

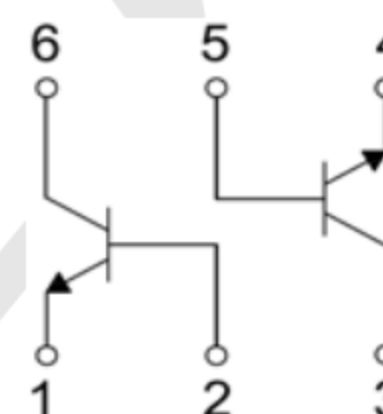
Features

- Epitaxial planar die construction
- Ideal for low power amplification and switching

Ordering Information

- Shipping Qty:3000/7inch Tape& Reel

Circuit Diagram



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	0.2	A
P _C	Collector Power Dissipation	0.2	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=30V, I_E=0$			0.05	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.05	μA
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{BE(off)}=3V$			0.05	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=0.1mA$	40			
	$h_{FE(2)}$	$V_{CE}=1V, I_C=1mA$	70			
	$h_{FE(3)}$	$V_{CE}=1V, I_C=10mA$	100		300	
	$h_{FE(4)}$	$V_{CE}=1V, I_C=50mA$	60			
	$h_{FE(5)}$	$V_{CE}=1V, I_C=100mA$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=10mA, I_B=1mA$			0.2	V
	$V_{CE(sat)2}$	$I_C=50mA, I_B=5mA$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=10mA, I_B=1mA$	0.65		0.85	V
	$V_{BE(sat)2}$	$I_C=50mA, I_B=5mA$			0.95	V
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300			MHz
Collector output capacitance	C_{ob}	$V_{CB}=5V, I_E=0, f=1MHz$			4	pF
Noise figure	NF	$V_{CE}=5V, I_C=0.1mA, f=1kHz, R_S=1K\Omega$			5	dB
Delay time	t_d	$V_{CC}=3V, V_{BE(off)}=-0.5V$			35	nS
Rise time	t_r	$I_C=10mA, I_{B1}=-I_{B2}=1mA$			35	nS
Storage time	t_s	$V_{CC}=3V, I_C=10mA$			200	nS
Fall time	t_f	$I_{B1}=-I_{B2}=1mA$			50	nS

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

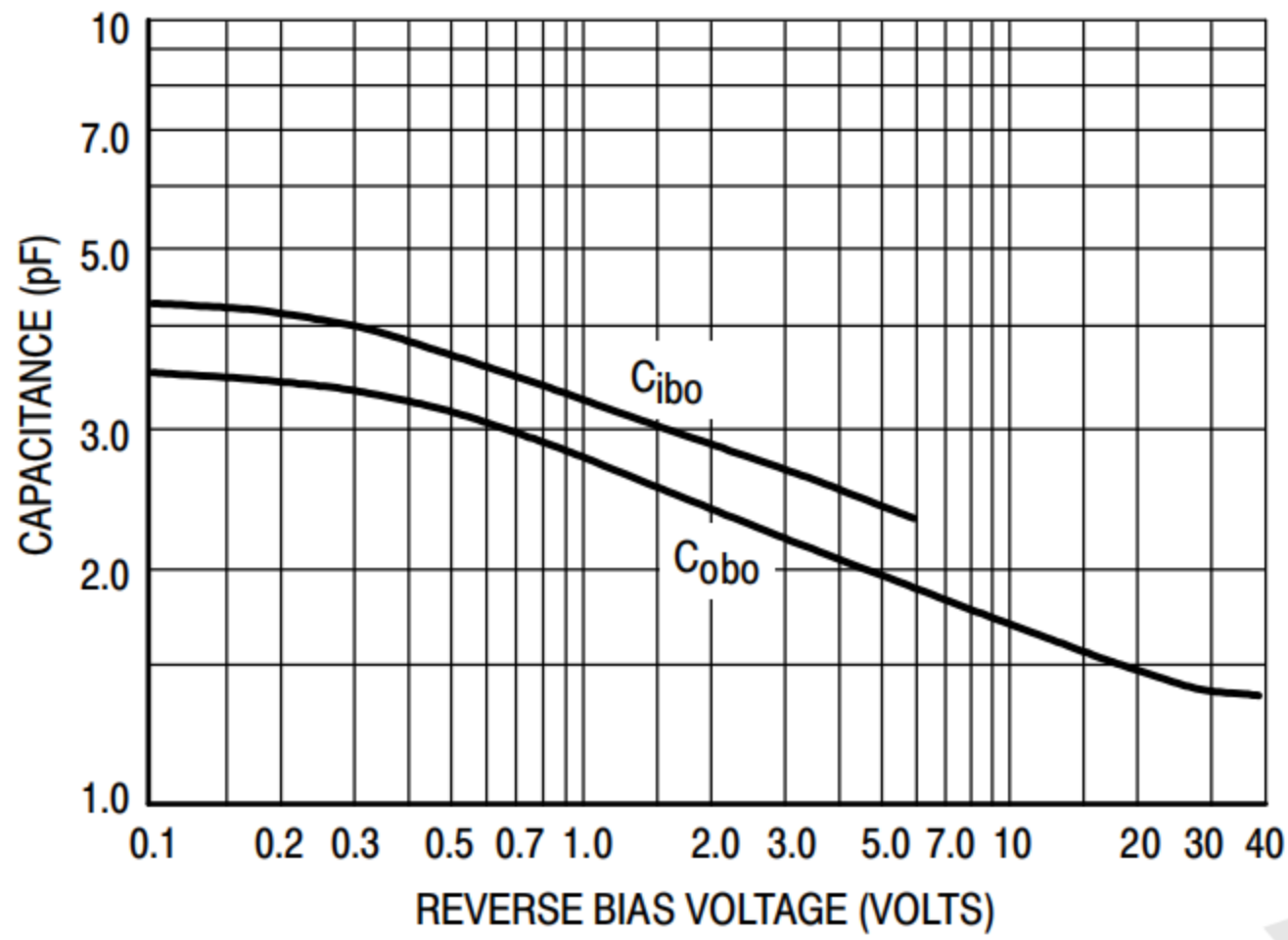


Figure 3. Capacitance

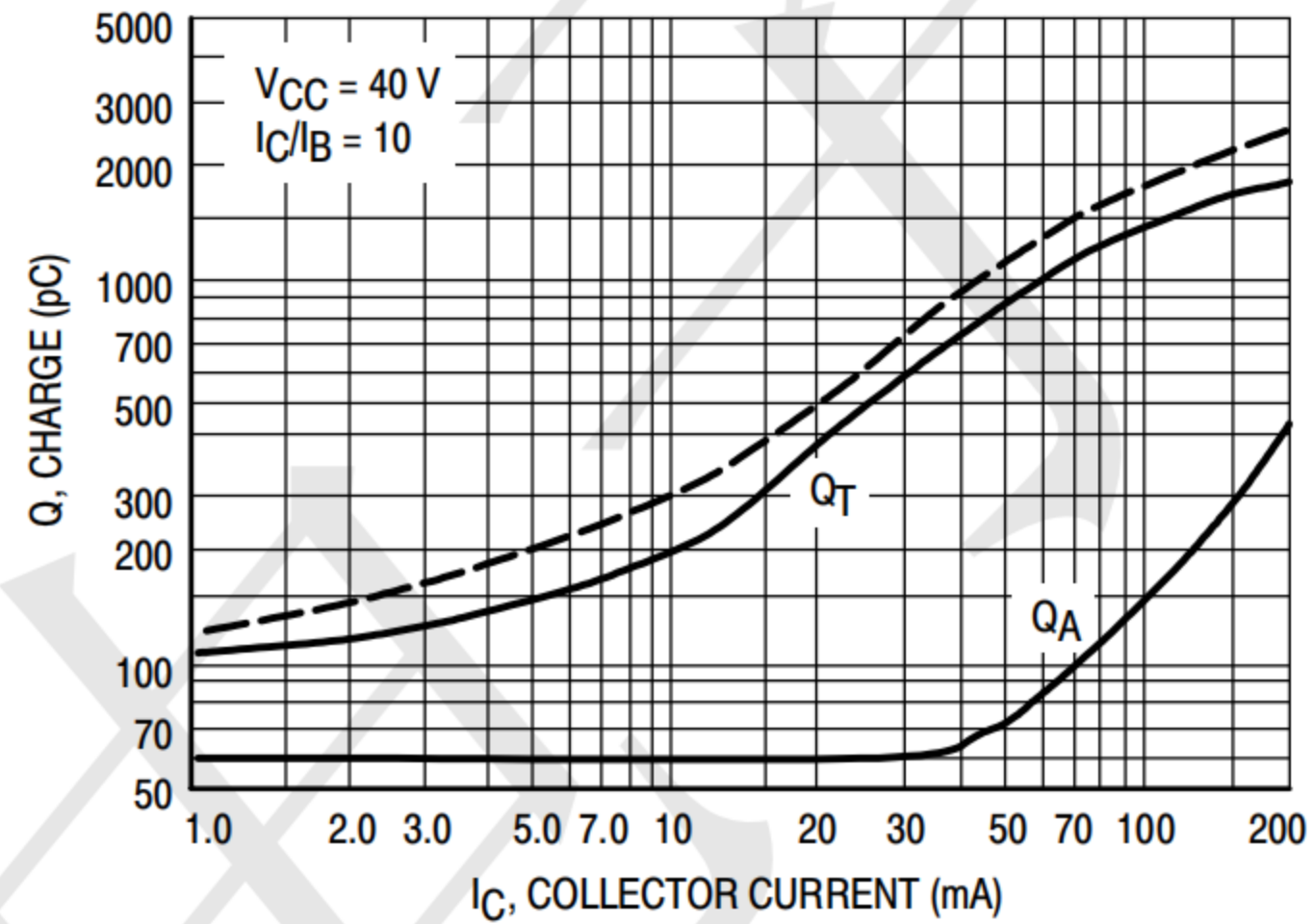


Figure 4. Charge Data

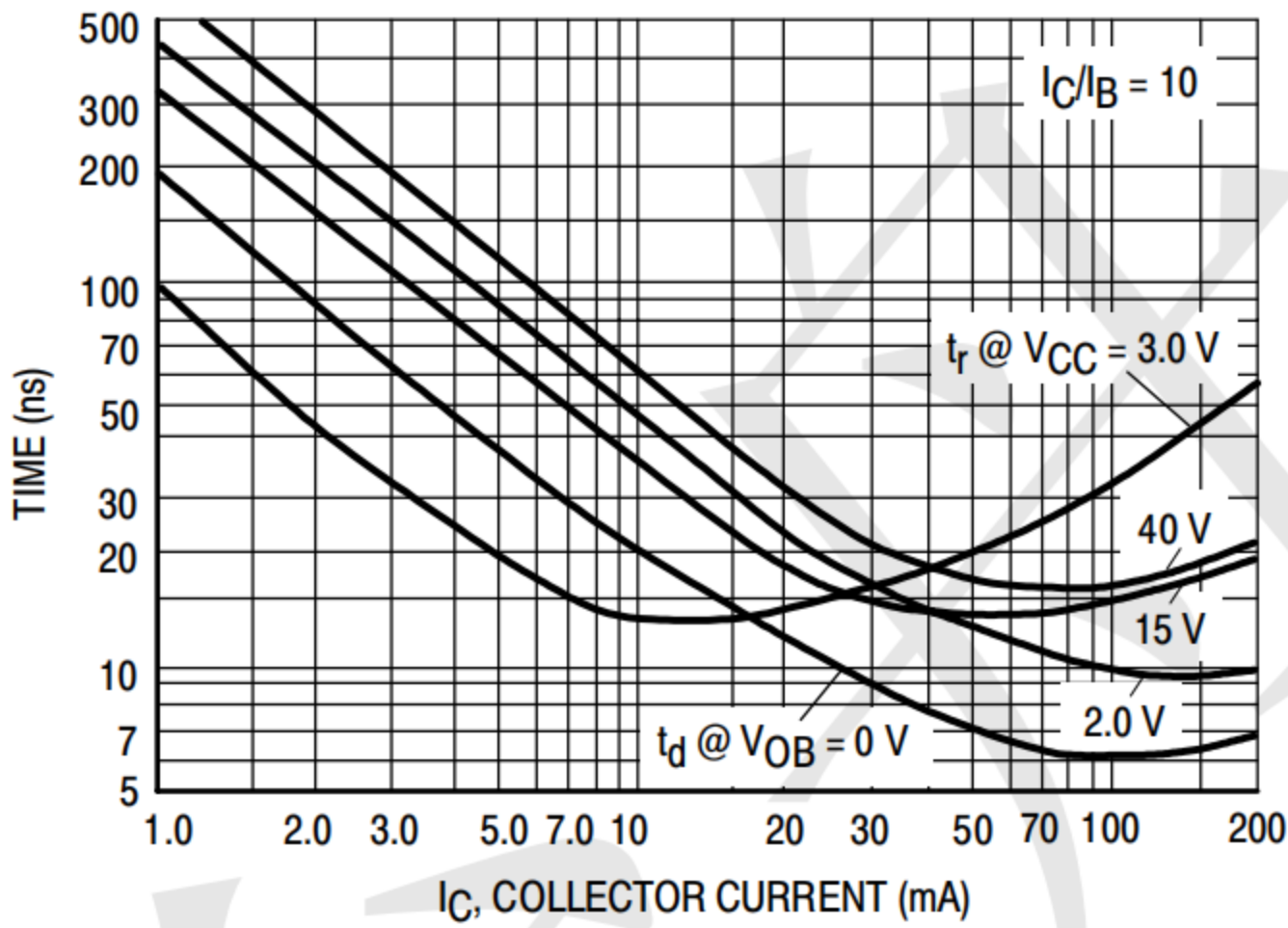


Figure 5. Turn-On Time

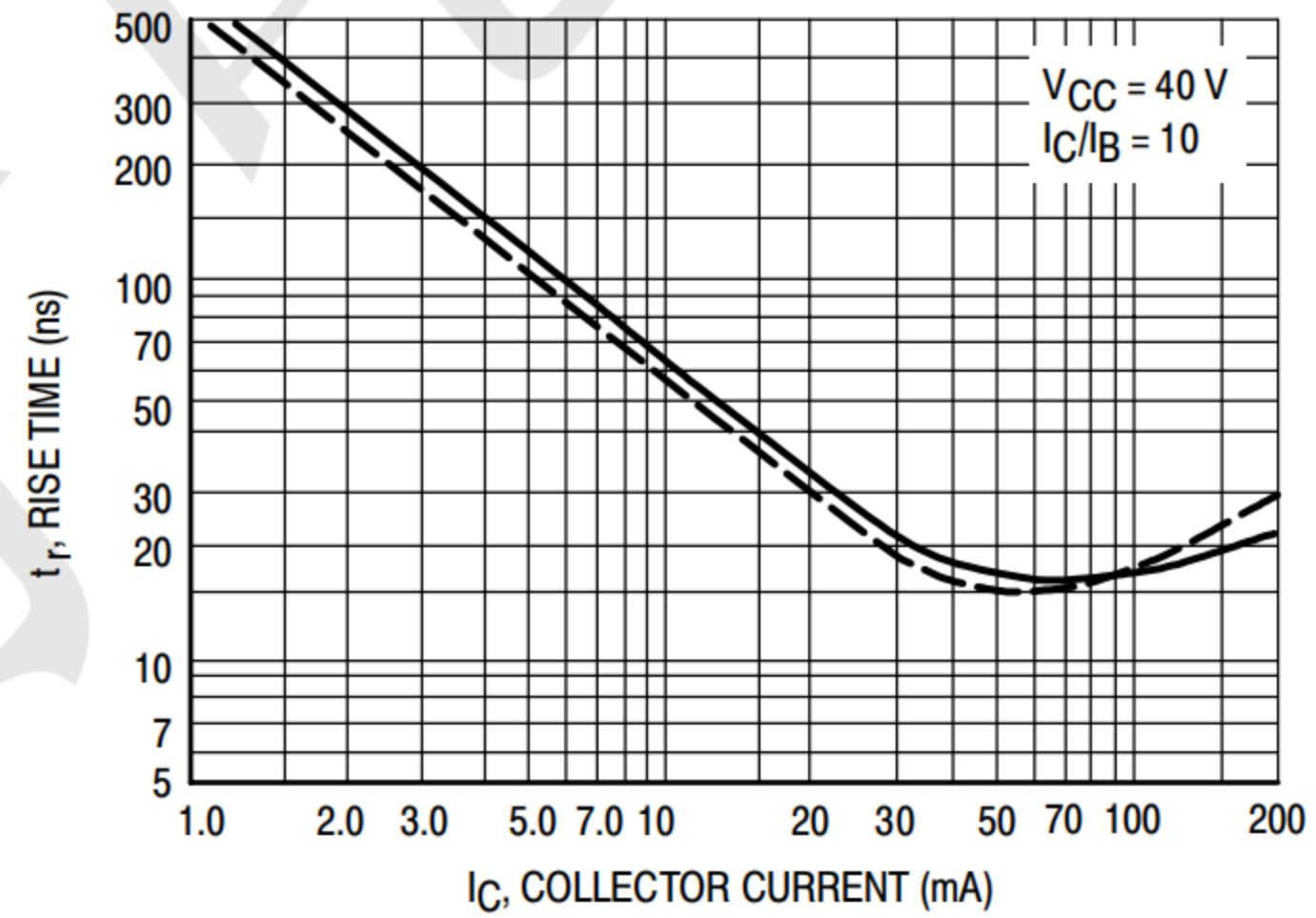


Figure 6. Rise Time

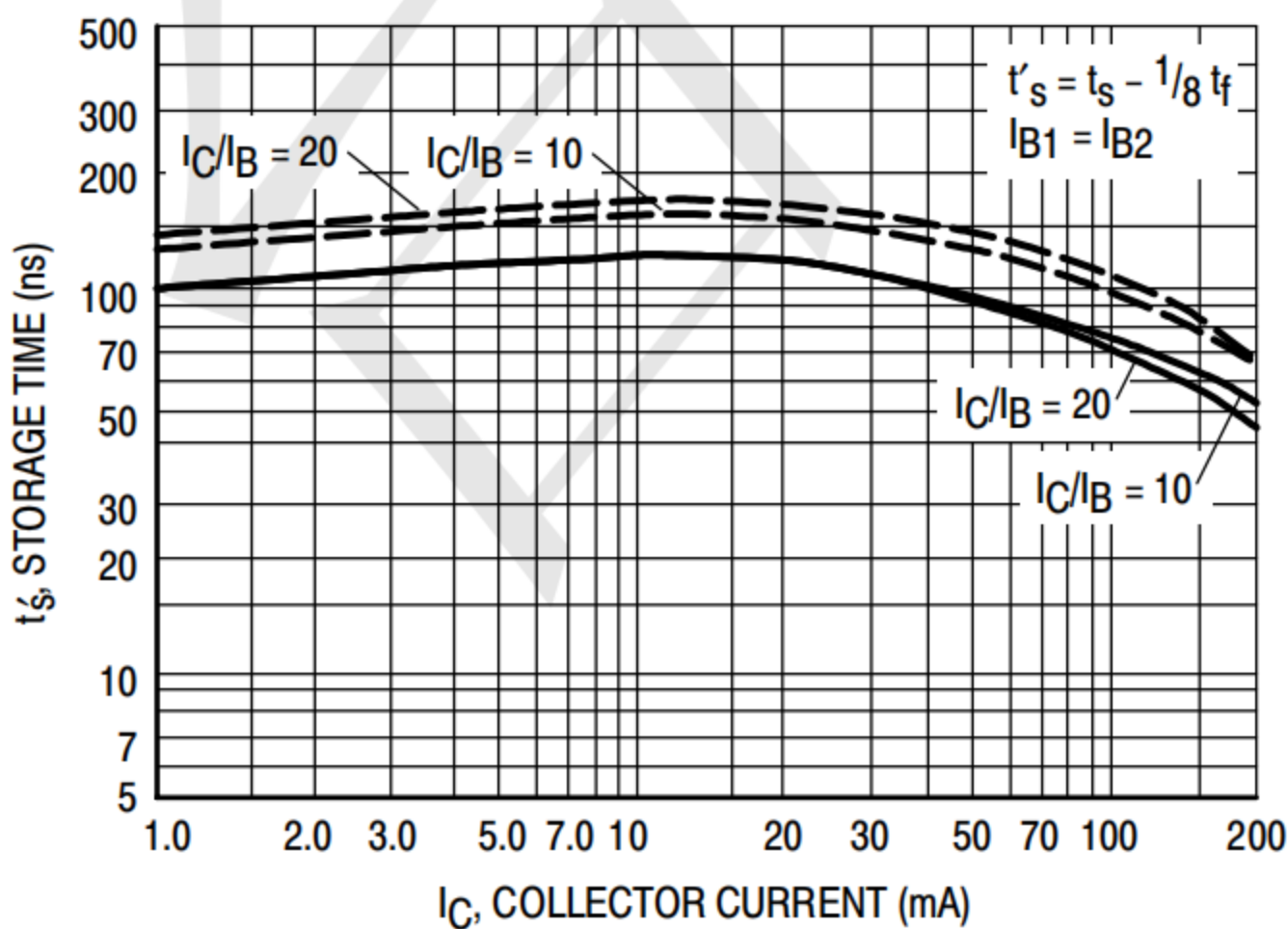


Figure 7. Storage Time

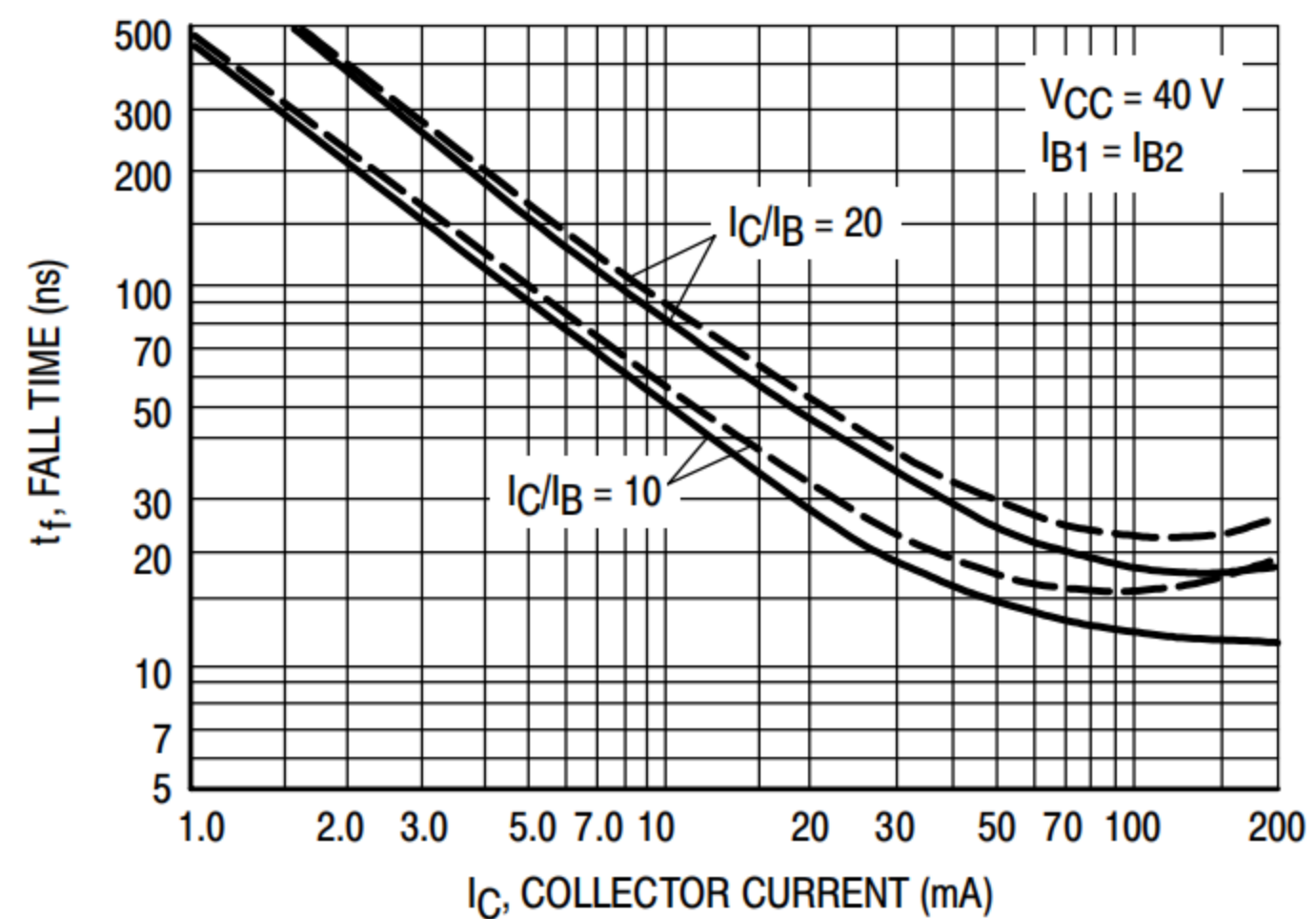


Figure 8. Fall Time

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

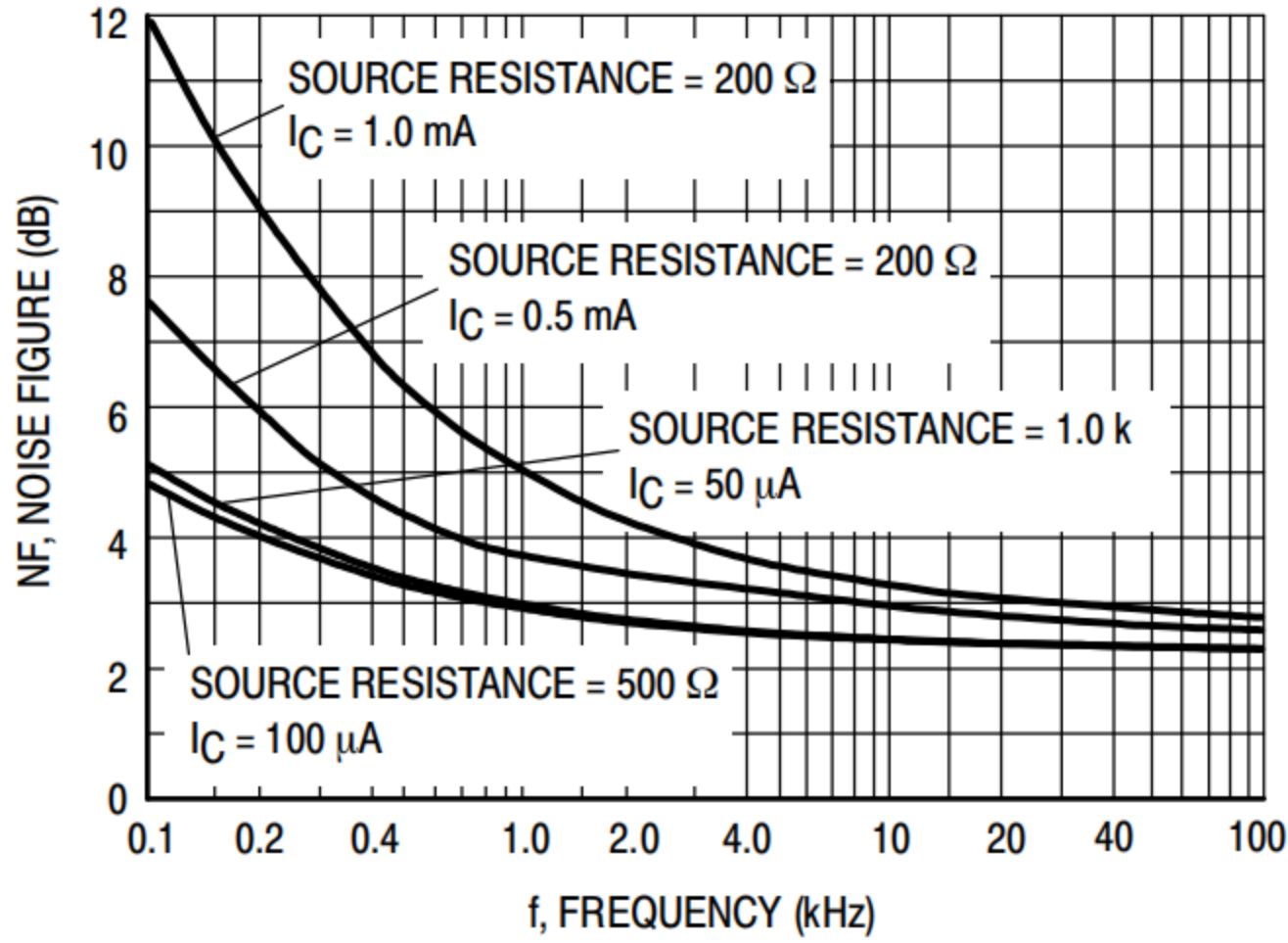


Figure 9. Noise Figure

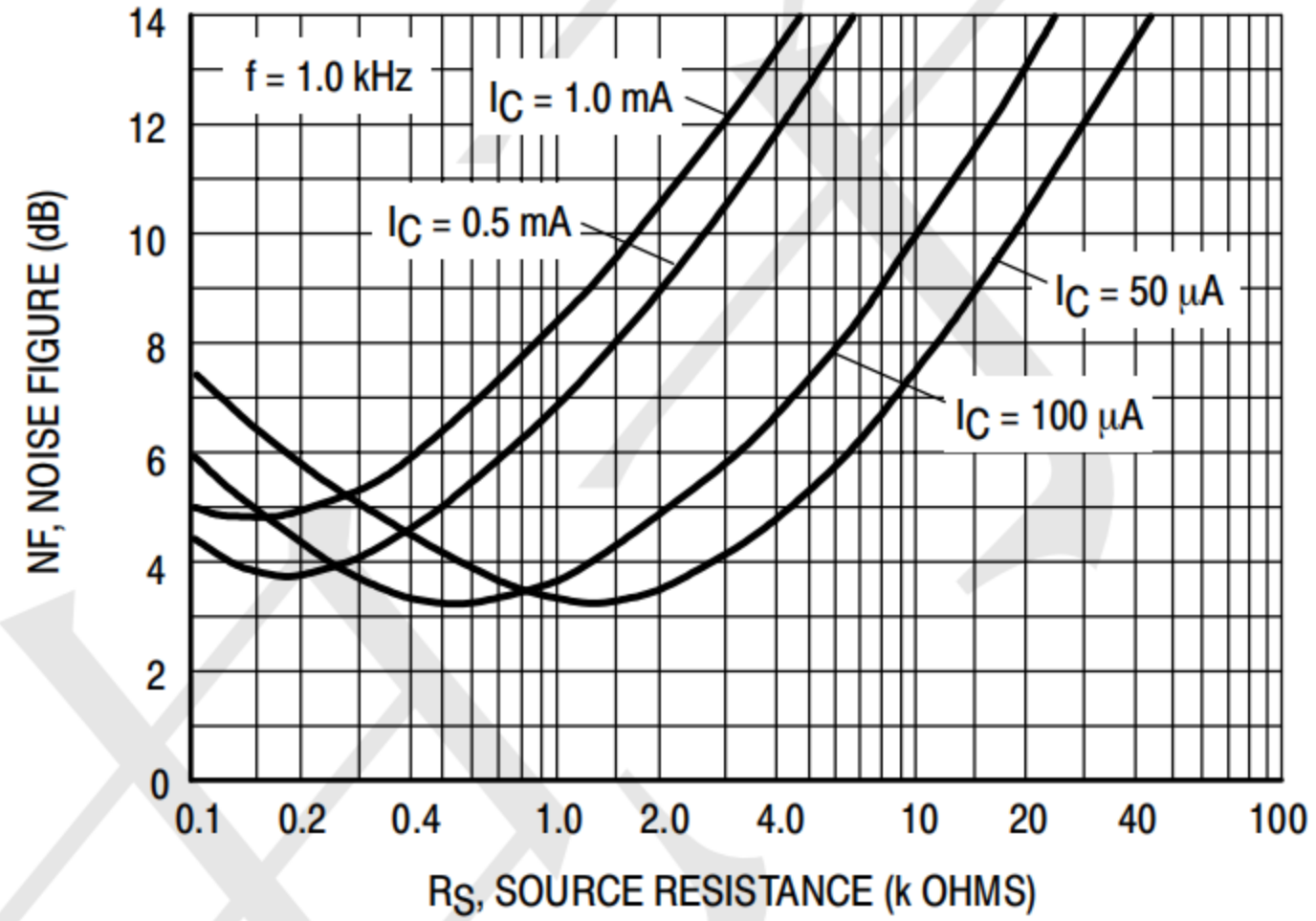


Figure 10. Noise Figure

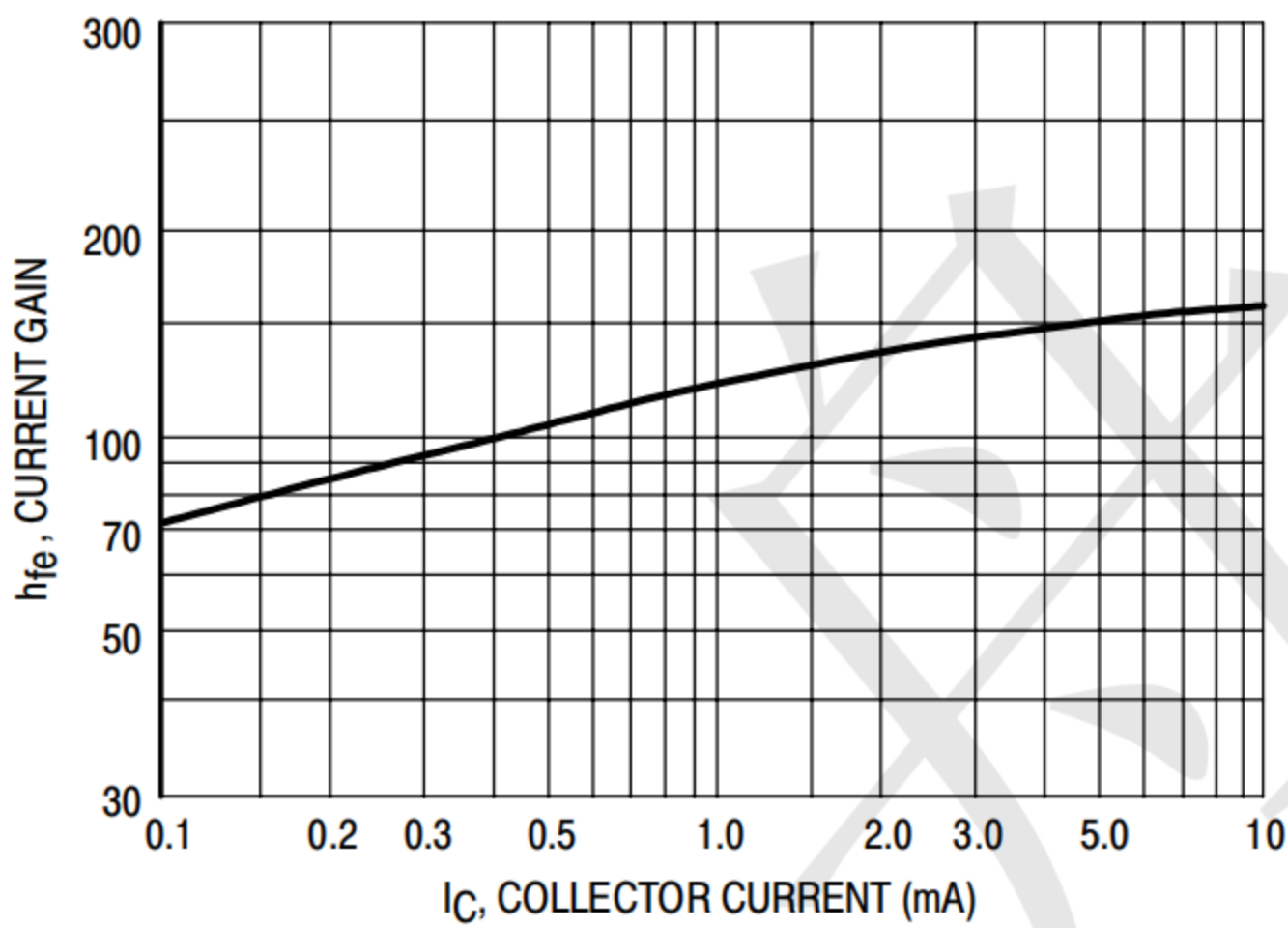


Figure 11. Current Gain

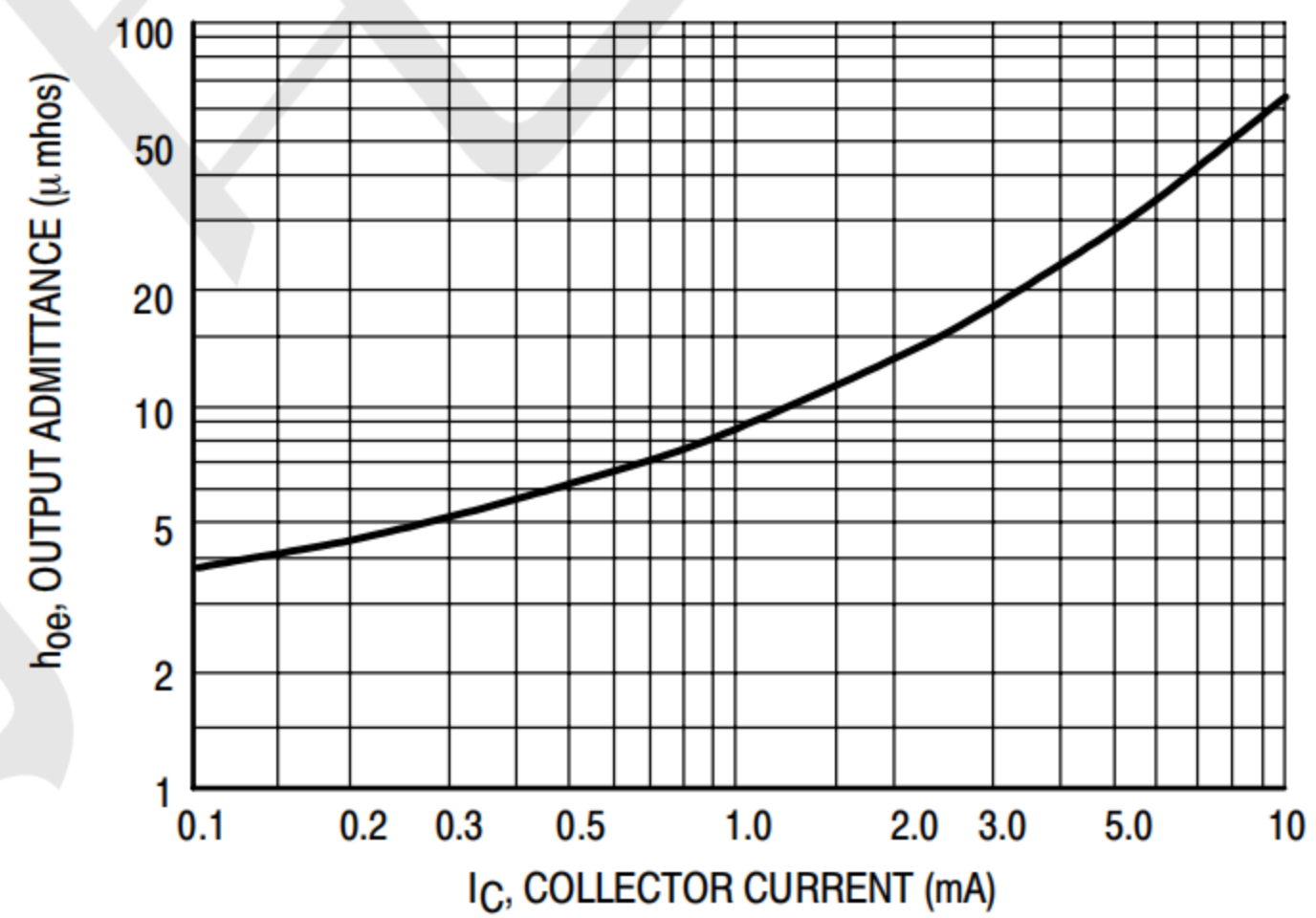


Figure 12. Output Admittance

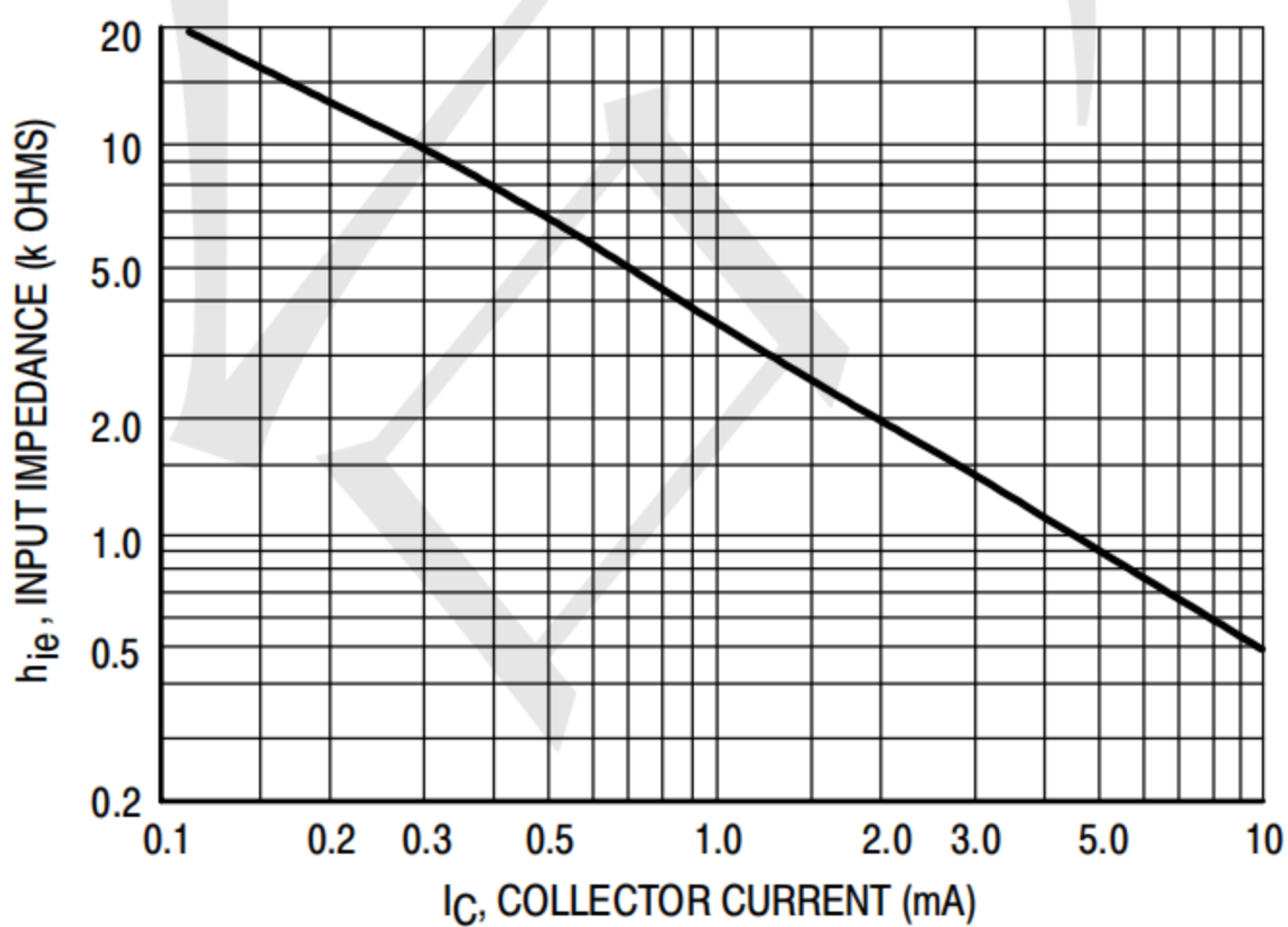


Figure 13. Input Impedance

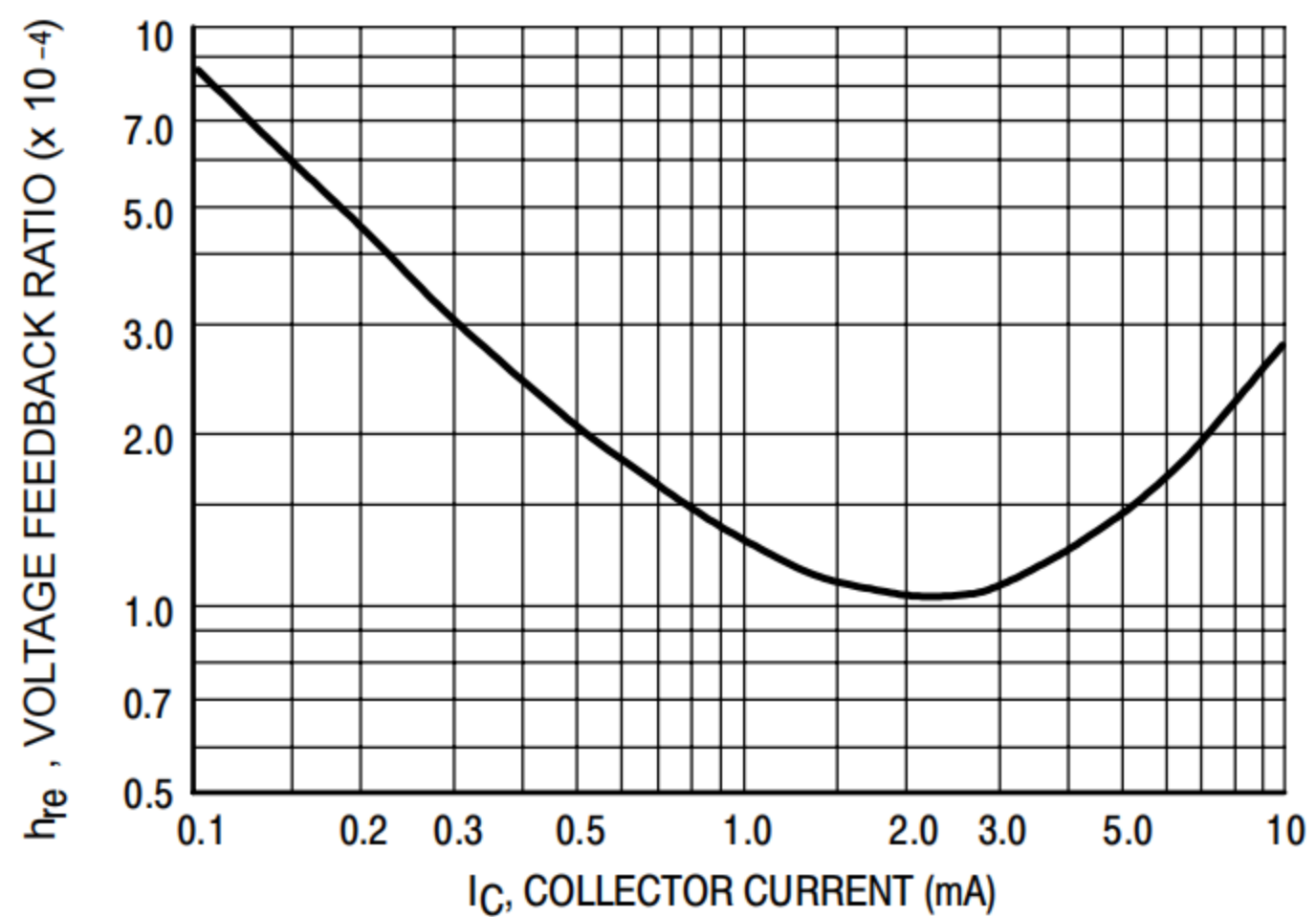


Figure 14. Voltage Feedback Ratio

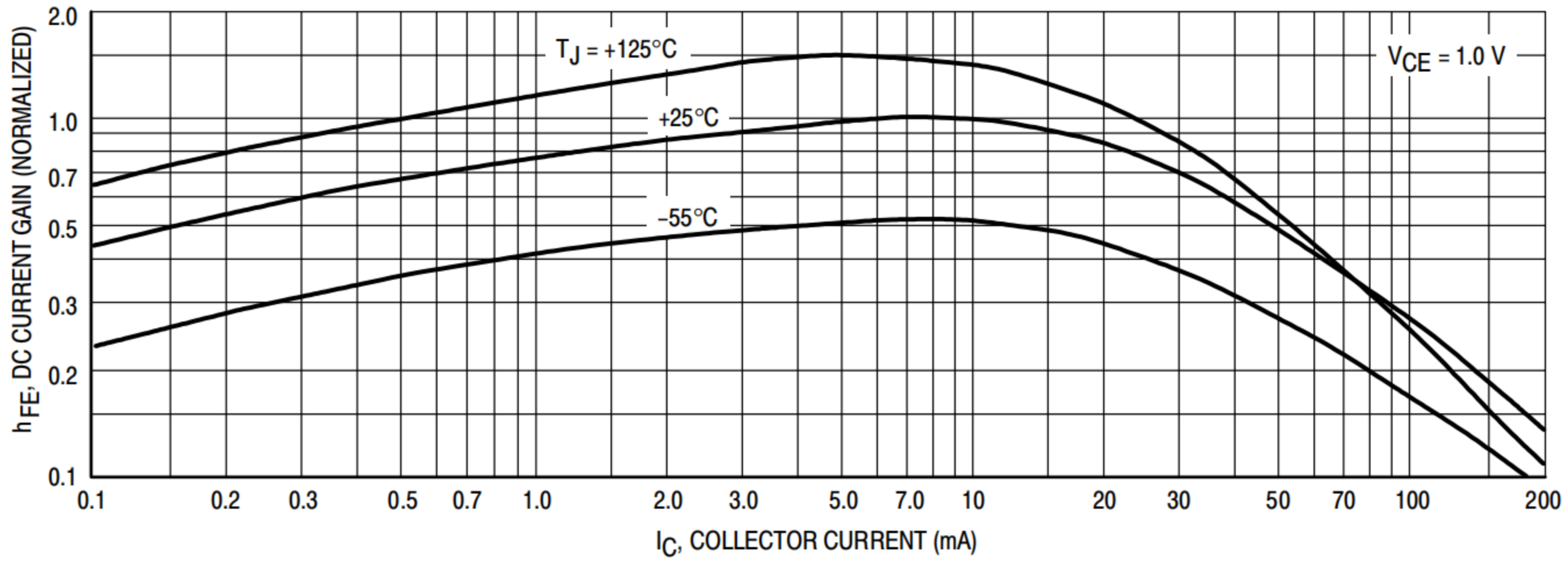


Figure 15. DC Current Gain

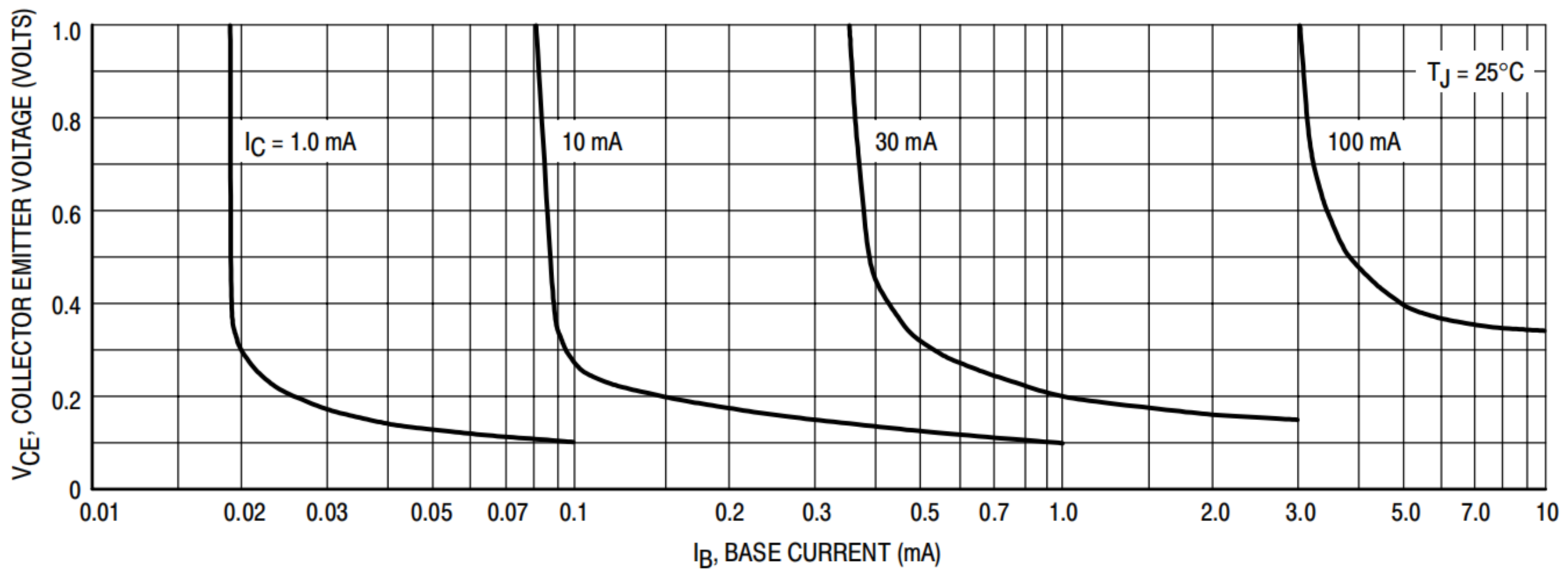


Figure 16. Collector Saturation Region

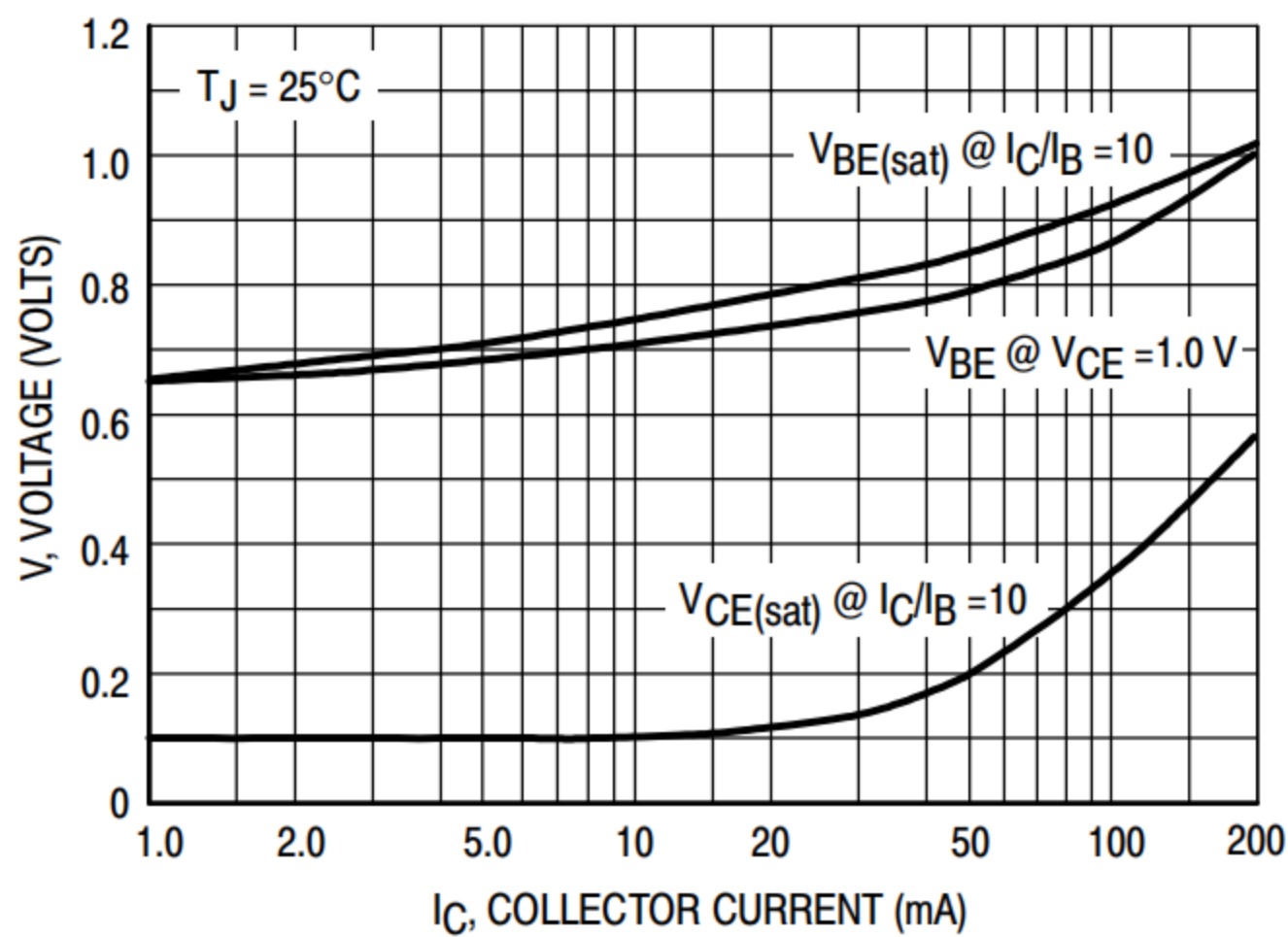


Figure 17. "ON" Voltages

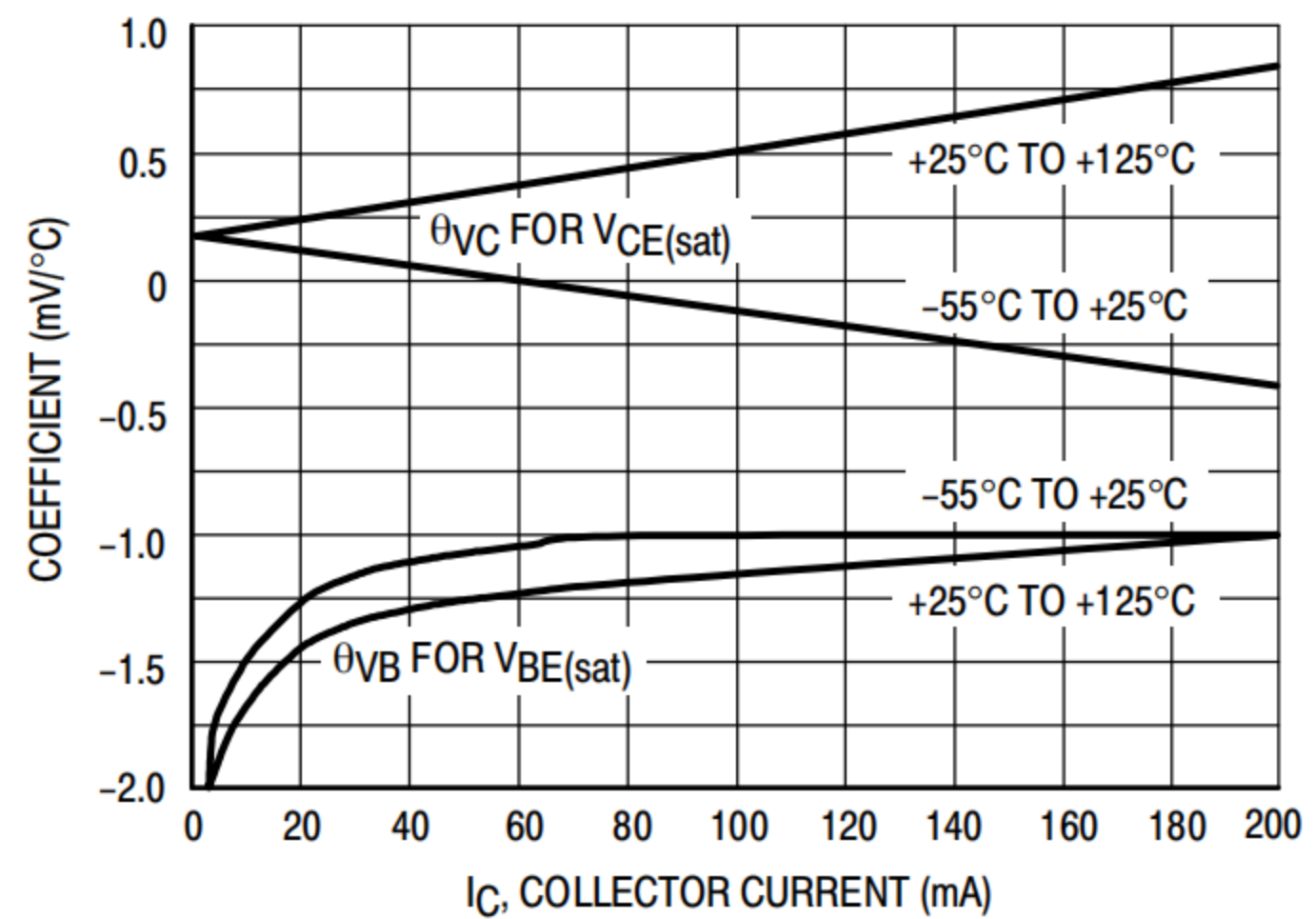
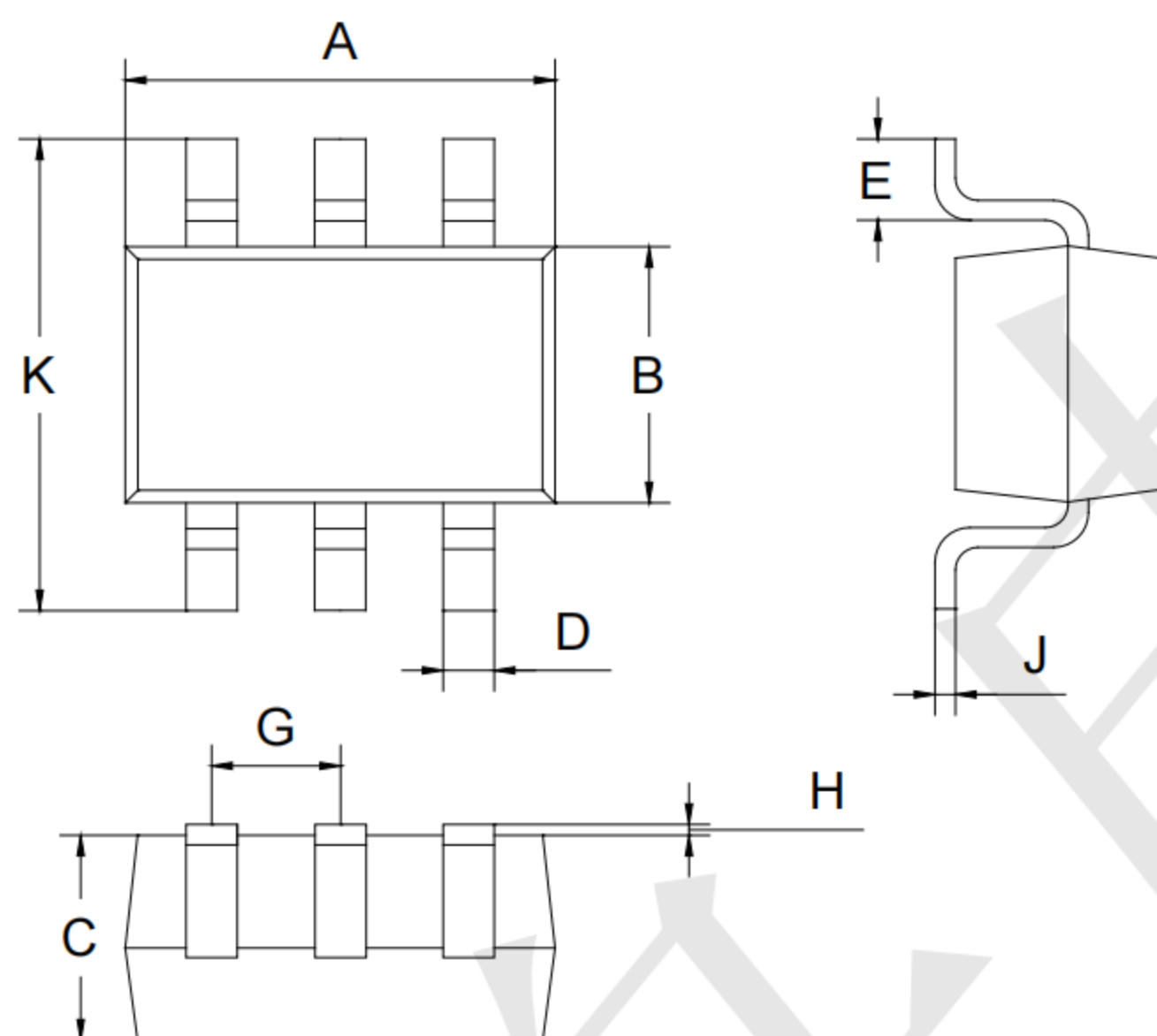


Figure 18. Temperature Coefficients

Outline Drawing - SOT363 (unit: mm)



SOT-363		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout-SOT363 (unit: mm)

