

BCP53 Series

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

Characteristics	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Base Breakdown Voltage ($I_C = -100\ \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	-100	-	-	Vdc
Collector-Emitter Breakdown Voltage ($I_C = -1.0\ \text{mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	-80	-	-	Vdc
Collector-Emitter Breakdown Voltage ($I_C = -100\ \mu\text{Adc}$, $R_{BE} = 1.0\ \text{kohm}$)	$V_{(BR)CER}$	-100	-	-	Vdc
Emitter-Base Breakdown Voltage ($I_E = -10\ \mu\text{Adc}$, $I_C = 0$)	$V_{(BR)EBO}$	-5.0	-	-	Vdc
Collector-Base Cutoff Current ($V_{CB} = -30\ \text{Vdc}$, $I_E = 0$)	I_{CBO}	-	-	-100	nAdc
Emitter-Base Cutoff Current ($V_{EB} = -5.0\ \text{Vdc}$, $I_C = 0$)	I_{EBO}	-	-	-10	μAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = -5.0\ \text{mAdc}$, $V_{CE} = -2.0\ \text{Vdc}$) All Part Types ($I_C = -150\ \text{mAdc}$, $V_{CE} = -2.0\ \text{Vdc}$) BCP53 BCP53-10 BCP53-16 ($I_C = -500\ \text{mAdc}$, $V_{CE} = -2.0\ \text{Vdc}$) All Part Types	h_{FE}	25	-	-	-
		40	-	250	
		63	-	160	
		100	-	250	
		25	-	-	
Collector-Emitter Saturation Voltage ($I_C = -500\ \text{mAdc}$, $I_B = -50\ \text{mAdc}$)	$V_{CE(sat)}$	-	-	-0.5	Vdc
Base-Emitter On Voltage ($I_C = -500\ \text{mAdc}$, $V_{CE} = -2.0\ \text{Vdc}$)	$V_{BE(on)}$	-	-	-1.0	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain - Bandwidth Product ($I_C = -10\ \text{mAdc}$, $V_{CE} = -5.0\ \text{Vdc}$, $f = 35\ \text{MHz}$)	f_T	-	50	-	MHz
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BCP53 Series

TYPICAL CHARACTERISTICS

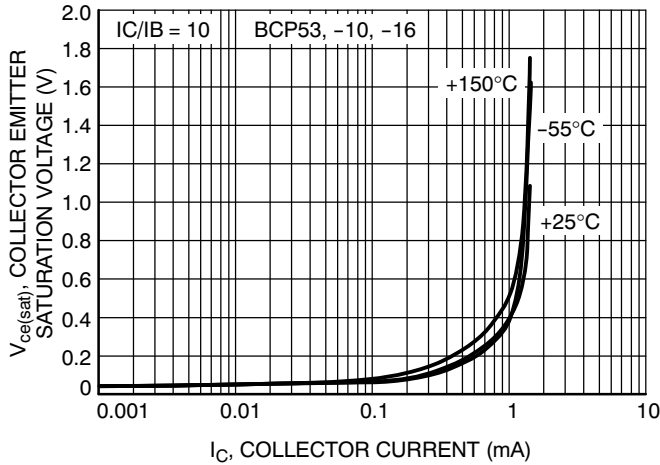


Figure 1. Collector Emitter Saturation Voltage vs. Collector Current

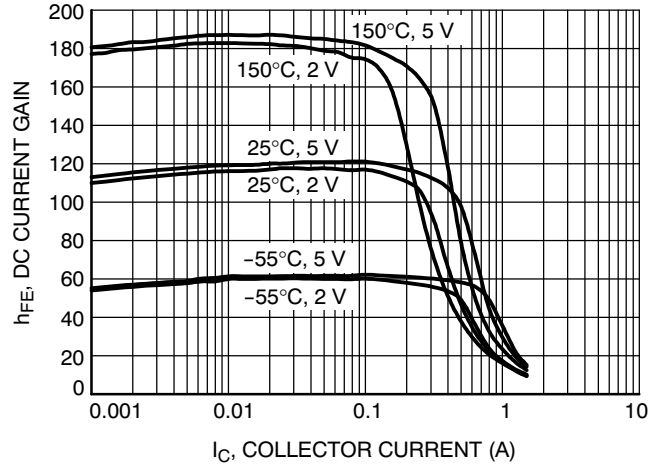


Figure 2. DC Current Gain vs. Collector Current (BCP53)

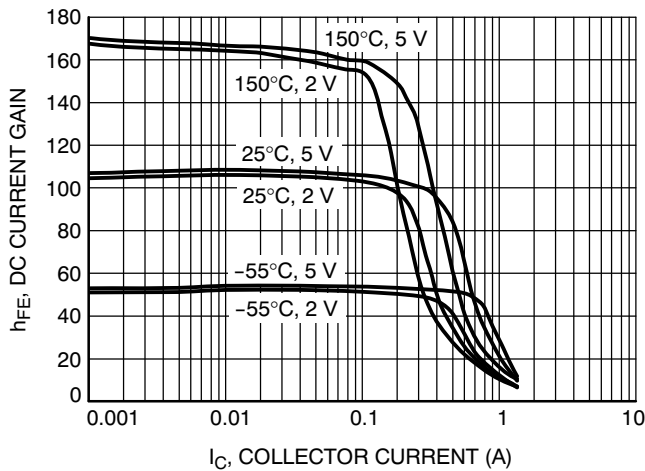


Figure 3. DC Current Gain vs. Collector Current (BCP53-10)

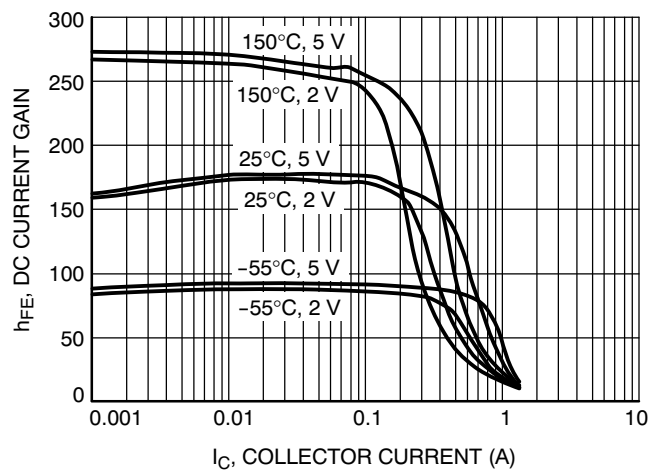


Figure 4. DC Current Gain vs. Collector Current (BCP53-16)

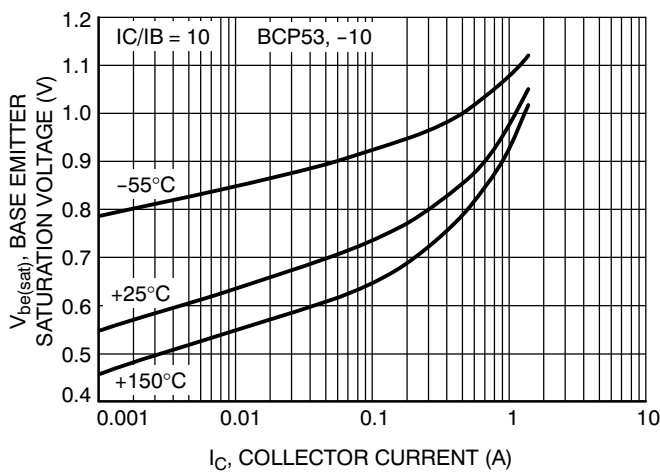


Figure 5. BCP53, -10 Base Emitter Saturation Voltage vs. Collector Current

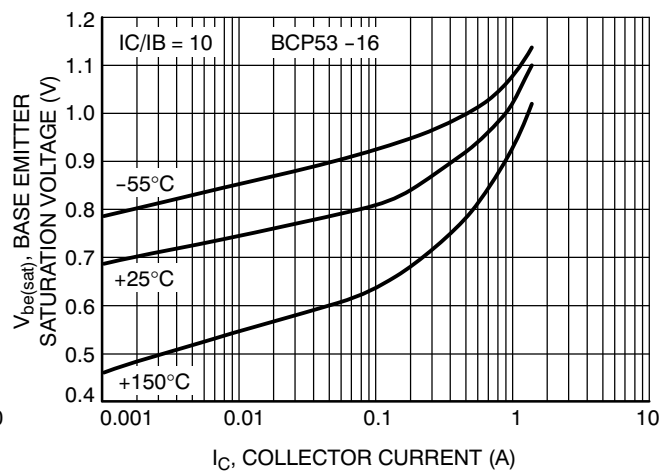


Figure 6. BCP53-16 Base Emitter Saturation Voltage vs. Collector Current

BCP53 Series

TYPICAL CHARACTERISTICS

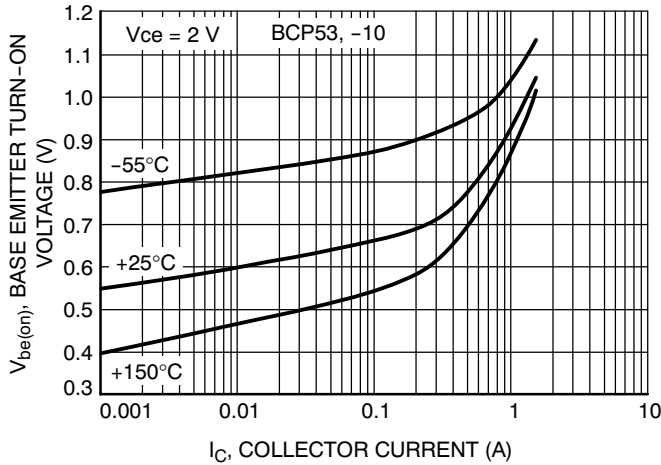


Figure 7. BCP53, -10 Base Emitter Turn-On Voltage vs. Collector Current $V_{BE(on)}$

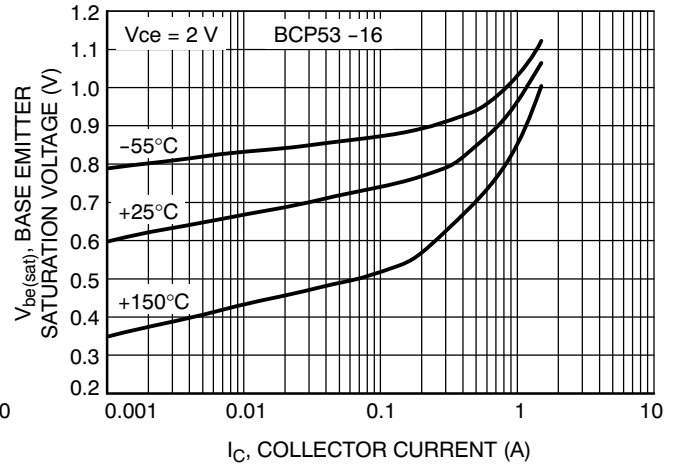


Figure 8. BCP53-16 Base Emitter Turn-On Voltage vs. Collector Current

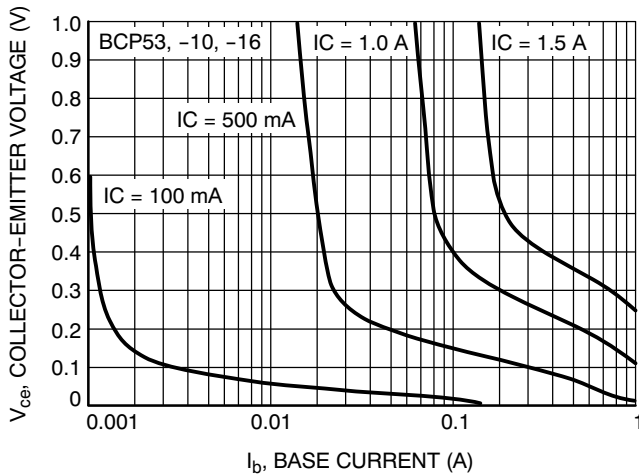


Figure 9. BCP53, -10, -16 Saturation Region

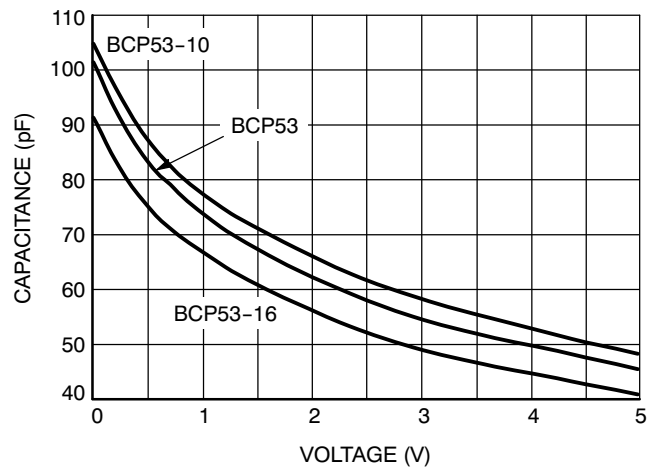


Figure 10. Input Capacitance

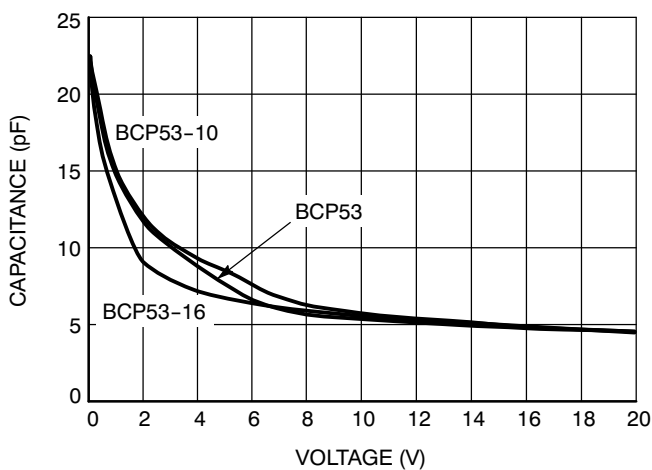


Figure 11. Output Capacitance

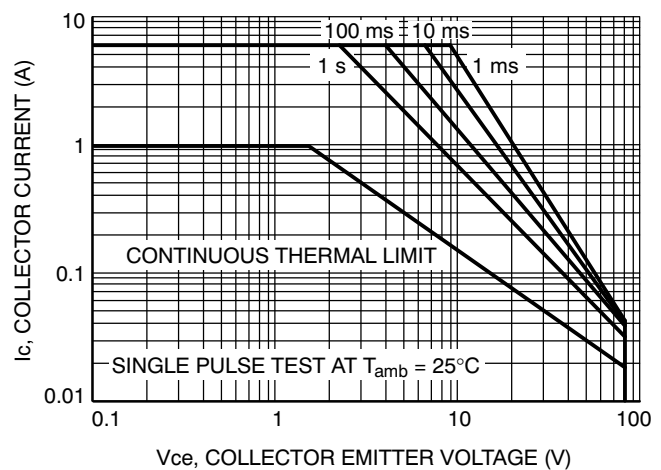
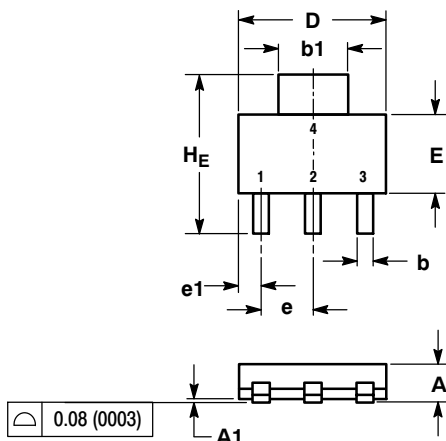


Figure 12. Standard Operating Area

BCP53 Series

PACKAGE DIMENSIONS

SOT-223 (TO-261)
CASE 318E-04
ISSUE M

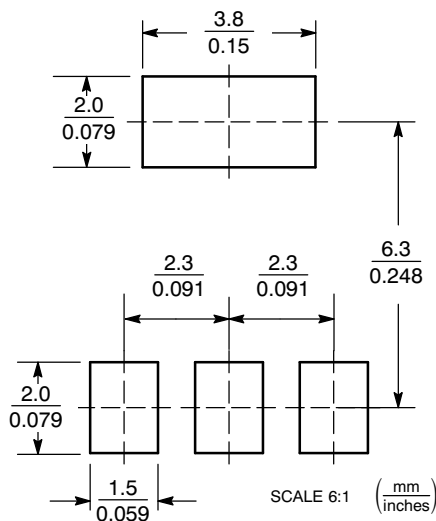


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.63	1.75	0.060	0.064	0.068
A1	0.02	0.06	0.10	0.001	0.002	0.004
b	0.60	0.75	0.89	0.024	0.030	0.035
b1	2.90	3.06	3.20	0.115	0.121	0.126
c	0.24	0.29	0.35	0.009	0.012	0.014
D	6.30	6.50	6.70	0.249	0.256	0.263
E	3.30	3.50	3.70	0.130	0.138	0.145
e	2.20	2.30	2.40	0.087	0.091	0.094
e1	0.85	0.94	1.05	0.033	0.037	0.041
L1	1.50	1.75	2.00	0.060	0.069	0.078
HE	6.70	7.00	7.30	0.264	0.276	0.287
θ	0°	-	10°	0°	-	10°

- STYLE 1:
- PIN 1. BASE
 - COLLECTOR
 - EMITTER
 - COLLECTOR

SOLDERING FOOTPRINT



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