

SILICON PNP POWER TRANSISTORS

... designed for medium-speed switching and amplifier applications

FEATURES

- * Low Gain Ranges:
 $hFE(\text{Min}) = 15$ and $30 @ I_C = 3A$ -2N3789,2N3790
 25 and $50 @ I_C = 1A$ -2N3791,2N3792
- * Excellent Safe Operating Areas
- * Complementary NPN Types Available-2N3713 thru 2N3716

Boca Semiconductor Corp.

BSC

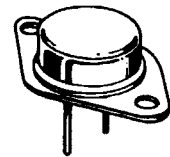
<http://www.bocasemi.com>

**PNP
2N3789
Thru
2N3792**

**10 AMPER
POWER TRANSISTORS
PNP SILICON
60-80 VOLTS
150 WATTS**

MAXIMUM RATINGS

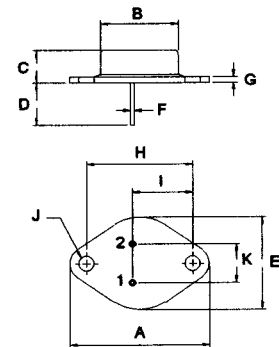
Characteristic	Symbol	2N3789 2N3791	2N3790 2N3792	Unit
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	60	80	V
Emitter-Base Voltage	V_{EBO}	7		V
Collector Current - Continuous	I_C	10		A
Base Current-Continuous	I_B	4		A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	150 0.857		W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200		$^\circ\text{C}$



TO-3

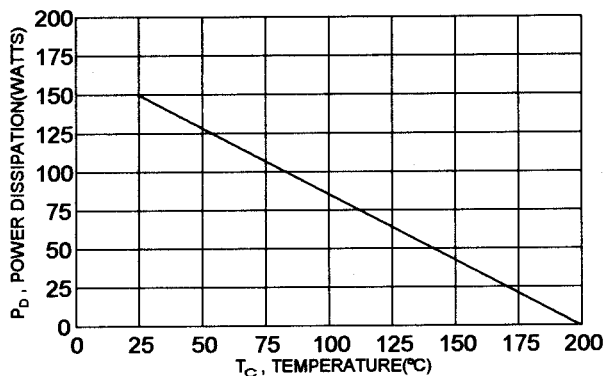
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.17	$^\circ\text{C/W}$



PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

FIGURE -1 POWER DERATING



DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

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) ($I_C = 200\text{ mA}$, $I_B = 0$)	2N3789, 2N3791 2N3790, 2N3792	$V_{CEO(sus)}$	60 80	V
Collector -Emitter Cutoff Current ($V_{CE} = 60\text{ V}$, $V_{BE(off)} = -1.5\text{ V}$) ($V_{CE} = 80\text{ V}$, $V_{BE(off)} = -1.5\text{ V}$) ($V_{CE} = 60\text{ V}$, $V_{BE(off)} = -1.5\text{ V}$, $T_c = 150^\circ\text{C}$) ($V_{CE} = 80\text{ V}$, $V_{BE(off)} = -1.5\text{ V}$, $T_c = 150^\circ\text{C}$)	2N3789, 2N3791 2N3790, 2N3792 2N3789, 2N3791 2N3790, 2N3792	I_{CEX}	1.0 1.0 5.0 5.0	mA
Emitter-Base Cutoff Current ($V_{EB} = 7.0\text{ V}$, $I_C = 0$)	All Types	I_{EBO}	5.0	mA

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 1.0\text{ A}$, $V_{CE} = 2.0\text{ V}$) ($I_C = 3.0\text{ A}$, $V_{CE} = 2.0\text{ V}$)	2N3789, 2N3790 2N3791, 2N3792 2N3789, 2N3790 2N3791, 2N3792	hFE	25 50 15 30	90 180
Collector-Emitter Saturation Voltage ($I_C = 4.0\text{ A}$, $I_B = 0.4\text{ A}$) ($I_C = 5.0\text{ A}$, $I_B = 0.5\text{ A}$)	2N3789, 2N3790 2N3791, 2N3792	$V_{CE(sat)}$	1.0 1.0	V
Base-Emitter On Voltage ($I_C = 5.0\text{ A}$, $V_{CE} = 2.0\text{ V}$) ($I_C = 10\text{ A}$, $V_{CE} = 4.0\text{ V}$)	2N3789, 2N3790 2N3791, 2N3791 All Types	$V_{BE(on)}$	2.0 1.8 4.0	V

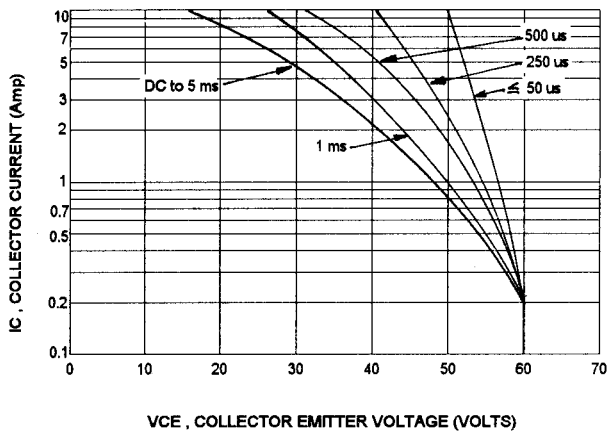
DYNAMIC CHARACTERISTICS

Current-Gain Bandwidth Product (2) ($I_C = 500\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 1\text{ MHz}$)	f_T	4.0	MHz
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(1) Pulse Test: Pulse width = 300 us , Duty Cycle $\leq 2.0\%$ (2) $f_T = |h_{fe}| \cdot f_{test}$

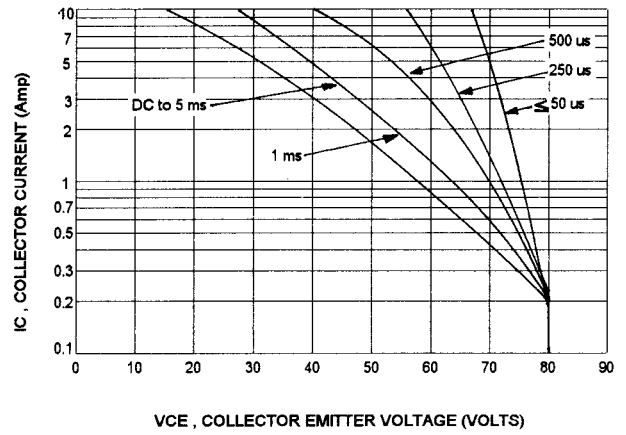
2N3789,2N3791

ACTIVE REGION SAFE OPERATING AREA

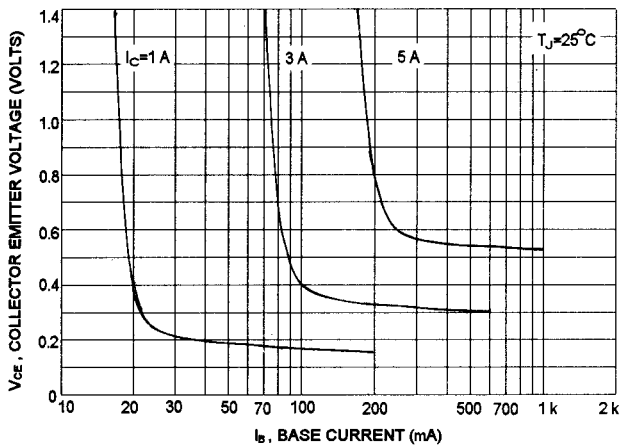


2N3790,2N3792

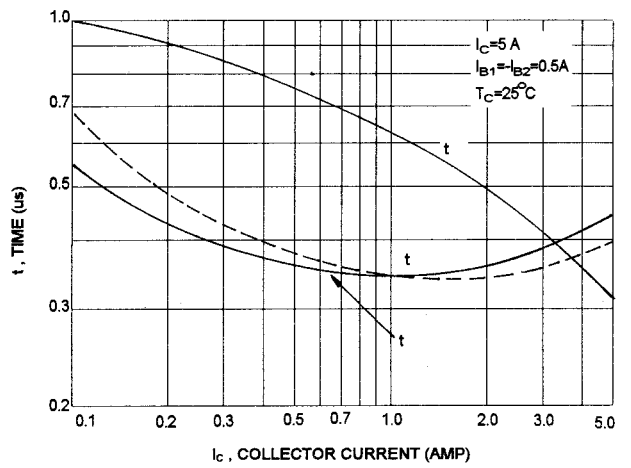
ACTIVE REGION SAFE OPERATING AREA



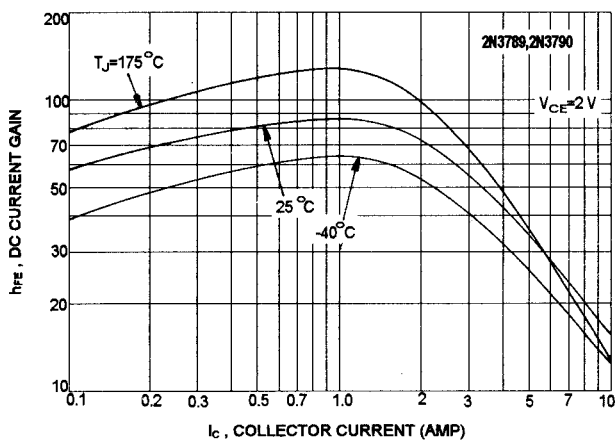
COLLECTOR SATURATION REGION



TYPICAL SWITCHING TIME



DC CURRENT GAIN



DC CURRENT GAIN

