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# 2SC5554

Silicon NPN Epitaxial  
VHF / UHF wide band amplifier

## HITACHI

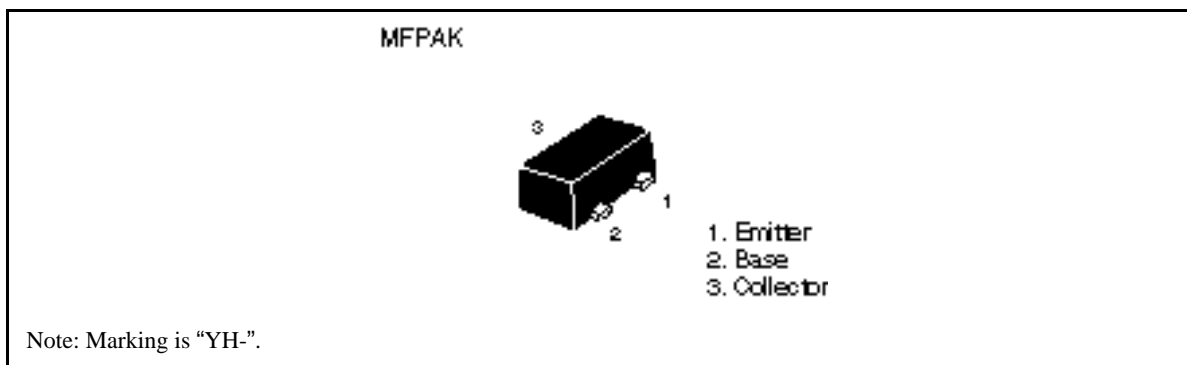
ADE-208-692 (Z)  
1st. Edition  
Nov. 1998

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### Features

- Super compact package;  
(1.4 × 0.8 × 0.59mm)
- Capable low voltage operation ;  
( $V_{CE} = 1V$ )

### Outline



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## 2SC5554

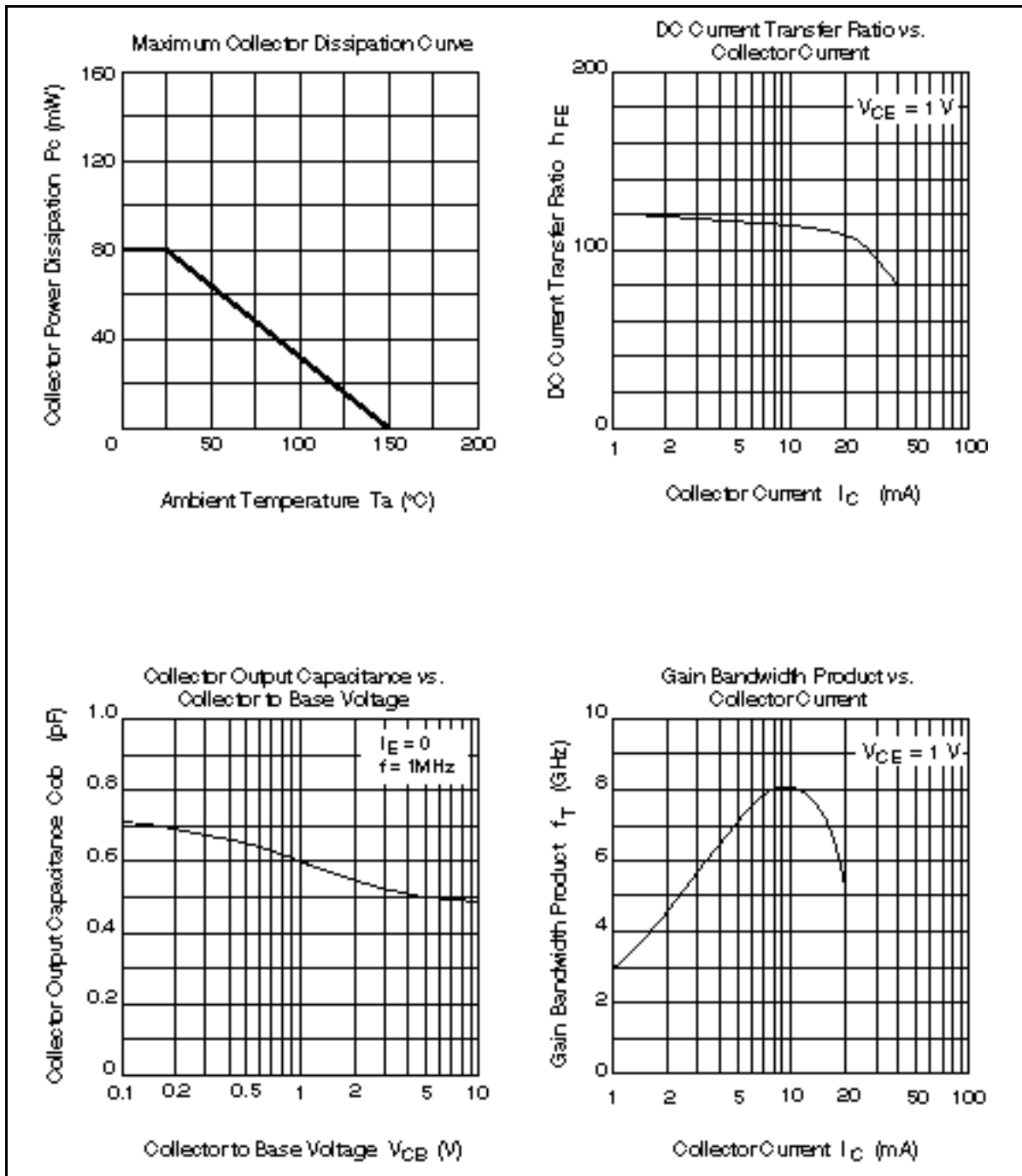
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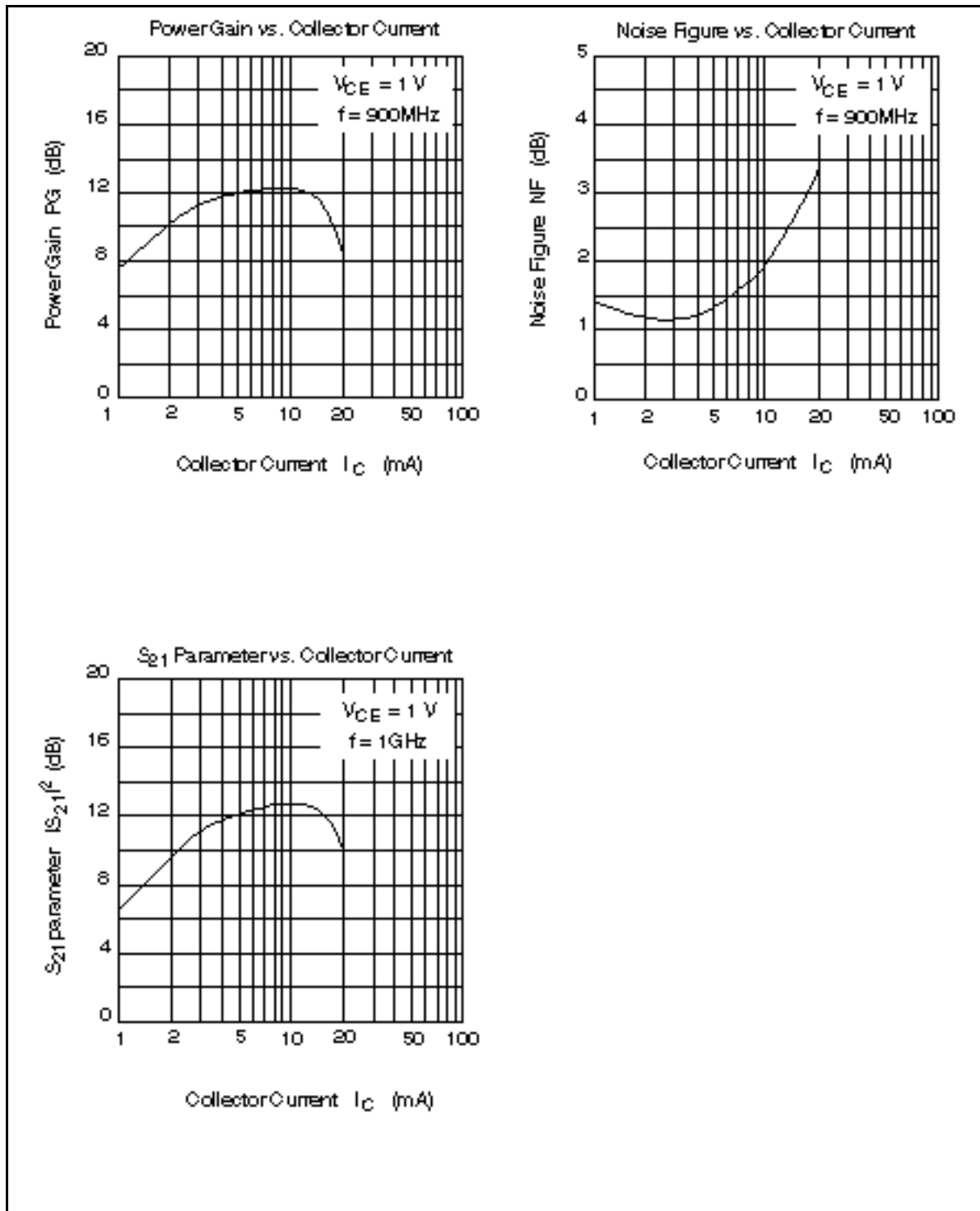
### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	15	V
Collector to emitter voltage	$V_{CEO}$	9	V
Emitter to base voltage	$V_{EBO}$	1.5	V
Collector current	$I_C$	20	mA
Collector power dissipation	Pc	80	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

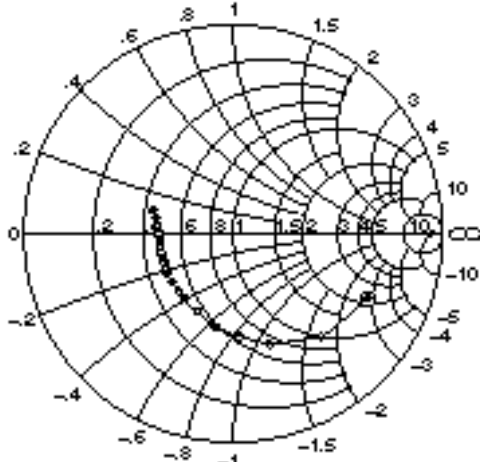
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu$ A	$V_{CB} = 15V, I_E = 0$
Collector cutoff current	$I_{CEO}$	—	—	1	mA	$V_{CE} = 9V, R_{BE} =$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu$ A	$V_{EB} = 1.5V, I_C = 0$
DC current transfer ratio	$h_{FE}$	50	120	250	V	$V_{CE} = 1V, I_C = 5mA$
Collector output capacitance	Cob	—	0.6	0.9	pF	$V_{CB} = 1V, I_E = 0$ $f = 1MHz$
Gain bandwidth product	$f_T$	3.5	7	—	GHz	$V_{CE} = 1V, I_C = 5mA$
Power gain	PG	9	12	—	dB	$V_{CE} = 1V, I_C = 5mA$ $f = 900MHz$
Noise figure	NF	—	1.4	3	dB	$V_{CE} = 1V, I_C = 5mA$ $f = 900MHz$





S11 Parameter vs. Frequency

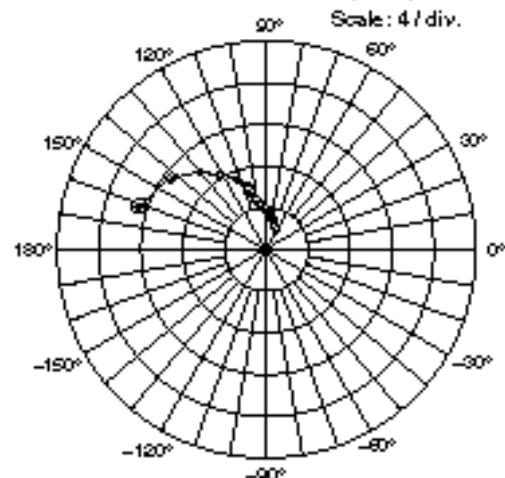


Condition :  $V_{CE} = 1 V, I_C = 5 mA$

100 to 2000 MHz (100 MHz step)



S21 Parameter vs. Frequency

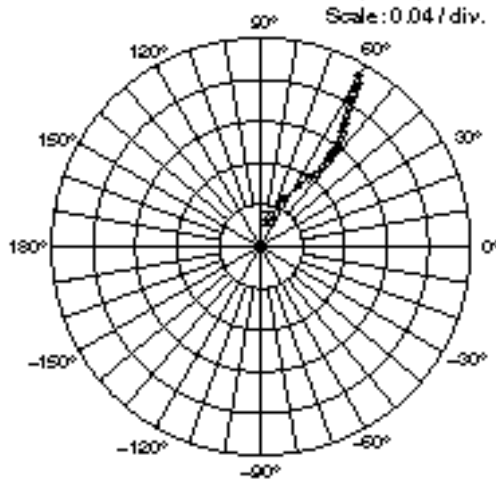


Condition :  $V_{CE} = 1 V, I_C = 5 mA$

100 to 2000 MHz (100 MHz step)



S12 Parameter vs. Frequency

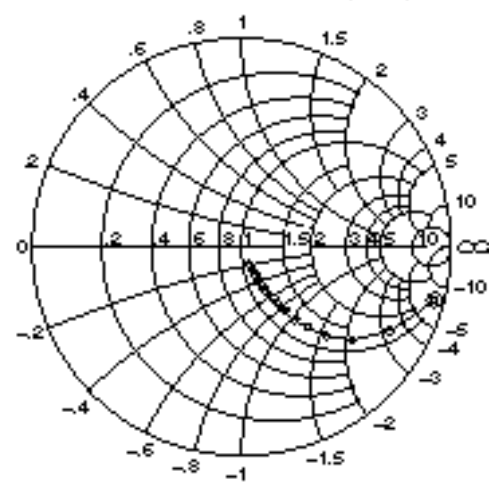


Condition :  $V_{CE} = 1 V, I_C = 5 mA$

100 to 2000 MHz (100 MHz step)



S22 Parameter vs. Frequency



Condition :  $V_{CE} = 1 V, I_C = 5 mA$

100 to 2000 MHz (100 MHz step)



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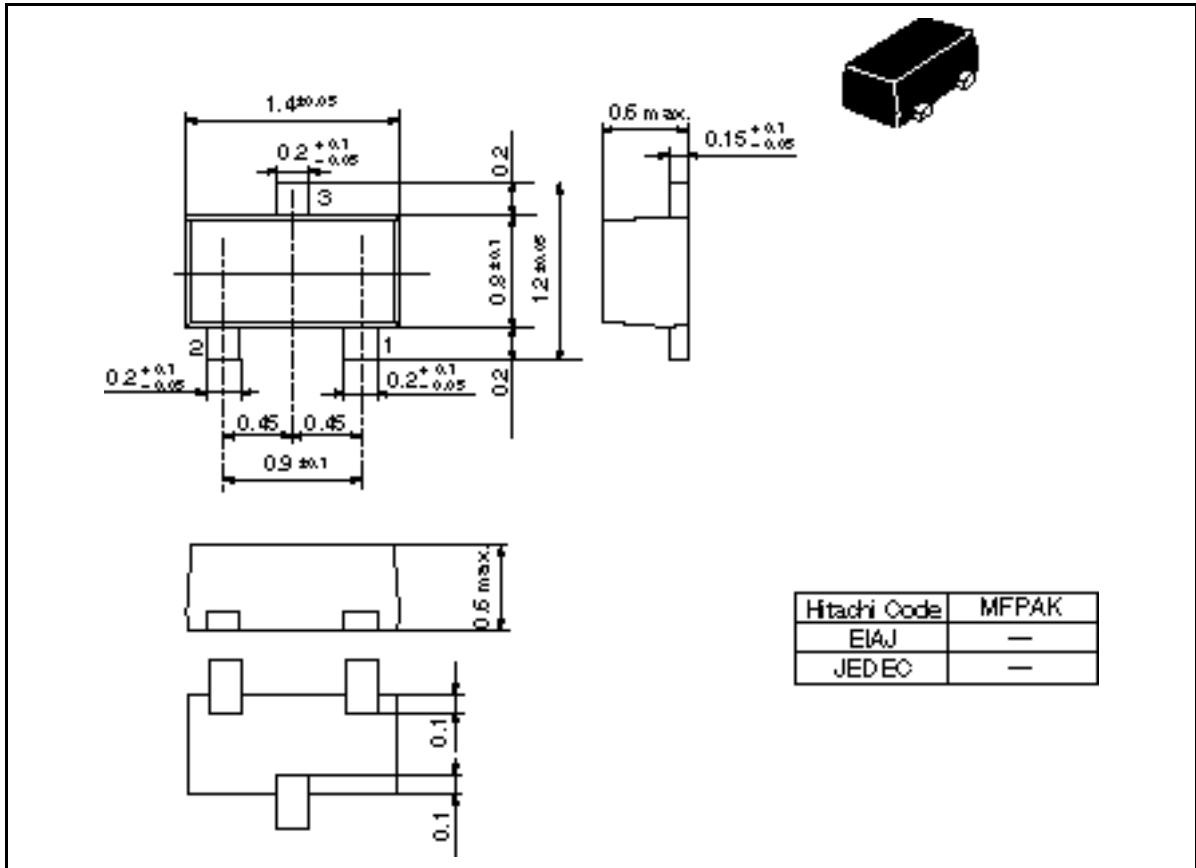
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Sparameter ( $V_{CE} = 1V, I_C = 5mA, Z_o = 50 \Omega$ )

f (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.715	-25.4	13.06	161.3	0.0279	76.6	0.947	-16.1
200	0.647	-50.1	11.47	144.2	0.0517	65.6	0.828	-30.2
300	0.559	-71.5	9.74	131.0	0.0681	58.4	0.697	-40.4
400	0.501	-88.2	8.28	121.3	0.0798	54.6	0.587	-47.0
500	0.453	-102.5	7.08	113.7	0.0882	52.4	0.501	-51.3
600	0.416	-114.8	6.16	108.1	0.0955	51.8	0.433	-54.3
700	0.393	-125.4	5.43	103.1	0.102	51.7	0.378	-56.2
800	0.378	-134.4	4.84	99.3	0.109	52.1	0.333	-57.3
900	0.369	-142.8	4.37	95.7	0.115	52.7	0.295	-58.0
1000	0.357	-149.5	3.99	92.5	0.122	53.5	0.266	-58.4
1100	0.361	-156.6	3.66	89.7	0.128	54.2	0.240	-58.6
1200	0.358	-162.2	3.38	87.2	0.135	55.1	0.217	-58.5
1300	0.358	-167.5	3.15	84.9	0.141	56.0	0.199	-58.0
1400	0.362	-172.5	2.96	82.7	0.148	56.9	0.180	-58.0
1500	0.362	-177.3	2.78	80.9	0.155	57.2	0.166	-57.2
1600	0.369	178.8	2.64	78.6	0.163	58.1	0.151	-56.9
1700	0.373	174.7	2.50	77.2	0.169	58.8	0.137	-56.6
1800	0.377	171.1	2.38	75.1	0.177	59.2	0.126	-56.4
1900	0.388	168.3	2.28	73.3	0.183	59.6	0.113	-56.2
2000	0.395	165.3	2.18	71.8	0.191	60.1	0.102	-55.7

Package Dimensions

Unit: mm



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