

# RF Ta! i

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

## 2SC5226A

Features •

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### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

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

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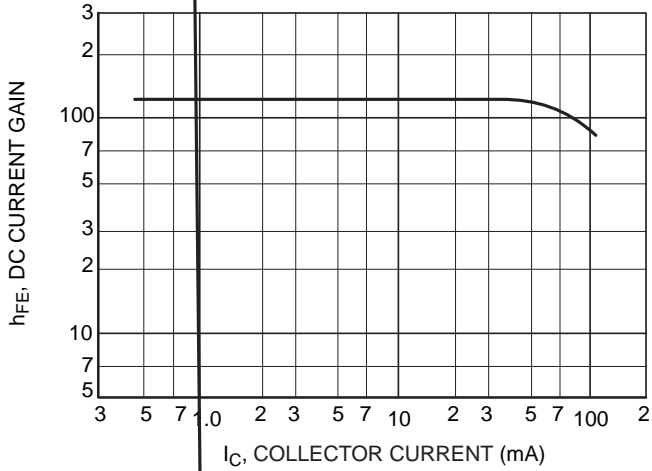


Figure 1.  $h_{FE}$   $I_C$

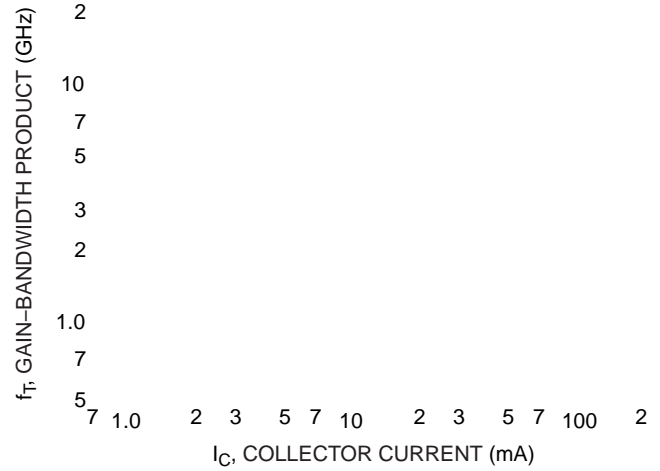


Figure 2.  $f_T$   $I_C$

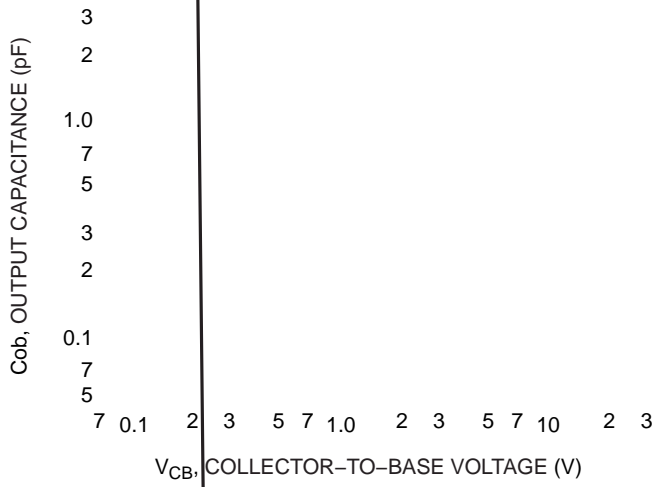


Figure 3.  $C_{ob}$   $V_{CB}$

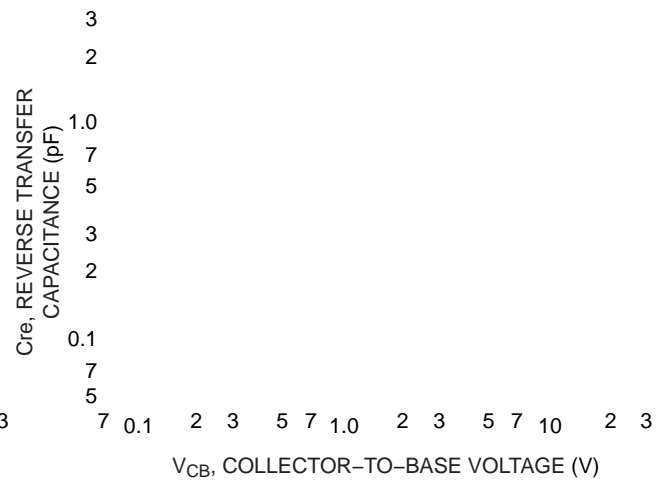


Figure 4.  $C_{re}$   $V_{CB}$

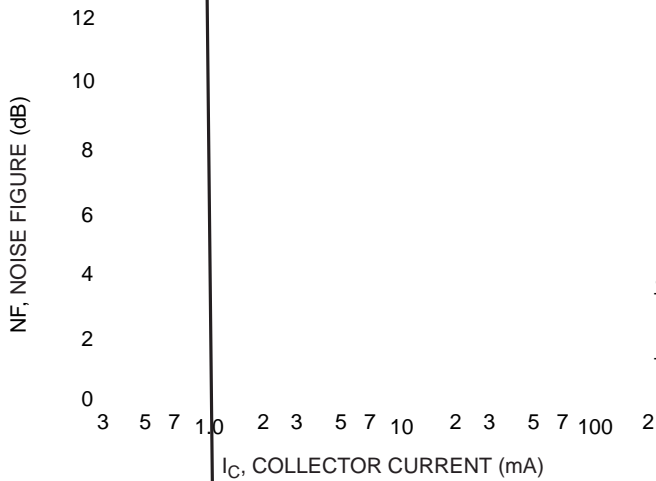


Figure 5. NF  $I_C$

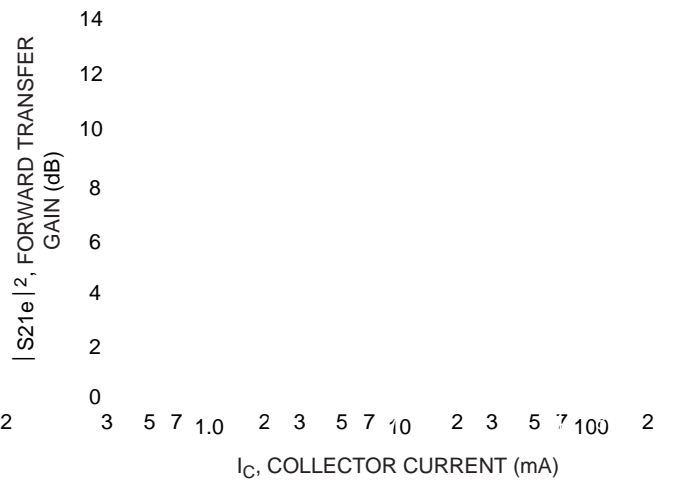


Figure 6.  $|S_{21e}|^2$   $I_C$

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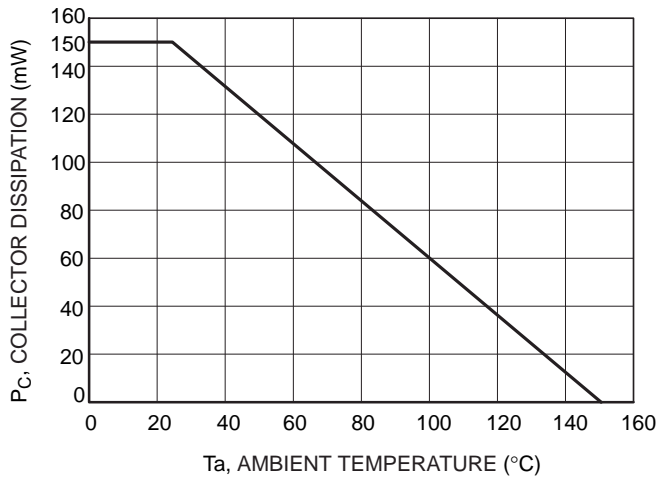


Figure 7.  $P_C$   $T_a$

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.**

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### S Parameters (Common Emitter)

$V_{CE} = 5\text{ V}$ ,  $I_C = 7\text{ mA}$ ,  $Z_O = 50\ \Omega$

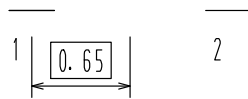
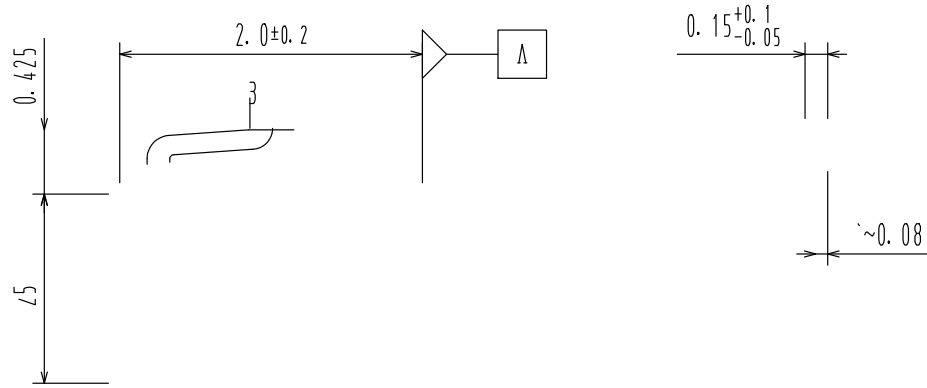
Freq(MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.720	-46.0	17.973	148.5	0.030	68.5	0.880	-23.6
200	0.612	-80.9	13.927	127.3	0.047	57.1	0.697	-37.6
400	0.497	-121.3	8.656	105.0	0.066	51.3	0.479	-47.6
600	0.456	-143.5	6.080	92.8	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		

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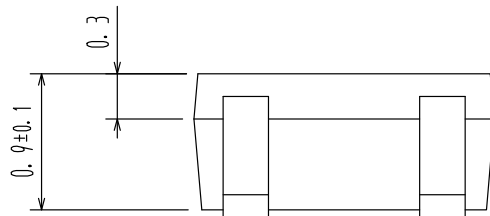


**SC-70 / MCP3**  
**CASE 419AJ**  
**ISSUE O**

DATE 30 NOV 2011



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