COMPLEMENTARY SILICON PLASTIC POWER TRANSISTORS

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

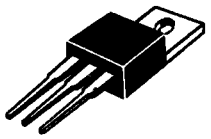
NPN	PNP
BD241	BD242
BD241A	BD242A
BD241B	BD242B
BD241C	BD242C

FEATURES:

* Collector-Emitter Sustaining Voltage - $V_{CEO(sus)}$= 45V(Min)- BD241,BD242
  60V(Min)- BD241A,BD242A
  80V(Min)- BD241B,BD242B
  100V(Min)- BD241C,BD242C
* DC Current Gain hFE= 25(Min)@I_C= 1.0A
* Current Gain-Bandwidth Product fT=3.0 MHz (Min)@ I_C=500mA

Boca Semiconductor Corp.
BSC
http://www.bocasemi.com

3 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
45 -100 VOLTS
40 WATTS



TO-220

MAXIMUM RATINGS

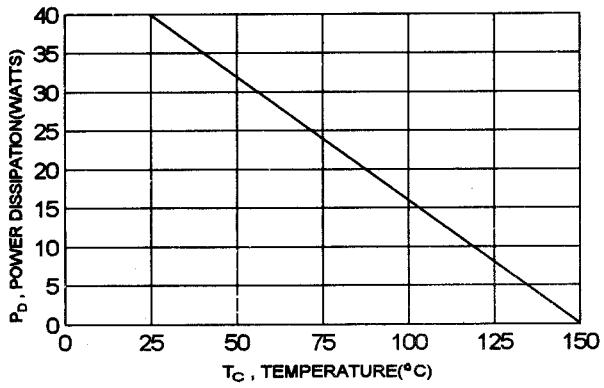
Characteristic	Symbol	BD241 BD242	BD241A BD242A	BD241B BD242B	BD241C BD242C	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	100	V
Collector-Base Voltage	V_{CBO}	55	70	90	115	V
Emitter-Base Voltage	V_{EBO}	5.0				V
Collector Current - Continuous - Peak	I_C	3.0 5.0				A
Base Current	I_B	1.0				A
Total Power Dissipation@T_C = 25°C Derate above 25°C	P_D	40 0.32				W W/°C
Operating and Storage Junction Temperature Range	T_J,T_{STG}	-65 to +150				°C

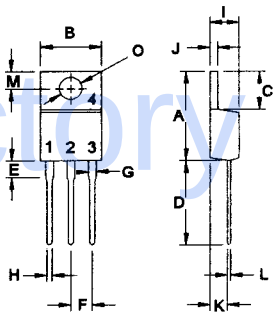
Datasheet Directory

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	3.125	°C/W

FIGURE -1 POWER DERATING





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

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

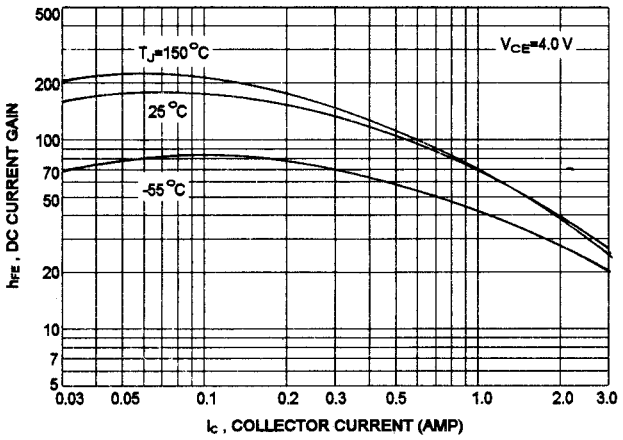
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage(1) (I_C= 30mA,I_B= 0)	BD241,BD242 BD241A,BD242A BD241B,BD242B BD241C,BD242C	$V_{CEO(sus)}$	45 60 80 100		V
Collector Cutoff Current (V_{CE}= 30V,I_B= 0) (V_{CE}= 60V,I_B= 0)	 BD241/42/41A/42A BD241B/42B/41C/42C	I_{CEO}		 0.3 0.3	mA
Collector Cutoff Current (V_{CE}= 45V,V_{EB}= 0) (V_{CE}= 60V,V_{EB}= 0) (V_{CE}= 80V,V_{EB}= 0) (V_{CE}= 100V,V_{EB}= 0)	 BD241/42 BD241A/42A BD241B/42B BD241C/42C	I_{CES}		 0.2 0.2 0.2 0.2	mA
Emitter Cutoff Current (V_{EB}= 5V,I_C= 0)		I_{EBO}		1.0	mA
ON CHARACTERISTICS (1)					
DC Current Gain (V_{CE} = 4.0 V, I_C =1.0 A) (V_{CE} = 4.0 V, I_C= 3.0 A)		hFE	 25 10		
Collector-Emitter Saturation Voltage (I_C = 3.0 A, I_B =600 mA)		$V_{CE(sat)}$		1.2	V
Base-Emitter On Voltage (I_C =3.0 A, V_{CE}= 4.0 V)		$V_{BE(On)}$		1.8	V
DYNAMIC CHARACTERISTICS					
Current Gain-Bandwidth Prodct (2) (I_C=500 mA, V_{CE}=10 V, f= 1 MHz)		f_T	3.0		MHz
Small-Signal Current Gain (I_C= 500 mA, V_{CE}= 10 V, f= 1 KHz)		hfe	20		

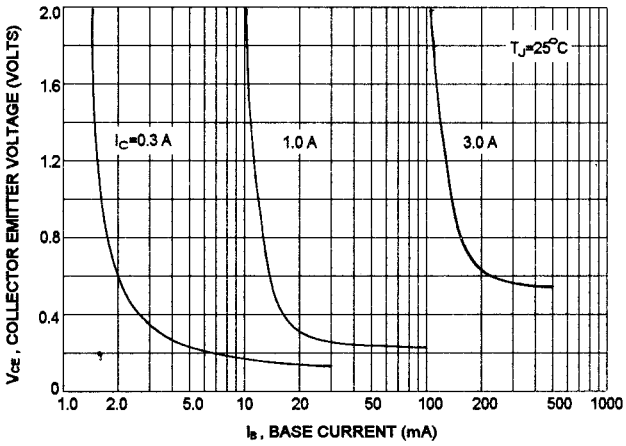
(1) Pulse Test: Pulse width = 300 μs , Duty Cycle ≦ 2.0%

(2) $f_T = |h_{fe}| \cdot f_{test}$

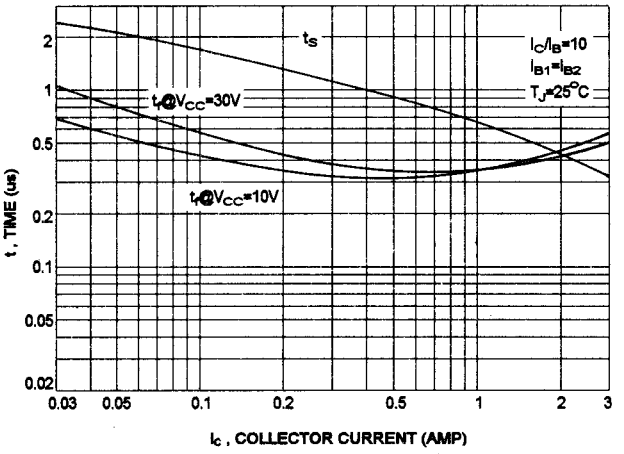
DC CURRENT GAIN



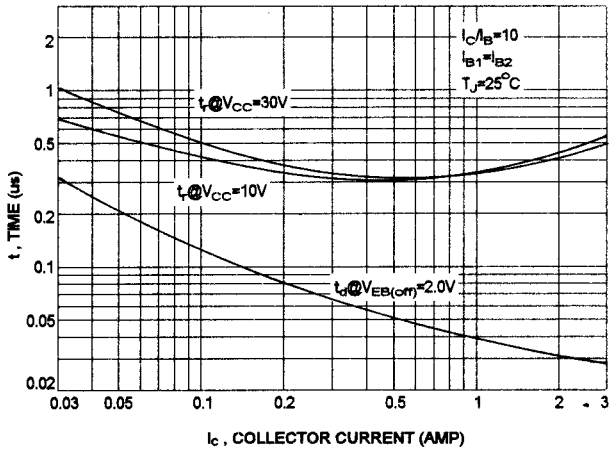
COLLECTOR SATURATION REGION



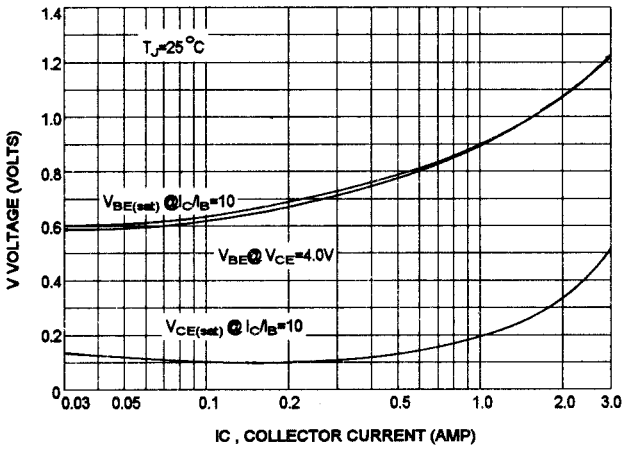
TURN-OFF TIME



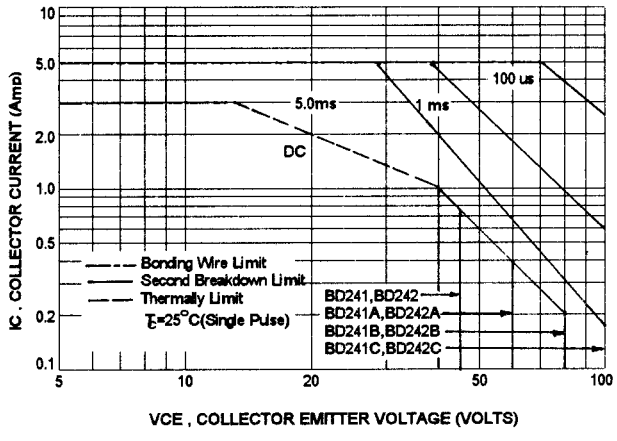
TURN-ON TIME



"ON" VOLTAGES



ACTIVE REGION SAFE OPERATING AREA



Boca Semiconductor Corp.
BSC
http://www.bocasemi.com