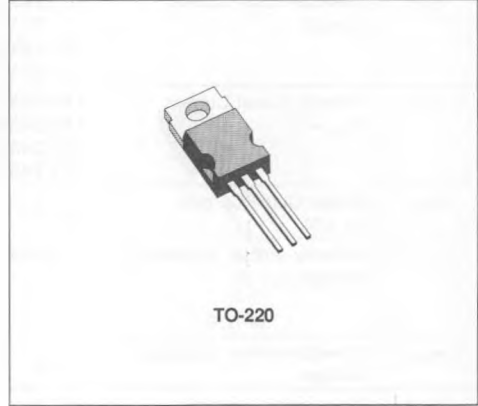


## POWER LINEAR AND SWITCHING APPLICATIONS

### DESCRIPTION

The BD243, BD243A, BD243B and BD243C are silicon epitaxial-base NPN power transistors in Jedec TO-220 plastic package, intended for use in medium power linear and switching applications.

The complementary PNP types are the BD244, BD244A, BD244B and BD244C respectively.



### INTERNAL SCHEMATIC DIAGRAMS



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	NPN PNP*	Value				Unit
			BD243 BD244	BD243A BD244A	BD243B BD244B	BD243C BD244C	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )		45	60	80	100	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )		45	60	80	100	V
$V_{EBO}$	Emitter-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 Power Dissipation at $T_{case} \leq 25^\circ C$		65				W
$T_{stg}$	Storage Temperature		- 65 to 150				$^\circ C$
$T_J$	Junction Temperature		150				$^\circ C$

\* For PNP types voltage and current values are negative.

**THERMAL DATA**

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	1.92	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	62.5	$^{\circ}C/W$

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25\ ^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	for <b>BD243/44/43A/44A</b> $V_{CE} = 30\ V$			0.7	mA
		for <b>BD243B/44B/43C/44C</b> $V_{CE} = 60\ V$			0.7	mA
$I_{CES}$	Collector Cutoff Current ( $V_{BE} = 0$ )	for <b>BD243/44</b> $V_{CE} = 45\ V$			0.4	mA
		for <b>BD243A/44A</b> $V_{CE} = 60\ V$			0.4	mA
		for <b>BD243B/44B</b> $V_{CE} = 80\ V$			0.4	mA
		for <b>BD243C/44C</b> $V_{CE} = 100\ V$			0.4	mA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 5\ V$			1	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 30\ mA$	for <b>BD243/44</b>	45		V
			for <b>BD243A/44A</b>	60		V
			for <b>BD243B/44B</b>	80		V
			for <b>BD243C/44C</b>	100		V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 6\ A$	$I_B = 1\ mA$		1.5	V
$V_{BE}^*$	Base-emitter Voltage	$I_C = 6\ A$	$V_{CE} = 4\ V$		2	V
$h_{FE}^*$	DC Current Gain	$I_C = 0.3\ A$	$V_{CE} = 4\ V$	30		
		$I_C = 3\ A$	$V_{CE} = 4\ V$	15		
$h_{fe}$	Small Signal Current Gain	$I_C = 0.5\ A$ $f = 1\ KHz$	$V_{CE} = 10\ V$	20		
		$I_C = 0.5\ A$ $f = 1\ MHz$	$V_{CE} = 10\ V$	3		

\* Pulsed : pulse duration = 300  $\mu s$ , duty cycle  $\leq 2\%$ .

For PNP types voltage and current values are negative.