RF Tail

10 V, 70 mA, f_T = 7 GHz, NPN Single MCP

2SC5226A

Features

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 10 V, I_E = 0 A	−	−	1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 1 V, I_C = 0 A	−	−	10	μA
DC Current Gain	hFE	V_{CE} = 5 V, I_C = 20 mA	60*	−	270*	
Gain−Bandwidth Product	f_T	V_{CE} = 5 V, I_C = 20 mA	5	7	−	GHz
Output Capacitance	Cob	V_{CB} = 10 V, f = 1 MHz	−	0.75	1.2	pF
Reverse Transfer Capacitance	Cre		−	0.5	−	pF

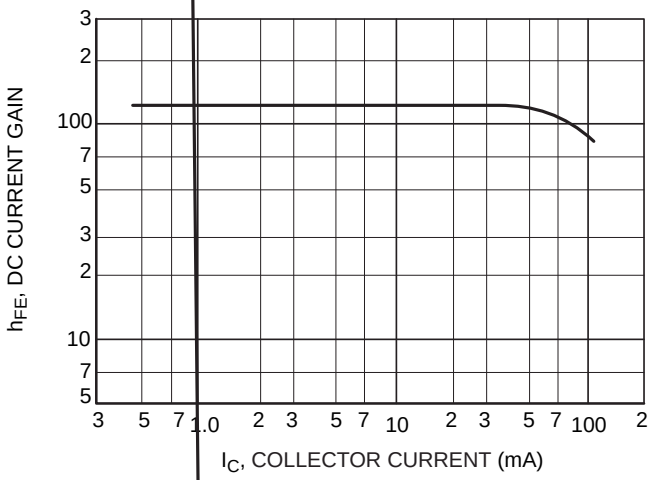

Figure 1. h_{FE} I_C

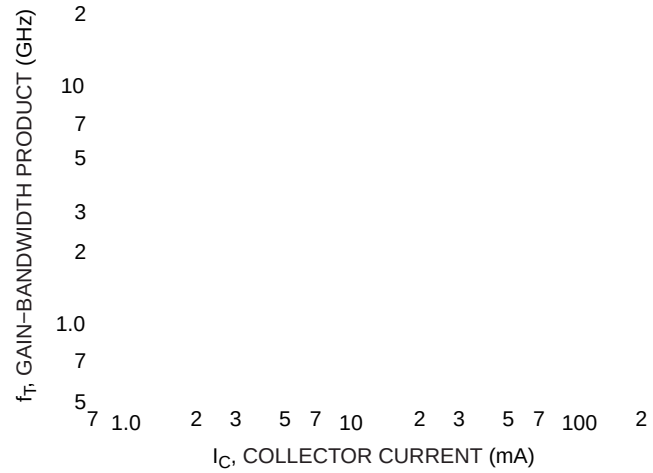

Figure 2. f_T I_C

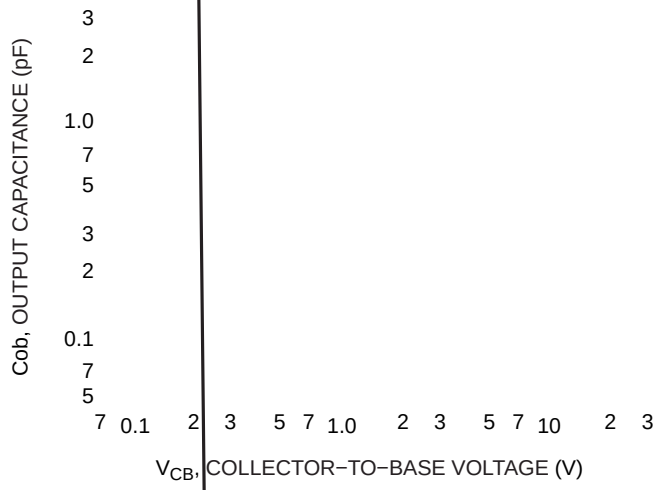

Figure 3. Cob V_{CB}

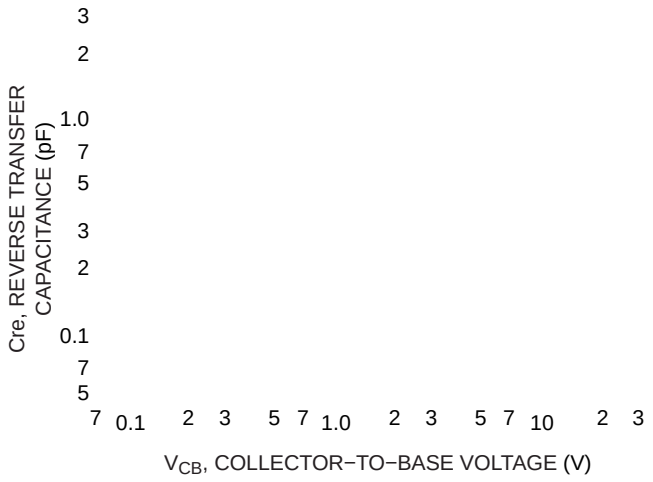

Figure 4. Cre V_{CB}

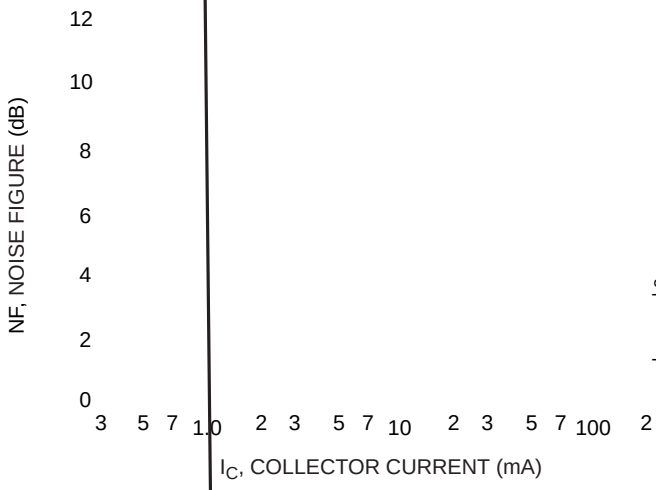

Figure 5. NF I_C

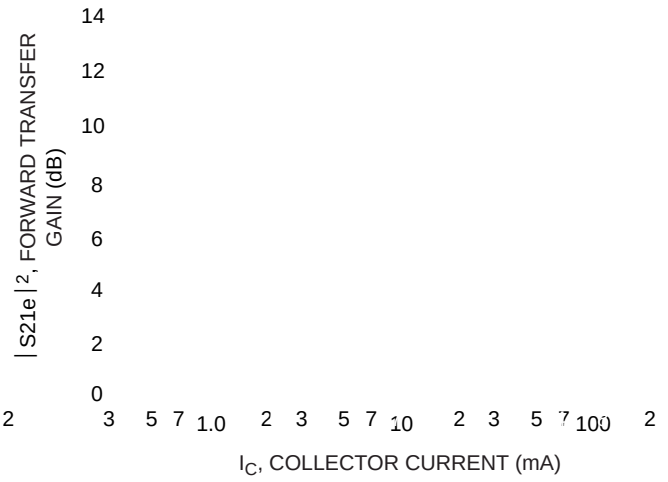

Figure 6. $|S21e|^2$ I_C

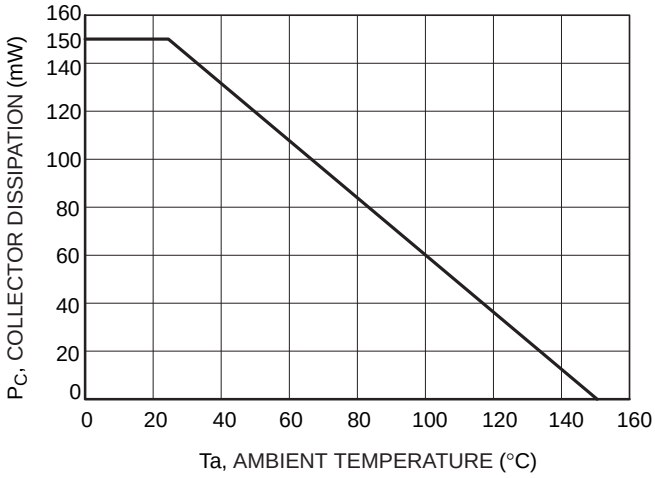

Figure 7. P_C Ta

f = 100 MHz, 200 MHz to 2000 MHz (200 MHz Step)

Figure 8.

f = 100 MHz, 200 MHz to 2000 MHz (200 MHz Step)

Figure 9.

Figure 10.

Figure 11.

S Parameters (Common Emitter)

V_{CE} = 5 V, I_C = 7 mA, Z_O = 50 Ω

Freq(MHz)	|S11|	∠S11	|S21|	∠S21	|S12|	∠S12	|S22|	∠S22
100	0.720	−46.0	17.973	148.5	0.030	68.5	0.880	−23.6
200	0.612	−80.9	13.927	127.3	0.047	57.1	0.697	−37.6
400	0.497	−121.3	8.656	105.0	0.066	51.3	0.479	−47.6
600	0.456	−143.5	6.080	92.8	0.079	52.9	0.382	−50.5
800	0.440	−157.6	4.725	84.3	0.094	55.4	0.339	−51.8
1000	0.436	−167.5	3.864	77.0	0.110	56.8	0.323	−53.4
1200	0.434	−176.1	3.258	70.3	0.126	57.9	0.312	−55.8
1400	0.433	176.6	2.847	64.5	0.143	58.4	0.304	−58.3
1600	0.433	170.9	2.329	57.4	0.160	58.9	0.296	−62.0
1800	0.434	165.0	2.252	54.2	0.178	58.6		

SC−70 / MCP3
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