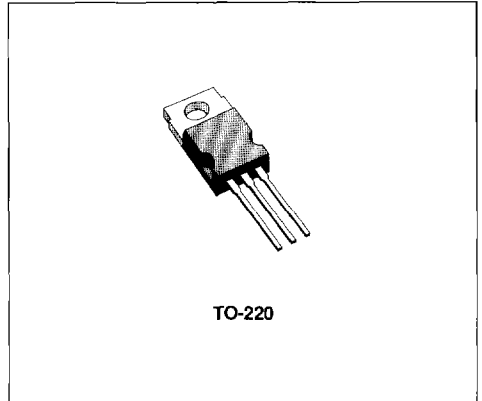


POWER LINEAR AND SWITCHING APPLICATIONS

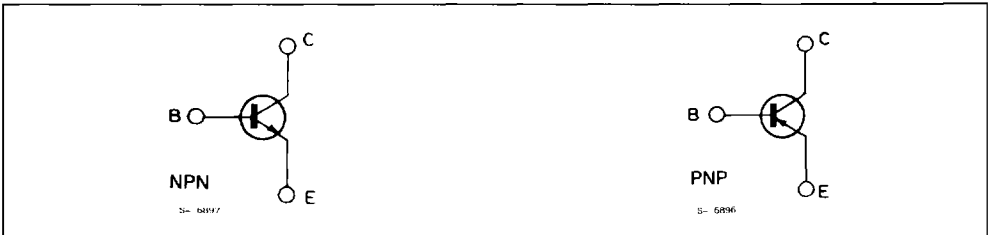
DESCRIPTION

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 $T_{case} \leq 25^\circ\text{C}$		65				W
T_{stg}	Storage Temperature		- 65 to 150				$^\circ\text{C}$
T_j	Junction Temperature		150				$^\circ\text{C}$

* For PNP types voltage and current values are negative.

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

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

* Pulsed : pulse duration = 300 μ s, duty cycle $\leq 2\%$.
For PNP types voltage and current values are negative.