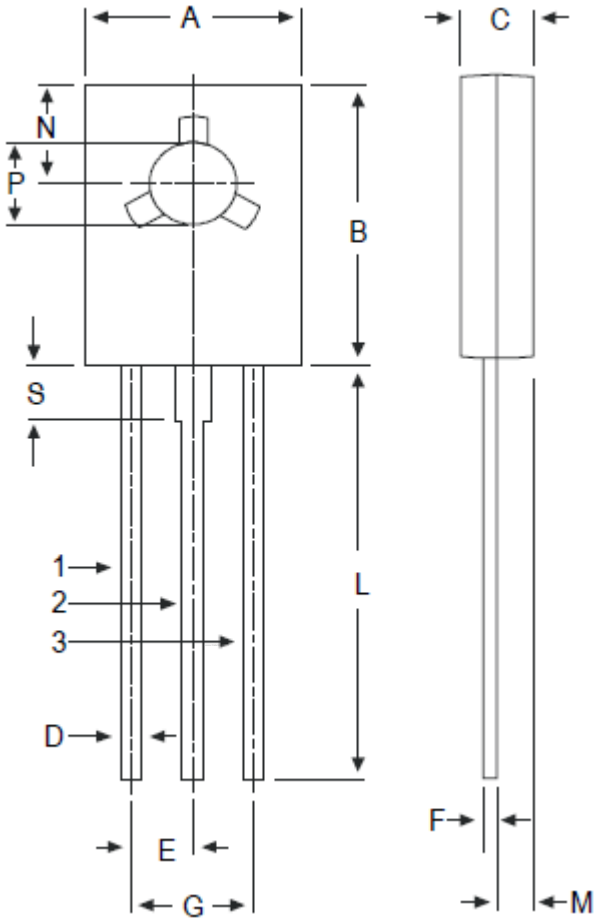
MECHANICAL DATA CASE TO-126

	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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