SGS-THOMSON MICROELECTRONICS

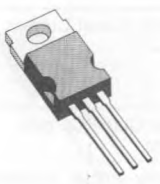
BD243/A/B/C
BD244/A/B/C

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.



TO-220

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 $T_{case} \leq 25$ °C		65				W
T_{stg}	Storage Temperature		– 65 to 150				°C
T_j	Junction Temperature		150				°C

* For PNP types voltage and current values are negative.

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °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 V				0.7	mA
		for **BD243B/44B/43C/44C** V_{CE} = 60 V				0.7	mA
I_{CES}	Collector Cutoff Current (V_{BE} = 0)	for **BD243/44**	V_{CE} = 45 V			0.4	mA
		for **BD243A/44A**	V_{CE} = 60 V			0.4	mA
		for **BD243B/44B**	V_{CE} = 80 V			0.4	mA
		for **BD243C/44C**	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 **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 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 µs, duty cycle ≤ 2 %.
For PNP types voltage and current values are negative.