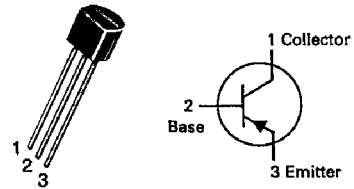


BC327,-16,-25 BC328,-16,-25

CASE 29-04, STYLE 17
TO-92 (TO-226AA)



AMPLIFIER TRANSISTORS

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	BC327	BC328	Unit
Collector-Emitter Voltage	V_{CE}	-45	-25	Vdc
Collector-Base Voltage	V_{CB}	-50	-30	Vdc
Emitter-Base Voltage	V_{EB}	-5.0		Vdc
Collector Current — Continuous	I_C	-800		mA _{dc}
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625	5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5	12	Watt mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C/W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = -10\text{ mA}, I_B = 0$)	BC327 BC328	$V_{(BR)CEO}$	-45 -25	— —	— —	Vdc
Collector-Emitter Breakdown Voltage ($I_C = -100\ \mu\text{A}, I_E = 0$)	BC327 BC328	$V_{(BR)CES}$	-50 -30	— —	— —	Vdc
Emitter-Base Breakdown Voltage ($I_E = -10\ \mu\text{A}, I_C = 0$)		$V_{(BR)EBO}$	-5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = -30\text{ V}, I_E = 0$) ($V_{CB} = -20\text{ V}, I_E = 0$)	BC327 BC328	I_{CBO}	— —	— —	-100 -100	nA _{dc}
Collector Cutoff Current ($V_{CE} = -45\text{ V}, V_{BE} = 0$) ($V_{CE} = -25\text{ V}, V_{BE} = 0$)	BC327 BC328	I_{CES}	— —	— —	-100 -100	nA _{dc}
Emitter Cutoff Current ($V_{EB} = -4.0\text{ V}, I_C = 0$)		I_{EBO}	—	—	-100	nA _{dc}

ON CHARACTERISTICS

DC Current Gain ($I_C = -100\text{ mA}, V_{CE} = -1.0\text{ V}$) ($I_C = -300\text{ mA}, V_{CE} = -1.0\text{ V}$)	BC327/BC328 BC327-16/BC328-16 BC327-25/BC328-25	h_{FE}	100 100 160 40	— — — —	630 250 400 —	—
Base-Emitter On Voltage ($I_C = -300\text{ mA}, V_{CE} = -1.0\text{ V}$)		$V_{BE(on)}$	—	—	-1.2	Vdc
Collector-Emitter Saturation Voltage ($I_C = -500\text{ mA}, I_B = -50\text{ mA}$)		$V_{CE(sat)}$	—	—	-0.7	Vdc

SMALL-SIGNAL CHARACTERISTICS

Output Capacitance ($V_{CB} = -10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$)		C_{ob}	—	11	—	pF
Current-Gain — Bandwidth Product ($I_C = -10\text{ mA}, V_{CE} = -5.0\text{ V}, f = 100\text{ MHz}$)		f_T	—	260	—	MHz

FIGURE 1 - THERMAL RESPONSE

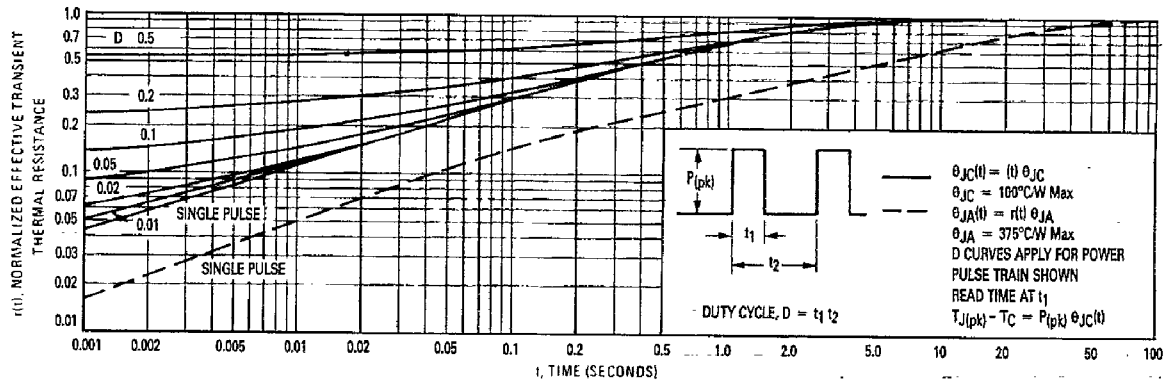


FIGURE 2 - ACTIVE REGION SAFE OPERATING AREA

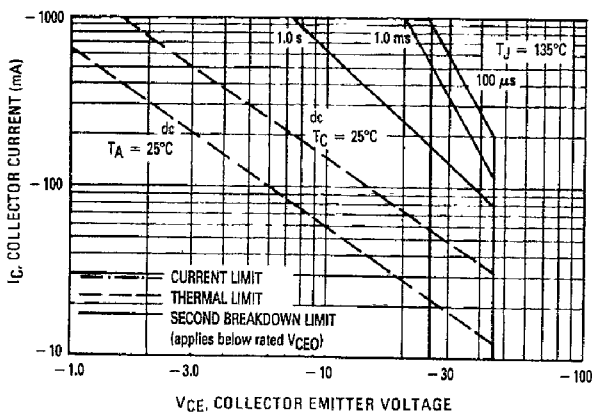


FIGURE 3 - DC CURRENT GAIN

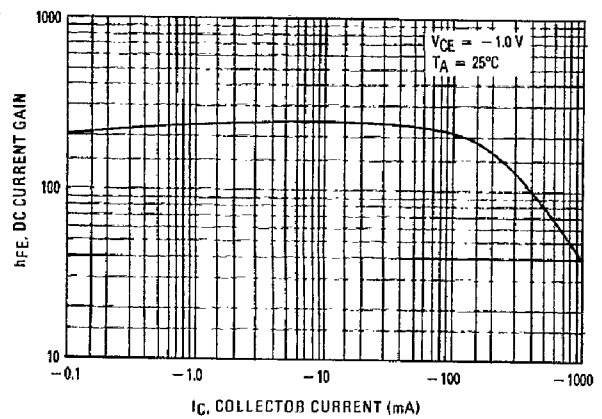


FIGURE 4 - SATURATION REGION

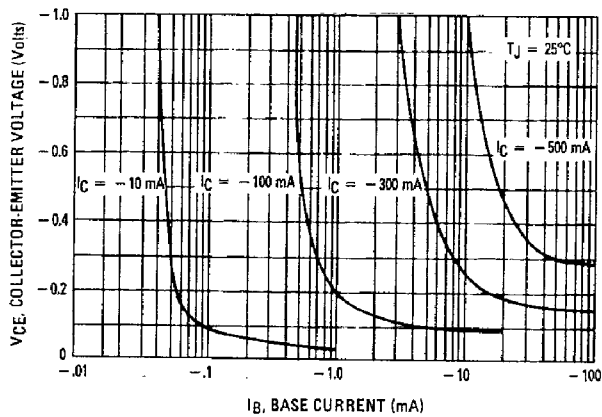


FIGURE 5 - "ON" VOLTAGES

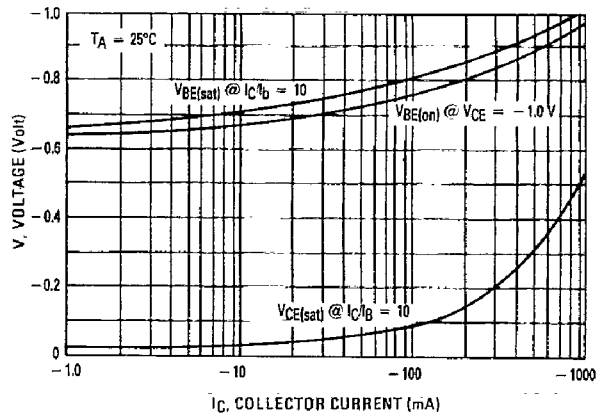


FIGURE 6 - TEMPERATURE COEFFICIENTS

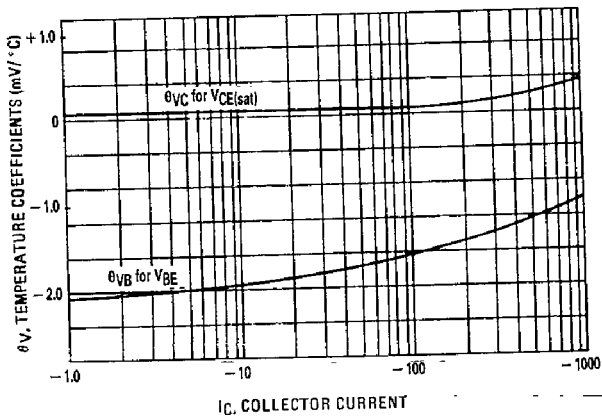
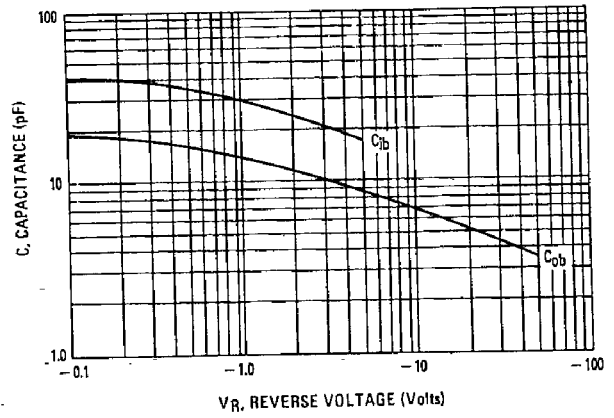
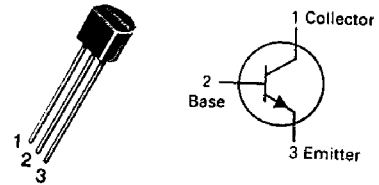


FIGURE 7 - CAPACITANCES



BC337, -16, -25, -40 BC338, -16, -25, -40

CASE 29-04, STYLE 17
TO-92 (TO-226AA)



AMPLIFIER TRANSISTORS

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	BC337	BC338	Unit
Collector-Emitter Voltage	V_{CEO}	45	25	Vdc
Collector-Base Voltage	V_{CBO}	50	30	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	800		mA dc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	PD	625	5.0	mW mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	PD	1.5	12	Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}, I_B = 0$)	$V_{(BR)CEO}$	45 25	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 100\ \mu\text{A}, I_E = 0$)	$V_{(BR)CES}$	50 30	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\ \mu\text{A}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 30\text{ V}, I_E = 0$) ($V_{CB} = 20\text{ V}, I_E = 0$)	I_{CBO}	—	—	100 100	nA dc
Collector Cutoff Current ($V_{CE} = 45\text{ V}, V_{BE} = 0$) ($V_{CE} = 25\text{ V}, V_{BE} = 0$)	I_{CES}	—	—	100 100	nA dc
Emitter Cutoff Current ($V_{EB} = 4.0\text{ V}, I_C = 0$)	I_{EBO}	—	—	100	nA dc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 100\text{ mA}, V_{CE} = 1.0\text{ V}$)	h_{FE}	100	—	630	—
($I_C = 300\text{ mA}, V_{CE} = 1.0\text{ V}$)		100 160 250 60	—	250 400 630	—
Base-Emitter On Voltage ($I_C = 300\text{ mA}, V_{CE} = 1.0\text{ V}$)	$V_{BE(on)}$	—	—	1.2	Vdc
Collector-Emitter Saturation Voltage ($I_C = 500\text{ mA}, I_B = 50\text{ mA}$)	$V_{CE(sat)}$	—	—	0.7	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Output Capacitance ($V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$)	C_{ob}	—	15	—	pF
Current-Gain Bandwidth Product ($I_C = 10\text{ mA}, V_{CE} = 5.0\text{ V}, f = 100\text{ MHz}$)	f_T	—	210	—	MHz

FIGURE 1 - THERMAL RESPONSE

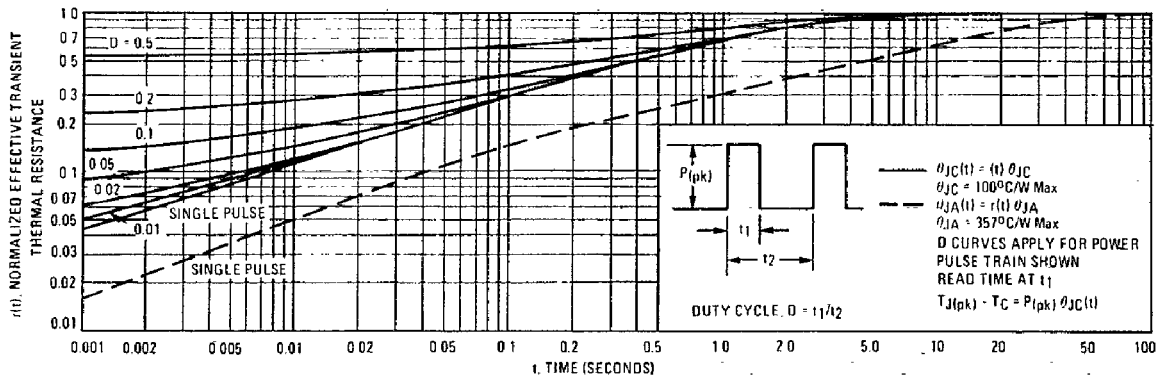


FIGURE 2 - ACTIVE REGION SAFE OPERATING AREA

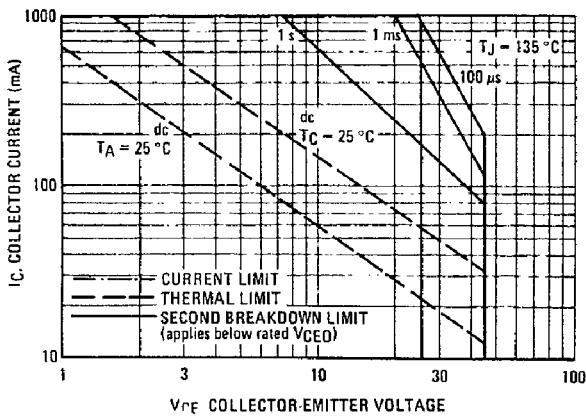


FIGURE 3 - DC CURRENT GAIN

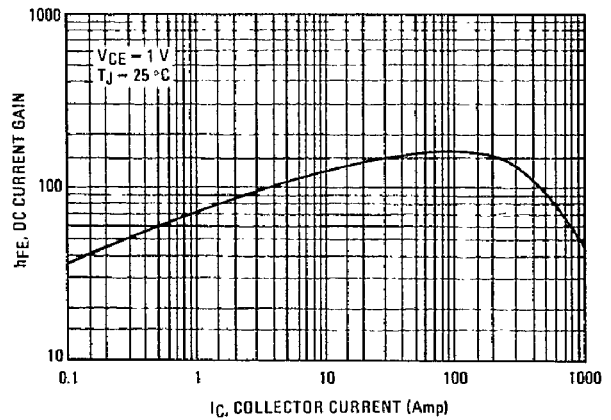


FIGURE 4 - SATURATION REGION

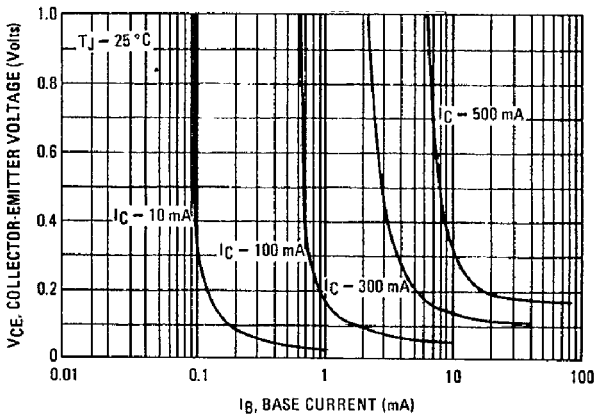
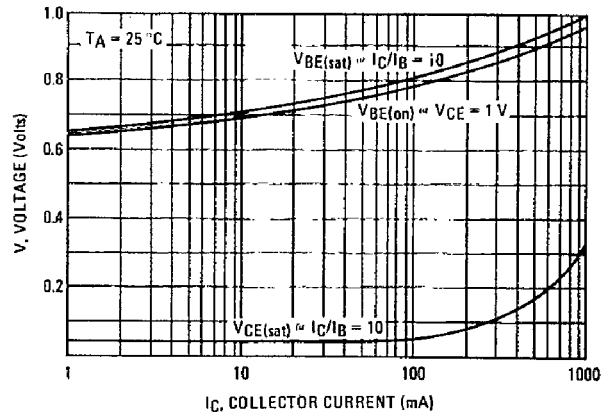


FIGURE 5 - "ON" VOLTAGES



BC337, -16, -25, -40 BC338, -16, -25, -40

FIGURE 6 – TEMPERATURE COEFFICIENTS

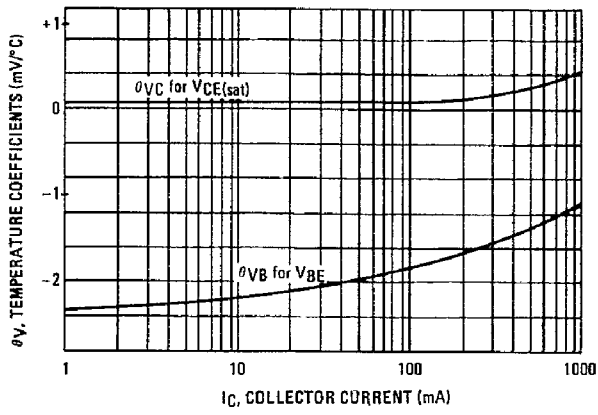


FIGURE 7 – CAPACITANCES

