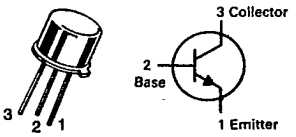
Boca Semiconductor Corp.

T-35-17

2N5320
2N5321

CASE 79-04, STYLE 1
TO-39 (TO-205AD)



SWITCHING TRANSISTORS

NPN SILICON

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MAXIMUM RATINGS

Rating	Symbol	2N5320	2N5321	Unit
Collector-Emitter Voltage	V_{CEO}	75	50	Vdc
Collector-Base Voltage	V_{CBO}	100	75	Vdc
Emitter-Base Voltage	V_{EBO}	7.0	5.0	Vdc
Base Current	I_B	1.0		Adc
Collector Current — Continuous	I_C	2.0		Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	10 0.057		Watts mW/°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	$R_{\theta JC}$	17.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 100 mAdc, I_B = 0)	2N5320 2N5321	$V_{(BR)CEO}$	75 50	— —	Vdc
Collector Cutoff Current (V_{CE} = 100 Vdc, V_{BE} = 1.5 Vdc) (V_{CE} = 70 Vdc, V_{BE} = 1.5 Vdc, T_C = 150°C) (V_{CE} = 75 Vdc, V_{BE} = 1.5 Vdc) (V_{CE} = 45 Vdc, V_{BE} = 1.5 Vdc, T_C = 150°C)	2N5320 2N5321	I_{CEX}	— — — —	0.1 5.0 0.1 5.0	mAdc
Emitter Cutoff Current (V_{BE} = 7.0 Vdc, I_C = 0) (V_{BE} = 5.0 Vdc, I_C = 0)	2N5320 2N5321	I_{EBO}	—	0.1 0.1	mAdc
ON CHARACTERISTICS(1)					
DC Current Gain (I_C = 500 mAdc, V_{CE} = 4.0 Vdc) (I_C = 1.0 Adc, V_{CE} = 2.0 Vdc)	2N5320 2N5321 2N5320	h_{FE}	30 40 10	130 250 —	—
Collector-Emitter Saturation Voltage (I_C = 500 mAdc, I_B = 50 mAdc)	2N5320 2N5321	$V_{CE(sat)}$	— —	0.5 0.8	Vdc
Base-Emitter On Voltage (I_C = 500 mAdc, V_{CE} = 4.0 Vdc)	2N5320 2N5321	$V_{BE(on)}$	—	1.1 1.4	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Small-Signal Current Gain (I_C = 50 mAdc, V_{CE} = 4.0 Vdc, f = 10 MHz)		h_{fe}	5	—	—
SWITCHING CHARACTERISTICS					
Turn-On Time (V_{CC} = 30 Vdc, I_C = 500 mAdc, I_{B1} = 50 mAdc)		t_{on}	—	80	ns
Turn-Off Time (V_{CC} = 30 Vdc, I_C = 500 mAdc, I_{B1} = I_{B2} = 50 mAdc)		t_{off}	—	800	ns

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

Datasheet.Directory

T-35-17

FIGURE 1 — TYPICAL INPUT CHARACTERISTICS

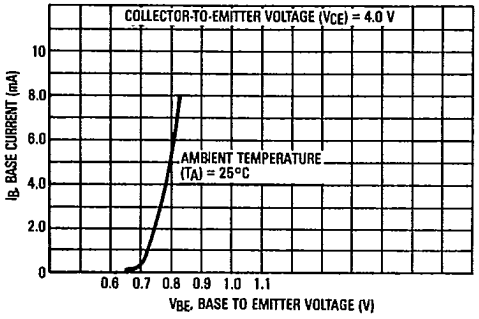

FIGURE 2 — TYPICAL TRANSFER CHARACTERISTICS

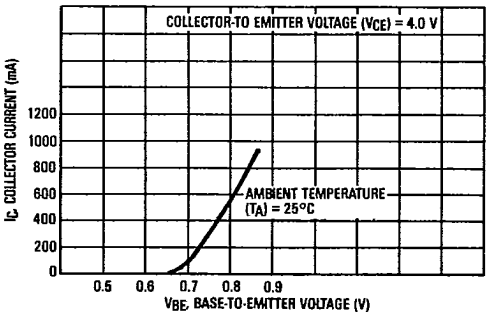

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FIGURE 3 — CURRENT GAIN CHARACTERISTICS versus COLLECTOR-EMITTER VOLTAGE

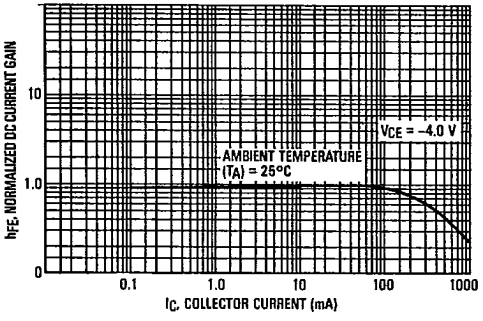
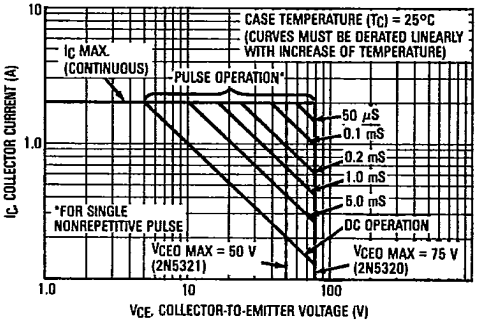


FIGURE 4 — MAXIMUM SAFE OPERATING AREAS (SOA)



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