BD243C
BD244C

COMPLEMENTARY SILICON POWER TRANSISTOR

Features

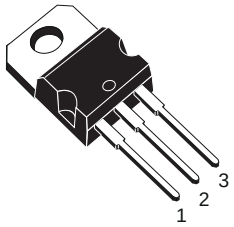
- STmicroelectronics PREFERRED SALESTYPES

Applications

- SWITCHING APPLICATIONS
- LINEAR APPLICATIONS

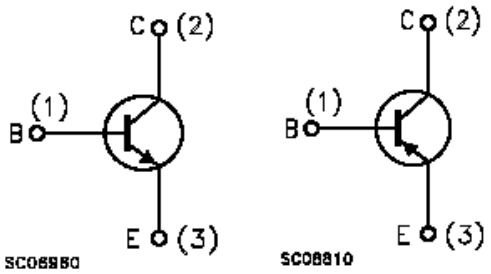
Description

The BD243C device is a silicon Epitaxial-Base NPN transistor mounted in Jedec TO-220 plastic package. It's intend for use in medium power linear and switching applications. The complementary PNP type is BD244C.



TO-220

Internal Schematic Diagram



Order Codes

Part Number	Marking	Package	Packing
BD243C	BD243C	TO-220	TUBE
BD244C	BD244C	TO-220	TUBE

1 Absolute Maximum Ratings

Table 1. Absolute Maximum Rating

Symbol	Parameter	Value		Unit
		BD243C (NPN)	BD244C (PNP)	
V_{CBO}	Collector-Base Voltage (I_E = 0)	100		V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	100		V
V_{EBO}	Collector-Base Voltage (I_C = 0)	5		V
I_C	Collector Current	6		A
I_{CM}	Collector Peak Current	10		A
I_B	Base Current	2		A
P_{TOT}	Total dissipation at T_c = 25°C	65		W
T_{STG}	Storage Temperature	-65 to 150		°C
T_J	Max. Operating Junction Temperature	150		°C

For PNP types voltage and current values are negative

2 Electrical Characteristics

Table 2. Electrical Characteristics (T_{CASE} = 25°C; unless otherwise specified)

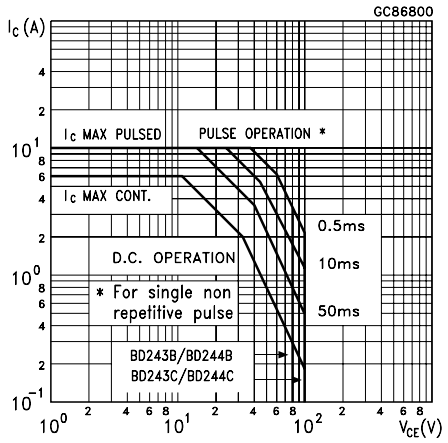
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = rated V_{CEO}			0.4	mA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 60 V			0.7	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			1	mA
$V_{CEO(sus)}$ *Note 1*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 30 mA	100			V
$V_{CE(sat)}$ *Note 1*	Collector-Emitter Saturation Voltage	I_C = 6 A I_B = 1 A			1.5	V
V_{BE} *Note 1*	Base-Emitter Voltage	I_C = 6 A I_B = 1 A			2	V
h_{FE} *Note 1*	DC Current Gain	I_C = 0.3 mA V_{CE} = 4 V I_C = 3 A V_{CE} = 4 V	30 15			
h_{fe}	Small Signal Current Gain	I_C = 0.5 A V_{CE} = 10 V f = 1MHz I_C = 0.5 A V_{CE} = 4 V f = 1MHz	3 20			

Note: 1 Pulsed duration = 300 µs, duty cycle ≤2%.

For PNP types voltage and current values are negative

2.1 Typical characteristics

Figure 1. Safe Operating Area

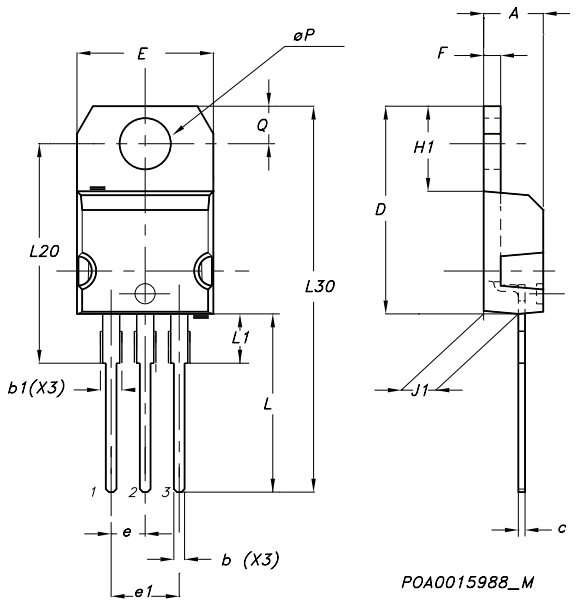


3 Package Mechanical Data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com

TO-220 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
b	0.61		0.88	0.024		0.034
b1	1.15		1.70	0.045		0.066
c	0.49		0.70	0.019		0.027
D	15.25		15.75	0.60		0.620
E	10		10.40	0.393		0.409
e	2.40		2.70	0.094		0.106
e1	4.95		5.15	0.194		0.202
F	1.23		1.32	0.048		0.052
H1	6.20		6.60	0.244		0.256
J1	2.40		2.72	0.094		0.107
L	13		14	0.511		0.551
L1	3.50		3.93	0.137		0.154
L20		16.40			0.645	
L30		28.90			1.137	
øP	3.75		3.85	0.147		0.151
Q	2.65		2.95	0.104		0.116



4 Revision History

Date	Revision	Changes
13-Sep-2005	4	New datasheet according to MLD-PWR/05/1267 New template