

# COMPLEMENTARY SILICON PLASTIC POWER TRANSISTORS

... designed for use in general purpose power amplifier and switching applications.

## FEATURES:

- \* Collector-Emitter Sustaining Voltage -  
 $V_{CEO(max)}$  = 45V(Min)- BD243,BD244  
 60V(Min)- BD243A,BD244A  
 80V(Min)- BD243B,BD244B  
 100V(Min)- BD243C,BD244C

\* DC Current Gain  $hFE = 30(\text{Min}) @ I_C = 0.3A$

\* Current Gain-Bandwidth Product  $fT = 3.0 \text{ MHz} (\text{Min}) @ I_C = 500mA$

Boca Semiconductor Corp.  
BSC

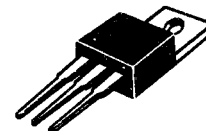
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NPN	PNP
BD243	BD244
BD243A	BD244A
BD243B	BD244B
BD243C	BD244C

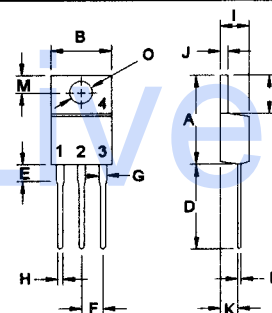
6 AMPERE  
COMPLEMENTARY SILICON  
POWER TRANSISTORS  
45 -100 VOLTS  
65 WATTS

## MAXIMUM RATINGS

Characteristic	Symbol	BD243	BD243A	BD243B	BD243C	Unit
		BD244	BD244A	BD244B	BD244C	
Collector-Emitter Voltage	$V_{CEO}$	45	60	80	100	V
Collector-Base Voltage	$V_{CBO}$	45	60	80	100	V
Emitter-Base Voltage	$V_{EBO}$	5.0				V
Collector Current - Continuous - Peak	$I_C$	6.0 10				A
Base Current	$I_B$	2.0				A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	65 0.52				W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +150				$^\circ\text{C}$



TO-220



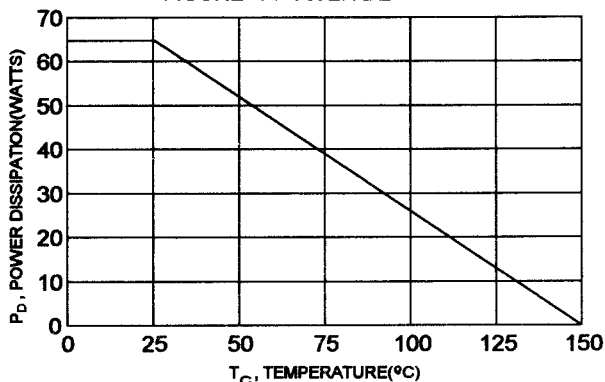
PIN 1.BASE  
2.COLLECTOR  
3.EMITTER  
4.COLLECTOR(CASE)

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.92	$^\circ\text{C/W}$

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

FIGURE -1 POWER DERATING



**ELECTRICAL CHARACTERISTICS** (  $T_C = 25^\circ\text{C}$  unless otherwise noted )

Characteristic	Symbol	Min	Max	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Sustaining Voltage(1) ( $I_C = 30\text{ mA}$ , $I_B = 0$ )	BD243,BD244 BD243A,BD244A BD243B,BD244B BD243C,BD244C	$V_{CE(sus)}$	45 60 80 100	V
Collector Cutoff Current ( $V_{CE} = 30\text{ V}$ , $I_B = 0$ ) ( $V_{CE} = 60\text{ V}$ , $I_B = 0$ )	BD243/44/43A/44A BD243B/44B/43C/44C	$I_{CEO}$		0.7 0.7 mA
Collector Cutoff Current ( $V_{CE} = 45\text{ V}$ , $V_{EB} = 0$ ) ( $V_{CE} = 60\text{ V}$ , $V_{EB} = 0$ ) ( $V_{CE} = 80\text{ V}$ , $V_{EB} = 0$ ) ( $V_{CE} = 100\text{ V}$ , $V_{EB} = 0$ )	BD243/44 BD243A/44A BD243B/44B BD243C/44C	$I_{CES}$		0.4 0.4 0.4 0.4 mA
Emitter Cutoff Current ( $V_{EB} = 5.0\text{ V}$ , $I_C = 0$ )		$I_{EBO}$		1.0 mA

**ON CHARACTERISTICS (1)**

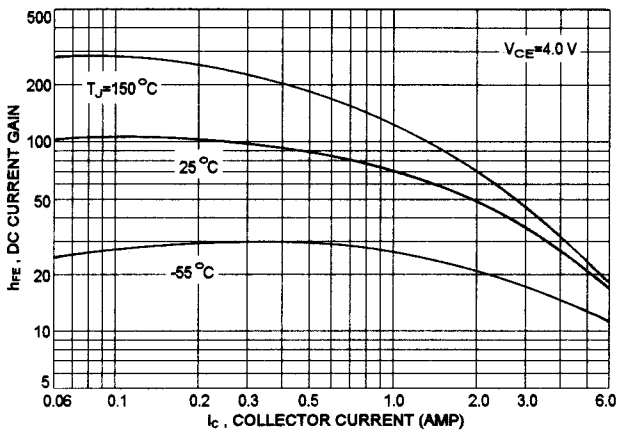
DC Current Gain ( $V_{CE} = 4.0\text{ V}$ , $I_C = 0.3\text{ A}$ ) ( $V_{CE} = 4.0\text{ V}$ , $I_C = 3.0\text{ A}$ )		$h_{FE}$	30 15	
Collector-Emitter Saturation Voltage ( $I_C = 6.0\text{ A}$ , $I_B = 1.0\text{ A}$ )		$V_{CE(sat)}$		1.5 V
Base-Emitter On Voltage ( $I_C = 6.0\text{ A}$ , $V_{CE} = 4.0\text{ V}$ )		$V_{BE(on)}$		2.0 V

**DYNAMIC CHARACTERISTICS**

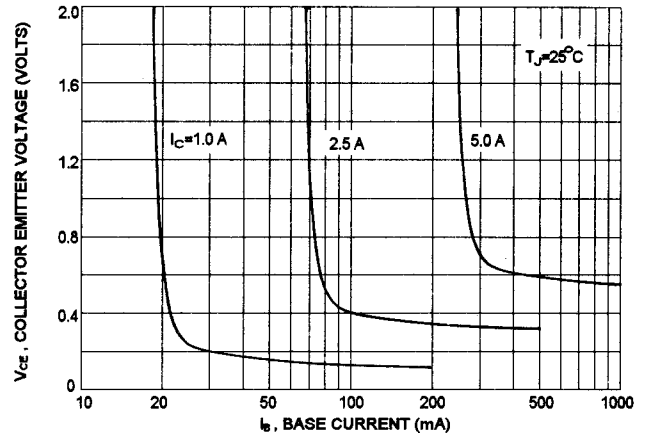
Current Gain-Bandwidth Product (2) ( $I_C = 500\text{ mA}$ , $V_{CE} = 10\text{ V}$ , $f = 1\text{ MHz}$ )		$f_T$	3.0	MHz
Small-Signal Current Gain ( $I_C = 500\text{ mA}$ , $V_{CE} = 10\text{ V}$ , $f = 1\text{ KHz}$ )		$h_{fe}$	20	

(1) Pulse Test: Pulse width =  $300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ (2)  $f_T = |h_{fe}| \cdot f_{test}$

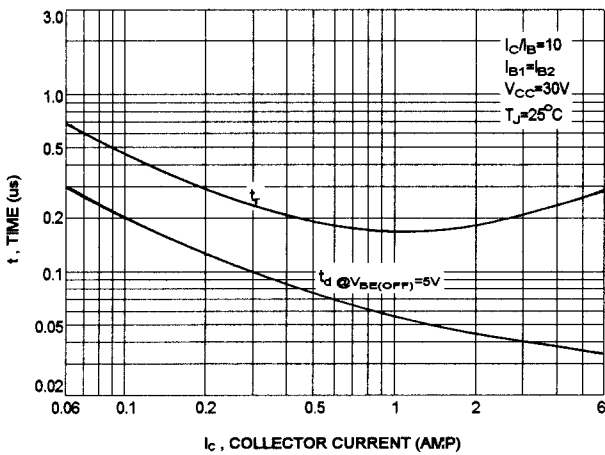
DC CURRENT GAIN



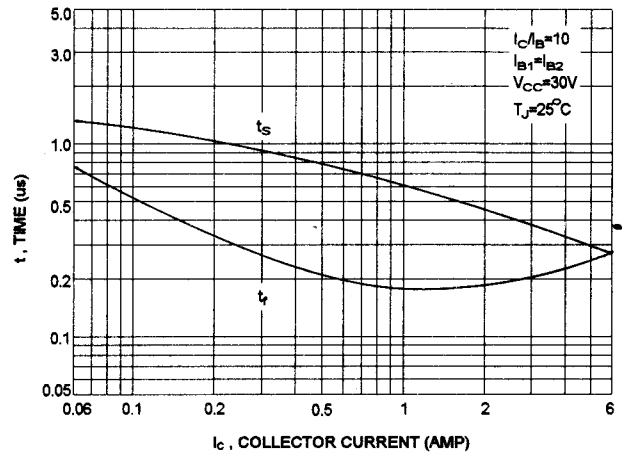
COLLECTOR SATURATION REGION



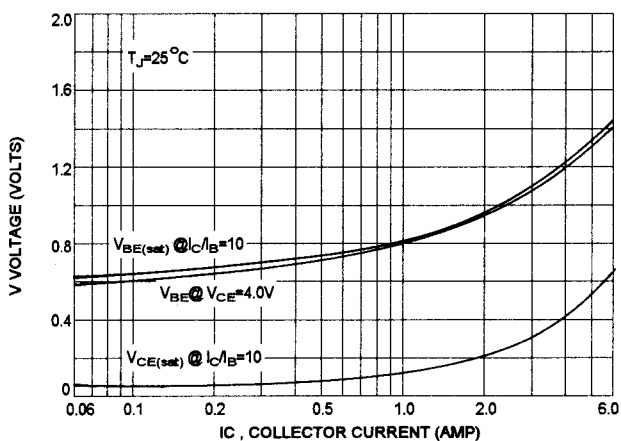
TURN-ON TIME



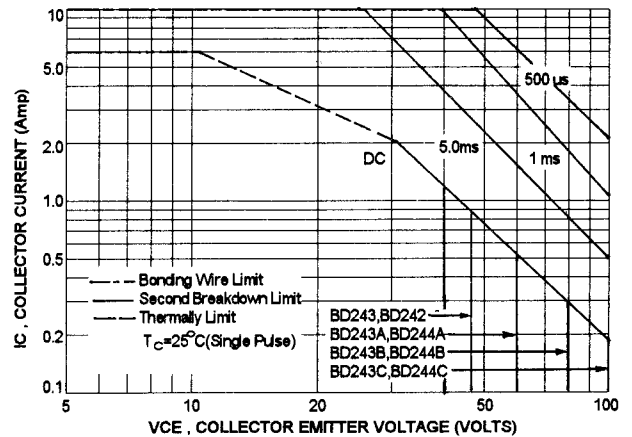
TURN-OFF TIME



"ON" VOLTAGES



ACTIVE REGION SAFE OPERATING AREA



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