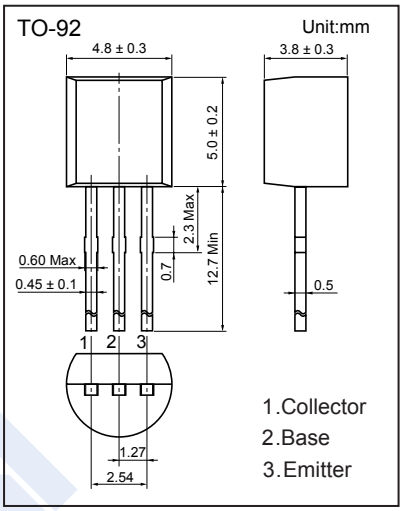
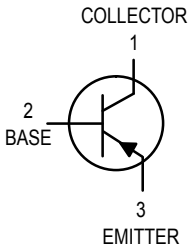
PNP Transistors

BC556 ~ BC558 (KC556 ~ KC558)



■ Features

- Collector Current Capability I_C=-0.1A
- Collector Emitter Voltage V_{CEO}=-65V/-45V/-30V



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	BC556	BC557	BC558	Unit
Collector - Base Voltage	V_{CBO}	-80	-50	-30	V
Collector - Emitter Voltage	V_{CEO}	-65	-45	-30	
Emitter - Base Voltage	V_{EBO}	-5			
Collector Current - Continuous	I_C	-0.1			A
Collector Power Dissipation @ Ta = 25°C	P_C	625			mW/℃
Derate above 25°C		5			mW/℃
Collector Power Dissipation @ Tc = 25°C	P_C	1.5			W
Derate above 25°C		12			mW/℃
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200			°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3			
Junction Temperature	T_J	150			℃
Storage Temperature range	T_{stg}	-55 to 150			

PNP Transistors

BC556 ~ BC558 (KC556 ~ KC558)

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Test Conditions		Min	Typ	Max	Unit
Collector- base breakdown voltage		V_{CBO}	I_C= -100 μA, I_E=0	BC556	-80			V
				BC557	-50			
				BC558	-30			
Collector- emitter breakdown voltage		V_{CEO}	I_C= -2 mA, I_B=0	BC556	-65			
				BC557	-45			
				BC558	-30			
Emitter - base breakdown voltage		V_{EBO}	I_E= -100 μ A, I_C=0		-5			
Collector-base cut-off current		I_{CBO}	V_{CB}= -80 V , I_E=0	BC556			-100	nA
			V_{CB}= -50 V , I_E=0	BC557				
			V_{CB}= -30 V , I_E=0	BC558				
Collector- emittercut-off current		I_{CES}	V_{CES}= -40 V , I_E=0	BC556			-100	
			V_{CES}= -20 V , I_E=0	BC557				
				BC558				
Collector- emittercut-off current	BC556	I_{CES}	V_{CES}= -20 V , I_E=0, Ta = 125℃				-4	uA
	BC557							
	BC558							
Emitter cut-off current		I_{EBO}	V_{EB}= -5V , I_C=0				-100	nA
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=-10 mA, I_B=-0.5mA				-0.3	V
			I_C=-100 mA, I_B=-5mA				-0.65	
Base - emitter saturation voltage		$V_{BE(sat)}$	I_C=-10 mA, I_B=-0.5mA			-0.7		
			I_C=-100 mA, I_B=-5mA			-1		
Base - emitter on voltage		$V_{BE(on)}$	V_{CE}= -5V, I_C= -2mA		-0.55		-0.7	
			V_{CE}= -5V, I_C= -10mA				-0.82	
DC current gain	BC557A	h_{FE}	V_{CE}= -5V, I_C= -10 uA			90		
	BC556B/557B/558B					150		
	BC557C					270		
DC current gain	BC556	h_{FE}	V_{CE}= -5V, I_C= -2 mA		120		500	
	BC557				120		800	
	BC558				120		800	
	BC557A				120		220	
	BC556A/557B/558B				180		460	
	BC557C				420		800	
DC current gain	BC557A	h_{FE}	V_{CE}= -5V, I_C= -100 mA			120		
	BC556B/557B/558B					180		
	BC557C					300		
Small–Signal Current Gain	BC556	h_{fe}	V_{CE}= -5V, I_C= -2 mA, f=1KHz		125		500	
	BC557/558				125		900	
	BC557A				125		260	
	BC556B/557B				240		500	
	BC557C				450		900	

PNP Transistors

BC556 ~ BC558 (KC556 ~ KC558)

■ Electrical Characteristics Ta = 25℃

Noise Figure	BC556	NF	I_C = –0.2 mA, V_{CE} = –5 V, R_S = 2.0 kΩ, f = 1kHz, Df = 200 Hz			10	dB
	BC557					10	
	BC558					10	
Collector output capacitance		C_{ob}	V_{CB}= -10V, I_C= 0,f=1MHz			6	pF
Transition frequency	BC556	f_T	V_{CE}= -5V, I_C= -10mA,f=100MHz		280		MHz
	BC557				320		
	BC558				360		

■ Typical Characterisitics

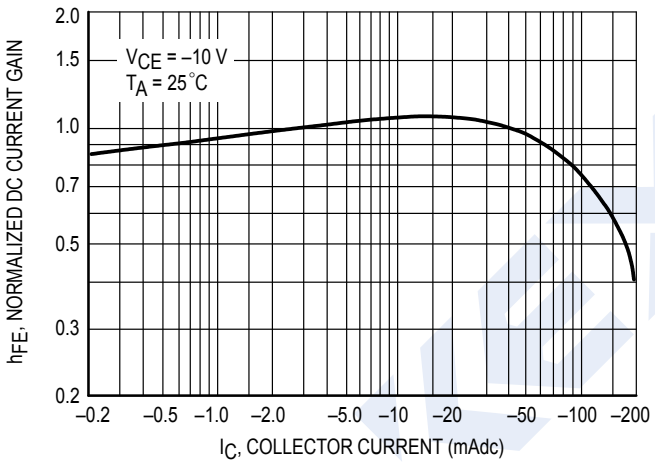


Figure 1. Normalized DC Current Gain

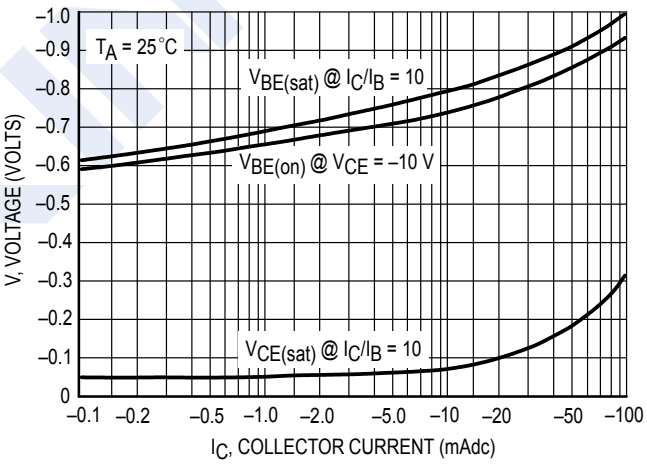


Figure 2. "Saturation" and "On" Voltages

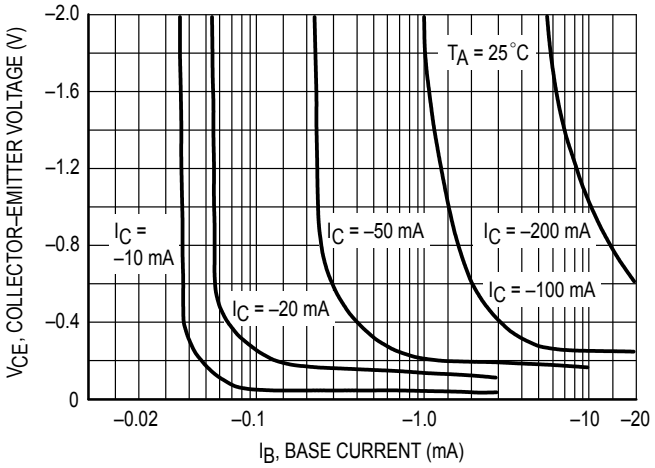


Figure 3. Collector Saturation Region

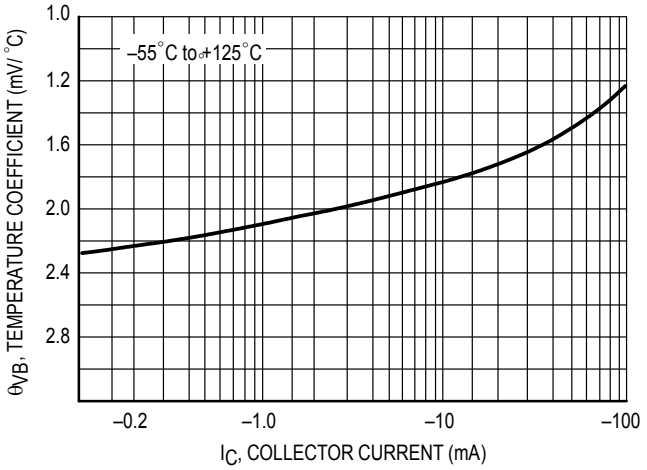


Figure 4. Base–Emitter Temperature Coefficient

PNP Transistors

BC556 ~ BC558 (KC556 ~ KC558)

■ Typical Characterisitics

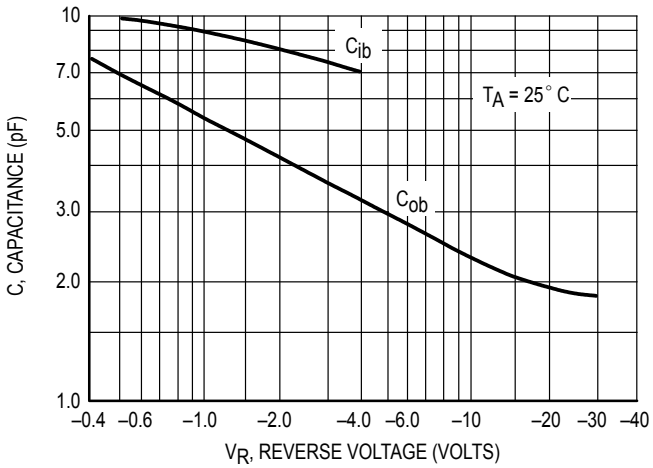


Figure 5. Capacitances

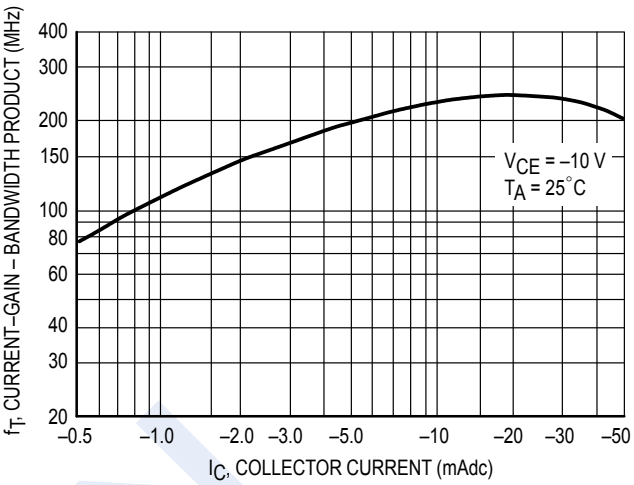


Figure 6. Current–Gain – Bandwidth Product

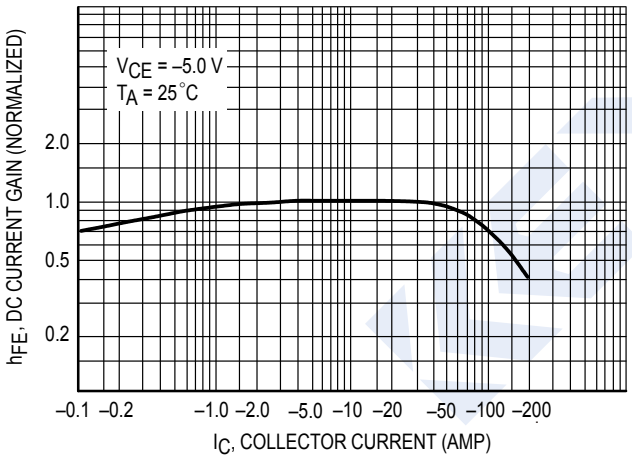


Figure 7. DC Current Gain

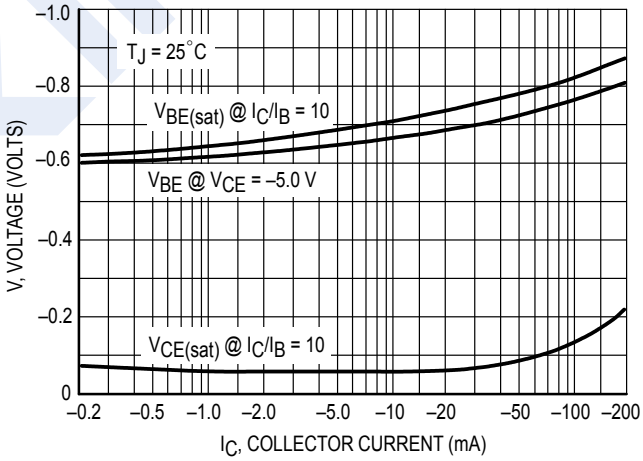


Figure 8. “On” Voltage

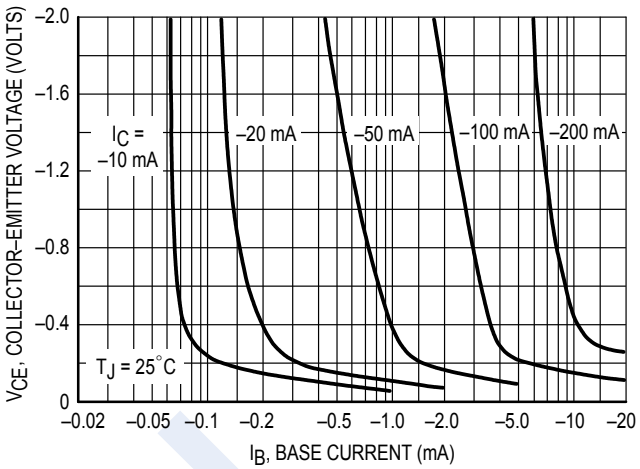


Figure 9. Collector Saturation Region

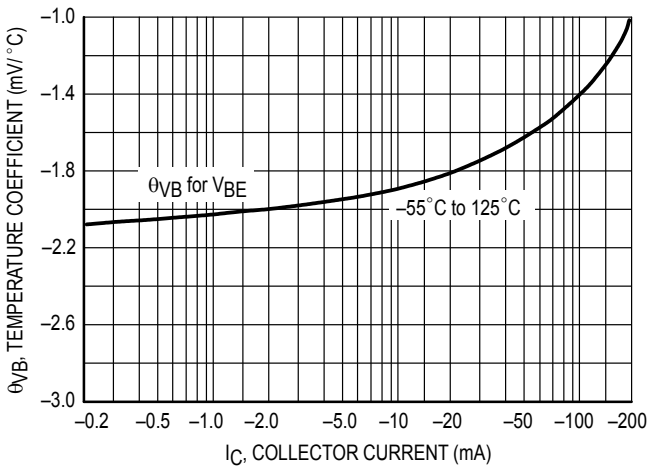


Figure 10. Base–Emitter Temperature Coefficient

PNP Transistors

BC556 ~ BC558 (KC556 ~ KC558)

■ Typical Characterisitics

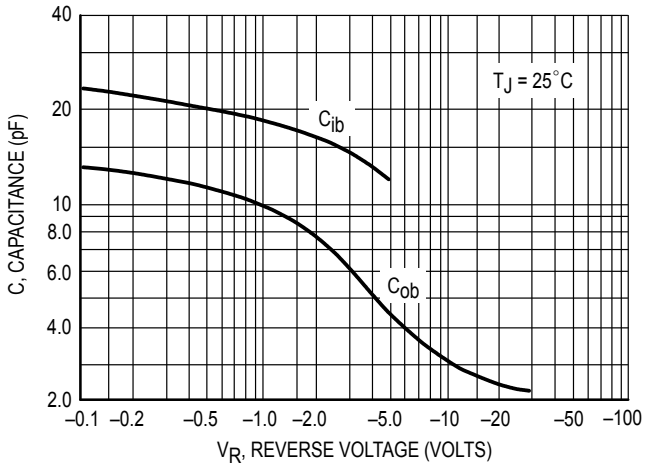


Figure 11. Capacitance

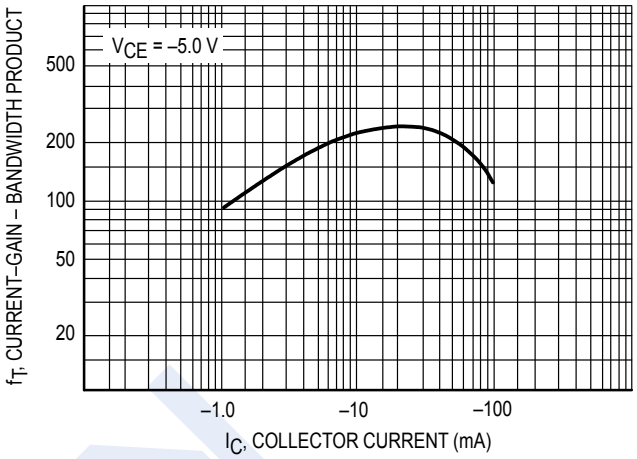


Figure 12. Current–Gain – Bandwidth Product

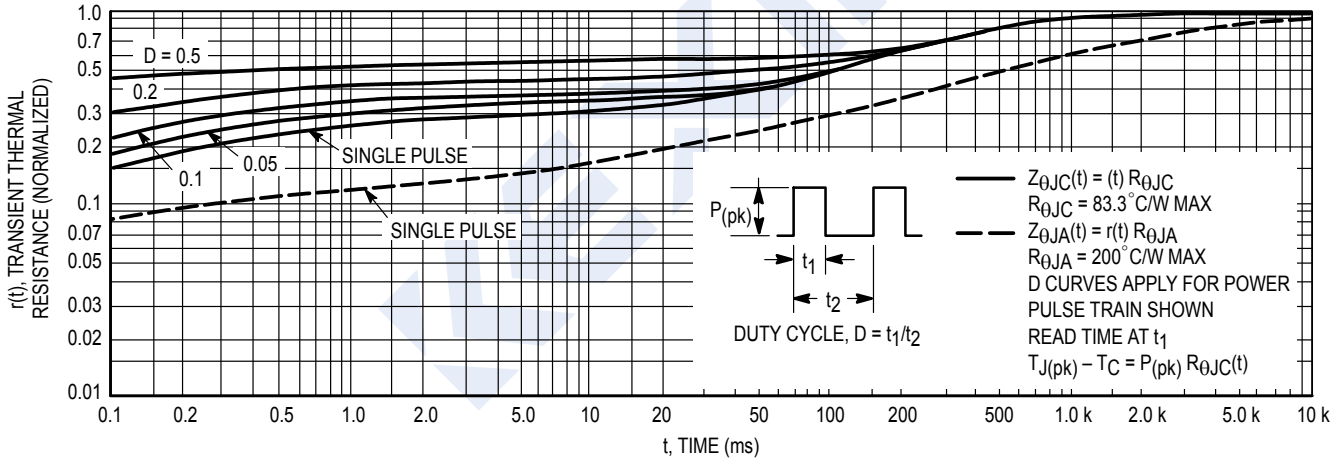


Figure 13. Thermal Response

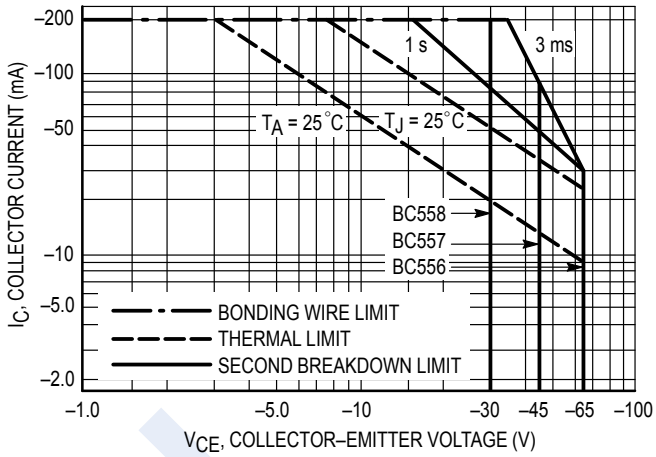


Figure 14. Active Region — Safe Operating Area