

COMPLEMENTARY SILICON POWER TRANSISTOR

Features

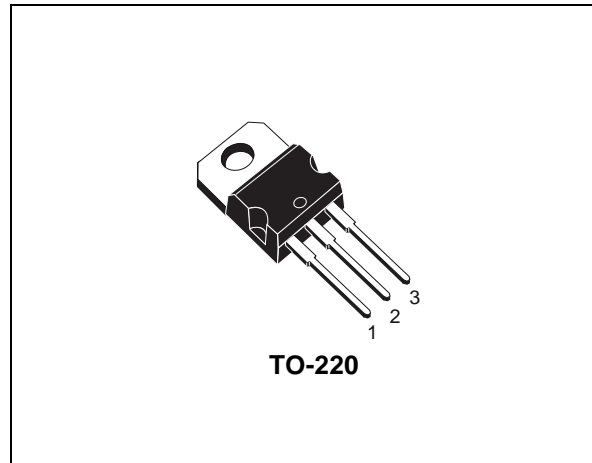
- STmicroelectronics PREFERRED SALESTYPES

Applications

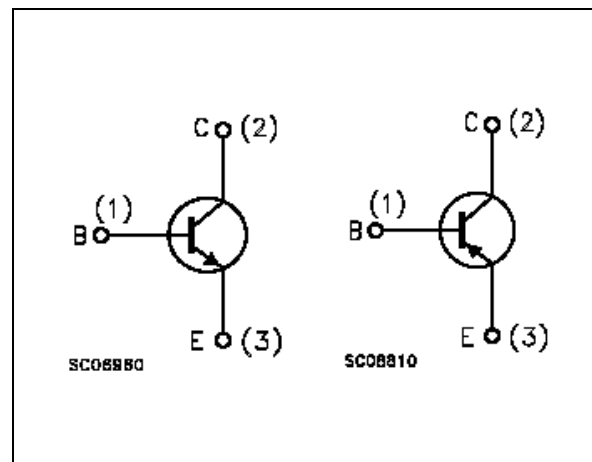
- SWITCHING APPLICATIONS
- LINEAR APPLICATIONS

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.



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_{CB0}	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 $T_C = 25^\circ\text{C}$	65		W
T_{STG}	Storage Temperature	-65 to 150		$^\circ\text{C}$
T_J	Max. Operating Junction Temperature	150		$^\circ\text{C}$

For PNP types voltage and current values are negative

2 Electrical Characteristics

Table 2. Electrical Characteristics ($T_{CASE} = 25^{\circ}C$; unless otherwise specified)

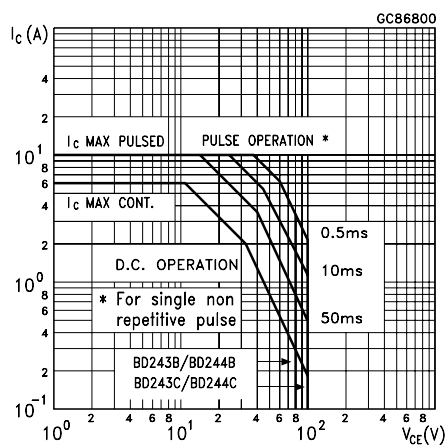
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = \text{rated } V_{CEO}$			0.4	mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 60 \text{ V}$			0.7	μA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 \text{ V}$			1	mA
$V_{CEO(sus)}$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

Note: 1 Pulsed duration = 300 μs , duty cycle $\leq 2\%$.

For PNP types voltage and current values are negative

2.1 Typical characteristics

Figure 1. Safe Operating Area



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

