MEDIUM-POWER PNP TRANSISTORS

...ideal for use as drivers, switches and medium- power amplifier and applications

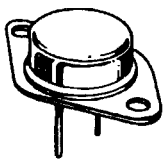
FEATURES:

* Low Collector-Emitter Saturation Voltage - $V_{CE(SAT)}$=0.6V(Max.)@I_C=1.0A
* High Gain Characteristics - hFE = 30 ~ 100 @ I_C = 250mA
* Excellent Safe Area Limits

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

PNP
2N3740
2N3741

4 AMPERE
POWER TRANSISTORS
PNP SILICON
60 - 80 Volts
25 Watts



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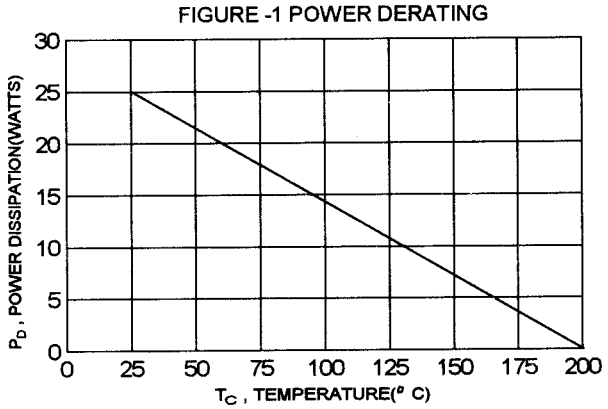
MAXIMUM RATINGS

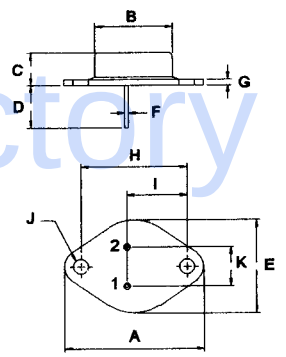
Characteristic	Symbol	2N3740	2N3741	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	V
Collector-Base Voltage	V_{CBO}	60	80	V
Emitter-Base Voltage	V_{EBO}	7.0		V
Collector Current-Continuous -Peak	I_C I_{CM}	4.0 10		A
Base Current	I_B	2.0		A
Total Power Dissipation@T_C=25°C Derate above 25°C	P_D	25 0.143		W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	- 65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	7.0	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	30.60	32.52
B	13.85	14.16
C	6.54	7.22
D	9.50	10.50
E	17.26	18.46
F	0.76	0.92
G	1.38	1.65
H	24.16	24.78
I	13.84	15.60
J	3.32	3.92
K	4.86	5.34

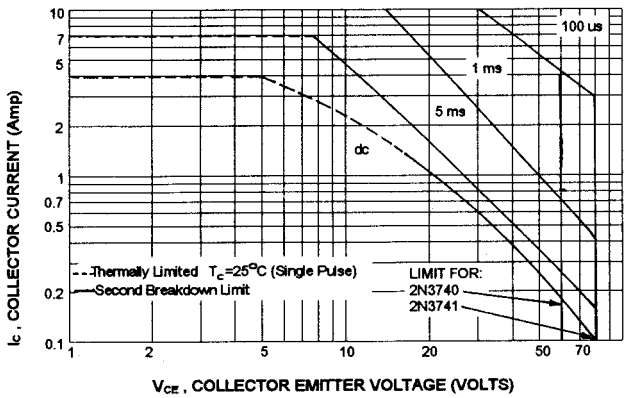
ELECTRICAL CHARACTERISTICS (T_c = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 100 mA, I_B = 0)	2N3740 2N3741	$V_{CEO(SUS)}$	 60 80		V
Collector Cutoff Current (V_{CE} = 40 V, I_B = 0) (V_{CE} = 60 V, I_B = 0)	 2N3740 2N3741	I_{CEO}		 1.0 1.0	mA
Collector Cutoff Current (V_{CE} = 60 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 80 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 40 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C) (V_{CE} = 60 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	 2N3740 2N3741 2N3740 2N3741	I_{CEX}		 100 100 1.0 1.0	 uA uA mA mA
Collector Cutoff Current (V_{CB} = 60 V, I_E = 0) (V_{CB} = 80 V, I_E = 0)	 2N3740 2N3741	I_{CBO}		 100 100	uA
Emitter Cutoff Current (V_{EB} = 7.0 V , I_C = 0)		I_{EBO}		0.5	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C = 100 mA, V_{CE} = 1.0 V) (I_C = 250 mA, V_{CE} = 1.0 V) (I_C = 500 mA, V_{CE} = 1.0 V) (I_C = 1.0 A, V_{CE} = 1.0 V)		hFE	 40 30 20 10	 100	
Collector-Emitter On Voltage (I_C = 1.0 A, I_B = 125 mA)		$V_{CE(sat)}$		0.6	V
Base-Emitter On Voltage (I_C = 250 mA, V_{CE} = 1.0 V)		$V_{BE(on)}$		1.0	V
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product (2) (I_C = 100 mA, V_{CE} = 10 V, f = 1.0 MHz)		f_T	3.0		MHz
Commom Base Output Capacitance (V_{CB} = 10 V , I_C = 0 , f = 100 KHz)		C_{ob}		100	pF
Small-Signal Current Gain (I_C = 50 mA, V_{CE} = 10 V, f = 1.0 KHZ)		h_{fe}	25		

(1) Pulse Test: Pulse width $\leq$ 300 us , Duty Cycle $\leq$ 2.0%

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

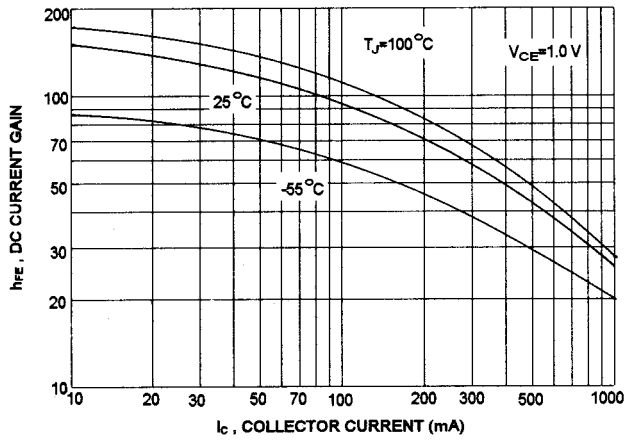
ACTIVE-REGION SAFE OPERATING AREA (SOA)



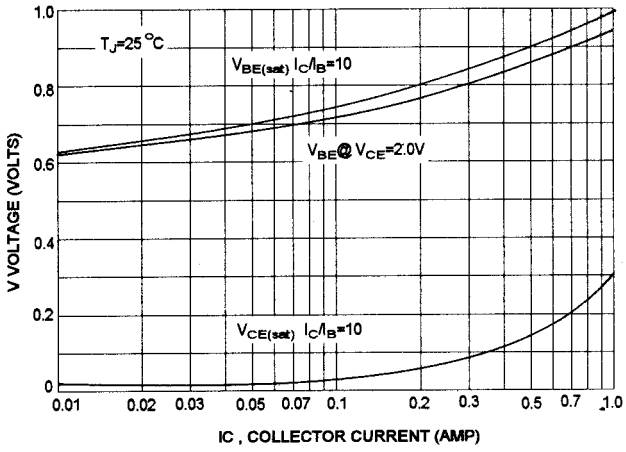
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of SOA curve is base on $T_{J(PK)}$=200 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤200°C,At high case temperatures,thermal limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown

DC CURRENT GAIN



"ON" VOLTAGES



COLLECTOR SATURATION REGION