

## 2SC5702

Silicon NPN Epitaxial  
High Frequency Amplifier / Oscillator

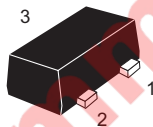
REJ03G0752-0200  
(Previous ADE-208-1414)  
Rev.2.00  
Aug.10.2005

### Features

- High gain bandwidth product  
 $f_T = 8 \text{ GHz typ.}$
- High power gain and low noise figure ;  
 $PG = 13 \text{ dB typ.}, NF = 1.05 \text{ dB typ. at } f = 900 \text{ MHz}$

### Outline

RENESAS Package code: PUSF0003ZA-A  
(Package name: MFPAK<sup>®</sup>)



1. Emitter
2. Base
3. Collector

Note: Marking is "ZS-".

\*MFPAK is a trademark of Renesas Technology Corp.

### Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

| Item                         | Symbol    | Ratings     | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 15          | V                |
| Collector to emitter voltage | $V_{CEO}$ | 6           | V                |
| Emitter to base voltage      | $V_{EBO}$ | 1.5         | V                |
| Collector current            | $I_C$     | 50          | mA               |
| Collector power dissipation  | $P_C$     | 80          | mW               |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

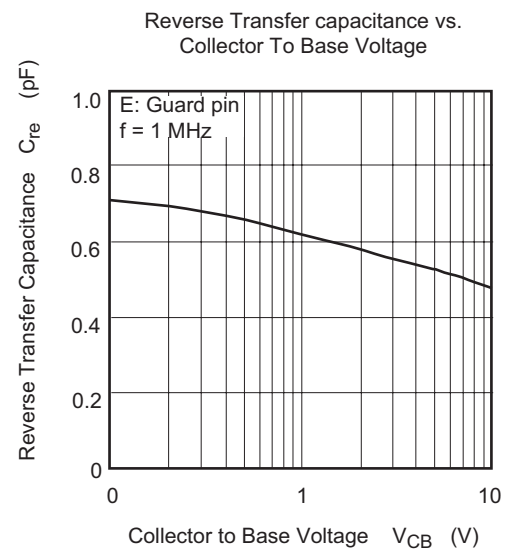
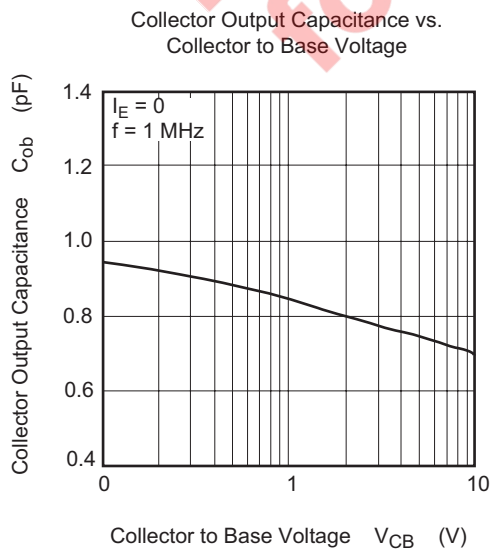
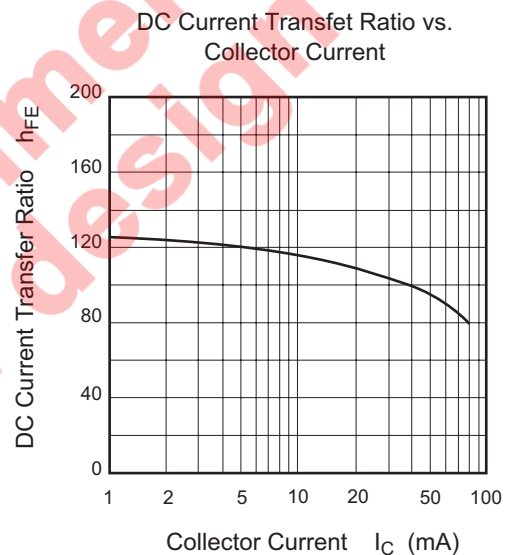
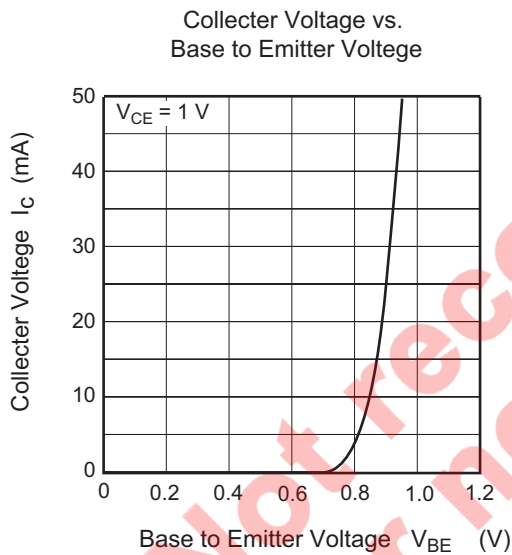
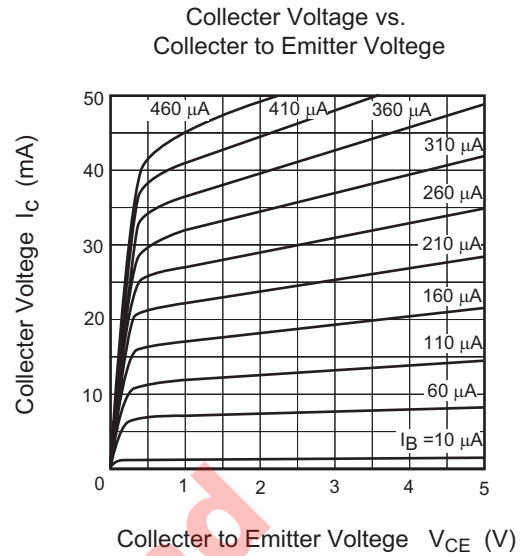
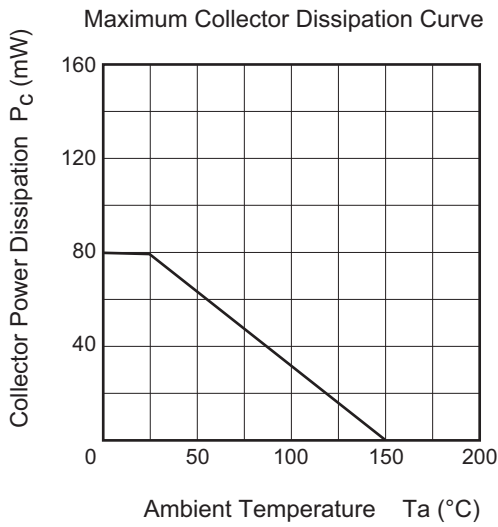
## Electrical Characteristics

(Ta = 25°C)

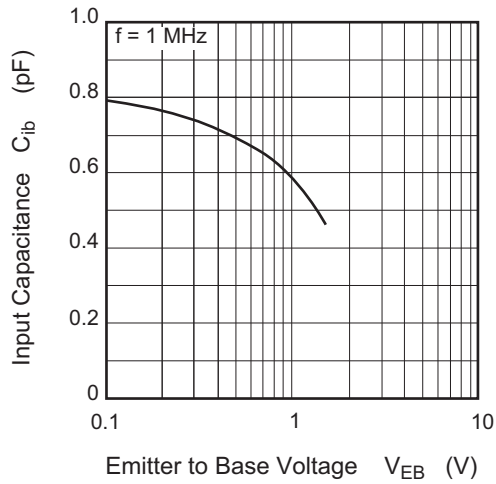
| Item                                | Symbol        | Min | Typ  | Max | Unit    | Test Conditions                             |
|-------------------------------------|---------------|-----|------|-----|---------|---|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 15  | 18.5 | —   | V       | $I_C = 10 \mu A, I_E = 0$                   |
| Collector cutoff current            | $I_{CBO}$     | —   | —    | 1   | $\mu A$ | $V_{CB} = 10 V, I_E = 0$                    |
| Collector cutoff current            | $I_{CEO}$     | —   | —    | 1   | mA      | $V_{CE} = 4 V, R_{BE} = \infty$             |
| Emitter cutoff current              | $I_{EBO}$     | —   | —    | 10  | mA      | $V_{EB} = 1.5V, I_C = 0$                    |
| DC current transfer ratio           | $h_{FE}$      | 80  | 120  | 160 |         | $V_{CE} = 1 V, I_C = 5 mA$                  |
| Collector output capacitance        | $C_{ob}$      | —   | 0.85 | 1.2 | pF      | $V_{CB} = 1 V, I_E = 0$<br>$f = 1 MHz$      |
| Gain bandwidth product              | $f_T$         | 6.5 | 8.0  | —   | GHz     | $V_{CE} = 1 V, I_C = 5 mA$<br>$f = 1 MHz$   |
| Power gain                          | PG            | 11  | 13   | —   | dB      | $V_{CE} = 1 V, I_C = 5 mA$<br>$f = 900 MHz$ |
| Noise figure                        | NF            | —   | 1.05 | 1.9 | dB      | $V_{CE} = 1 V, I_C = 5 mA$<br>$f = 900 MHz$ |

Not recommended  
for new design

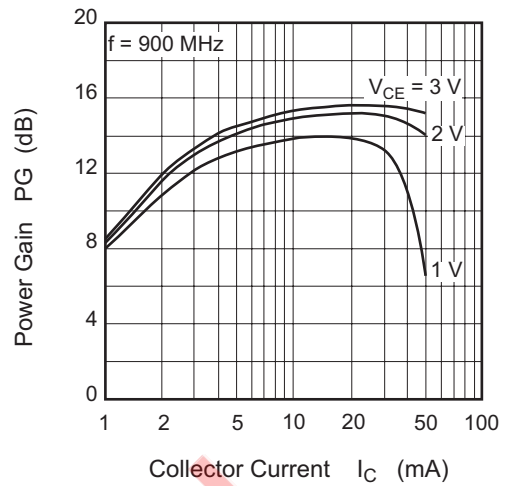
Main Characteristics



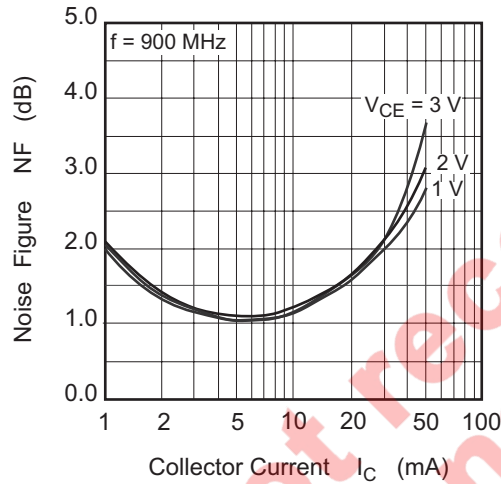
Collector Input Capacitance vs. Emitter To Base Voltage



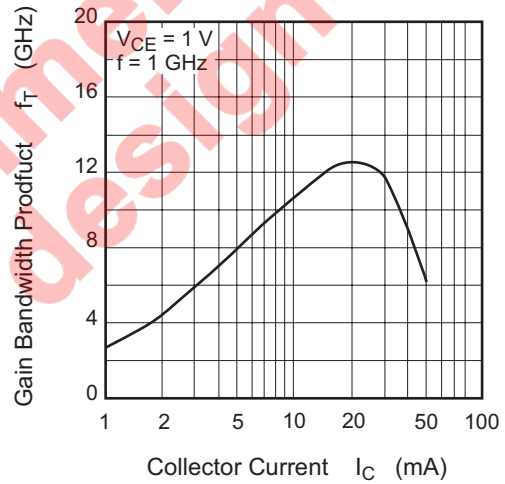
Power Gain vs. Collector Current



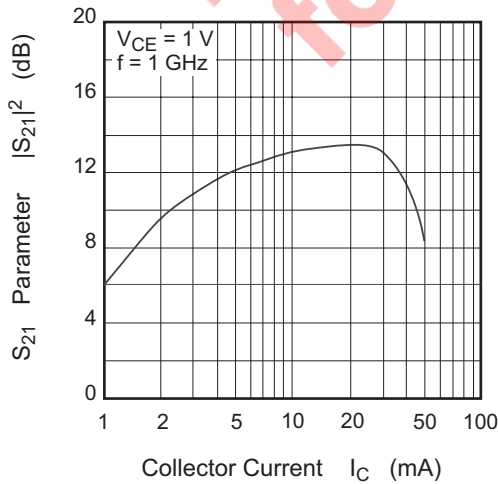
Noise Figure vs. Collector Current



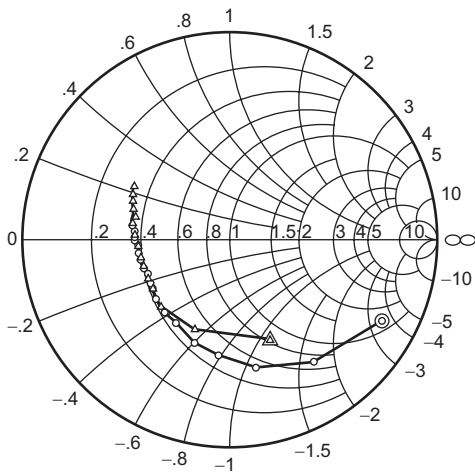
Gain Bandwidth Product vs. Collector Current



$S_{21}$  Parameter vs. Collector Current

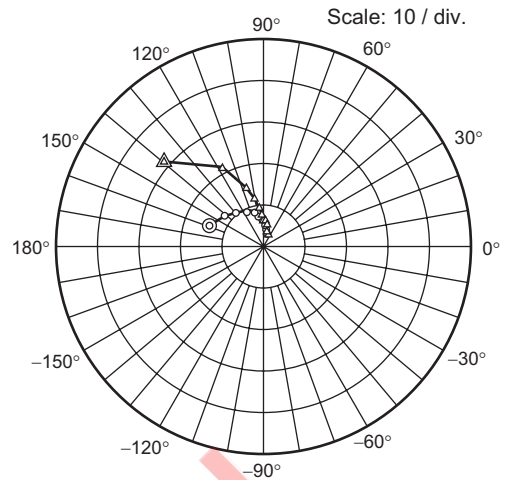


S11 Parameter vs. Frequency



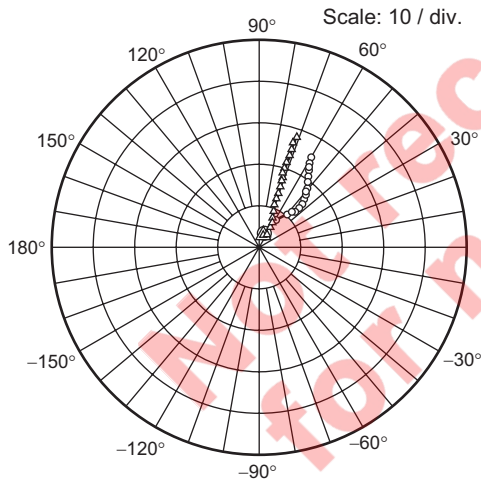
Condition :  $V_{CE} = 1\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{mA}$ )  
 △—△ ( $I_C = 20\text{mA}$ )

S21 Parameter vs. Frequency



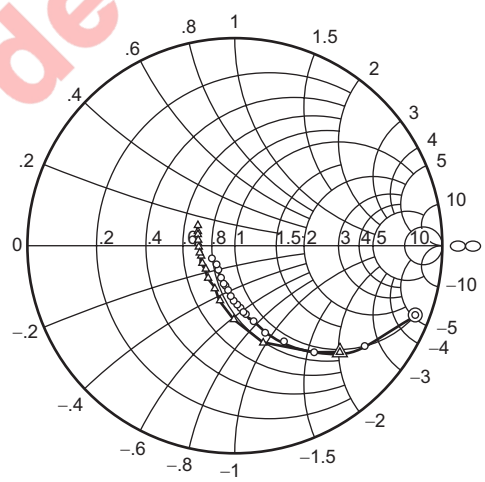
Condition :  $V_{CE} = 1\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{mA}$ )  
 △—△ ( $I_C = 20\text{mA}$ )

S12 Parameter vs. Frequency

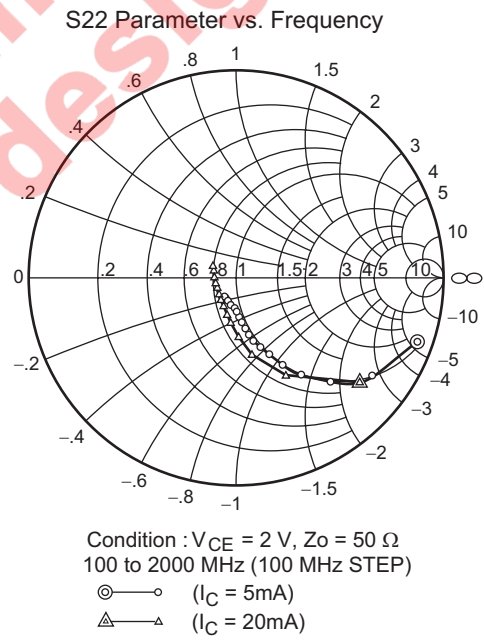
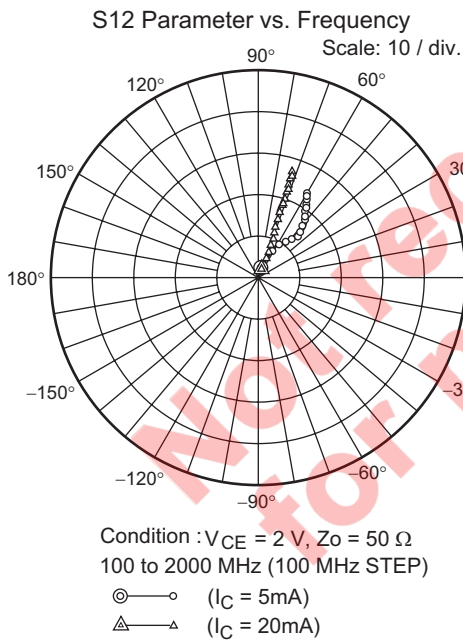
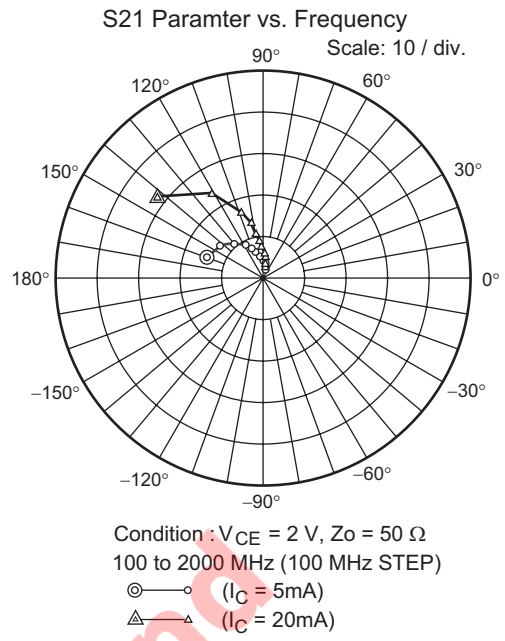
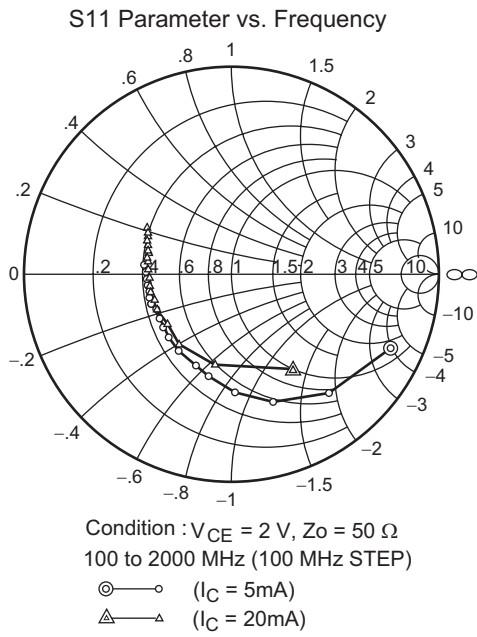


Condition :  $V_{CE} = 1\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{mA}$ )  
 △—△ ( $I_C = 20\text{mA}$ )

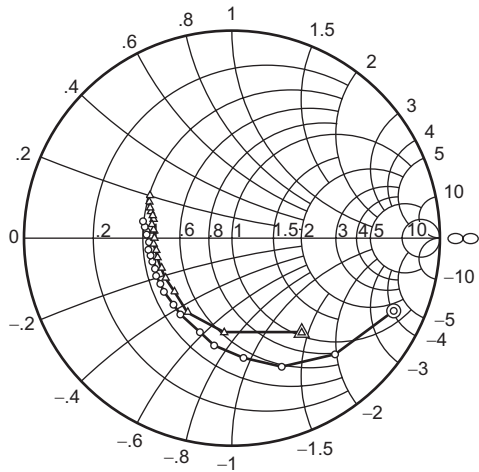
S22 Parameter vs. Frequency



Condition :  $V_{CE} = 1\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{mA}$ )  
 △—△ ( $I_C = 20\text{mA}$ )

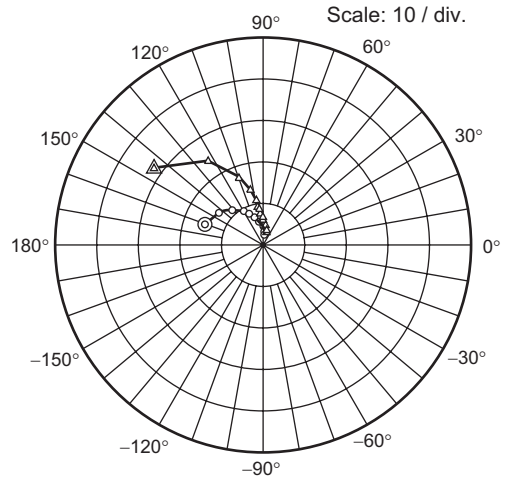


S11 Parameter vs. Frequency



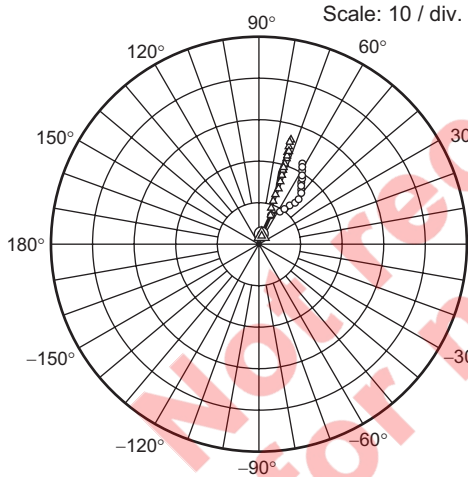
Condition :  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{ mA}$ )  
 △—△ ( $I_C = 20\text{ mA}$ )

S21 Parameter vs. Frequency



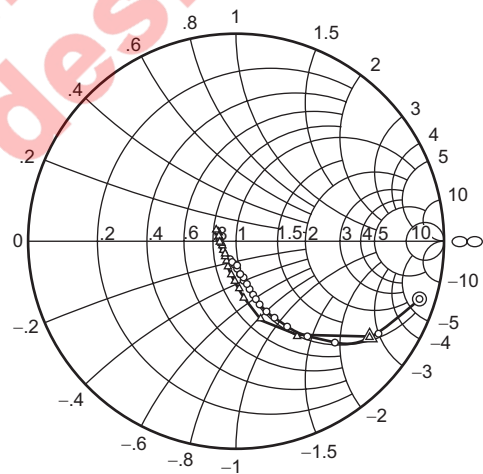
Condition :  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{ mA}$ )  
 △—△ ( $I_C = 20\text{ mA}$ )

S12 Parameter vs. Frequency



Condition :  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{ mA}$ )  
 △—△ ( $I_C = 20\text{ mA}$ )

S21 Parameter vs. Frequency



Condition :  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 2000 MHz (100 MHz STEP)  
 ○—○ ( $I_C = 5\text{ mA}$ )  
 △—△ ( $I_C = 20\text{ mA}$ )

## 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     | 0.832 | -28.2  | 14.18 | 159.9 | 0.0347 | 74.2 | 0.927 | -20.7  |
| 200     | 0.723 | -55.3  | 12.19 | 141.4 | 0.0624 | 61.4 | 0.789 | -38.8  |
| 300     | 0.636 | -78.0  | 10.17 | 127.5 | 0.0806 | 52.8 | 0.644 | -52.3  |
| 400     | 0.559 | -95.2  | 8.43  | 117.9 | 0.0920 | 48.9 | 0.532 | -61.8  |
| 500     | 0.513 | -110.1 | 7.15  | 110.6 | 0.1001 | 46.8 | 0.447 | -69.1  |
| 600     | 0.473 | -121.4 | 6.15  | 105.0 | 0.1065 | 45.8 | 0.378 | -75.3  |
| 700     | 0.462 | -132.4 | 5.40  | 100.2 | 0.1124 | 46.0 | 0.327 | -79.8  |
| 800     | 0.443 | -139.7 | 4.84  | 96.4  | 0.1182 | 46.7 | 0.285 | -84.6  |
| 900     | 0.432 | -148.1 | 4.32  | 92.6  | 0.1236 | 47.6 | 0.250 | -89.4  |
| 1000    | 0.435 | -153.9 | 3.94  | 89.6  | 0.1294 | 48.7 | 0.223 | -93.3  |
| 1100    | 0.420 | -160.5 | 3.60  | 87.2  | 0.1351 | 49.5 | 0.200 | -97.4  |
| 1200    | 0.438 | -165.4 | 3.33  | 84.5  | 0.1410 | 50.9 | 0.181 | -102.3 |
| 1300    | 0.428 | -168.8 | 3.11  | 82.2  | 0.1471 | 51.9 | 0.163 | -107.4 |
| 1400    | 0.442 | -175.3 | 2.87  | 80.0  | 0.1537 | 53.2 | 0.151 | -111.4 |
| 1500    | 0.444 | -177.1 | 2.75  | 78.0  | 0.1601 | 54.3 | 0.138 | -117.3 |
| 1600    | 0.448 | 177.3  | 2.57  | 76.1  | 0.1671 | 55.2 | 0.130 | -121.8 |
| 1700    | 0.464 | 176.0  | 2.44  | 73.9  | 0.1739 | 56.2 | 0.124 | -128.5 |
| 1800    | 0.460 | 172.7  | 2.34  | 72.7  | 0.1810 | 56.9 | 0.119 | -135.6 |
| 1900    | 0.474 | 170.1  | 2.21  | 70.7  | 0.1888 | 57.8 | 0.116 | -142.0 |
| 2000    | 0.481 | 168.3  | 2.13  | 69.1  | 0.1952 | 58.6 | 0.114 | -148.5 |

Not recommended  
for new designs



## Sparameter

 $(V_{CE} = 1V, I_C = 20mA, Z_o = 50\Omega)$ 

| f (MHz) | S11   |        | S21   |       | S12    |      | S22   |        |
|---------|-------|--------|-------|-------|--------|------|-------|--------|
|         | MAG   | ANG    | MAG   | ANG   | MAG    | ANG  | MAG   | ANG    |
| 100     | 0.534 | -68.4  | 30.97 | 140.9 | 0.0258 | 65.2 | 0.735 | -45.4  |
| 200     | 0.467 | -111.9 | 20.56 | 119.2 | 0.0390 | 57.4 | 0.489 | -73.4  |
| 300     | 0.451 | -135.2 | 14.57 | 107.9 | 0.0490 | 58.2 | 0.350 | -91.3  |
| 400     | 0.434 | -149.5 | 11.16 | 101.6 | 0.0581 | 60.5 | 0.276 | -104.5 |
| 500     | 0.438 | -159.1 | 9.02  | 97.1  | 0.0673 | 63.1 | 0.231 | -115.5 |
| 600     | 0.430 | -165.9 | 7.58  | 93.7  | 0.0772 | 65.0 | 0.201 | -125.9 |
| 700     | 0.441 | -172.5 | 6.52  | 90.8  | 0.0872 | 66.5 | 0.182 | -135.2 |
| 800     | 0.442 | -175.8 | 5.75  | 88.3  | 0.0974 | 67.7 | 0.170 | -144.0 |
| 900     | 0.451 | 178.4  | 5.09  | 86.1  | 0.1081 | 68.5 | 0.164 | -152.6 |
| 1000    | 0.456 | 175.8  | 4.62  | 84.0  | 0.1184 | 69.5 | 0.158 | -160.2 |
| 1100    | 0.452 | 171.2  | 4.22  | 82.5  | 0.1291 | 69.7 | 0.157 | -166.8 |
| 1200    | 0.470 | 169.0  | 3.87  | 80.5  | 0.1395 | 70.2 | 0.158 | -173.0 |
| 1300    | 0.462 | 166.2  | 3.62  | 79.0  | 0.1504 | 70.2 | 0.158 | -179.2 |
| 1400    | 0.485 | 162.5  | 3.34  | 77.7  | 0.1608 | 70.7 | 0.162 | 176.1  |
| 1500    | 0.483 | 162.0  | 3.16  | 75.6  | 0.1719 | 70.7 | 0.164 | 171.1  |
| 1600    | 0.494 | 158.4  | 2.98  | 74.5  | 0.1826 | 70.6 | 0.168 | 167.2  |
| 1700    | 0.505 | 157.3  | 2.81  | 72.8  | 0.1935 | 70.5 | 0.175 | 164.0  |
| 1800    | 0.503 | 155.6  | 2.69  | 72.0  | 0.2040 | 70.4 | 0.181 | 160.4  |
| 1900    | 0.525 | 152.6  | 2.54  | 70.5  | 0.2148 | 70.5 | 0.189 | 157.1  |
| 2000    | 0.523 | 152.4  | 2.45  | 69.0  | 0.2247 | 70.2 | 0.195 | 154.1  |

Not recommended  
for new designs

## Sparameter

 $(V_{CE} = 2V, I_C = 5mA, Z_o = 50\Omega)$ 

| f (MHz) | S11   |        | S21   |       | S12    |      | S22   |        |
|---------|-------|--------|-------|-------|--------|------|-------|--------|
|         | MAG   | ANG    | MAG   | ANG   | MAG    | ANG  | MAG   | ANG    |
| 100     | 0.837 | -25.5  | 14.31 | 161.2 | 0.0306 | 75.8 | 0.938 | -18.2  |
| 200     | 0.739 | -50.1  | 12.50 | 143.5 | 0.0559 | 63.3 | 0.813 | -34.5  |
| 300     | 0.646 | -72.1  | 10.58 | 129.9 | 0.0736 | 55.0 | 0.674 | -46.5  |
| 400     | 0.565 | -88.6  | 8.85  | 120.2 | 0.0848 | 51.0 | 0.563 | -54.9  |
| 500     | 0.513 | -103.4 | 7.58  | 112.7 | 0.0928 | 48.7 | 0.476 | -61.1  |
| 600     | 0.466 | -114.0 | 6.56  | 106.9 | 0.0996 | 47.7 | 0.405 | -66.1  |
| 700     | 0.444 | -125.7 | 5.77  | 102.1 | 0.1055 | 48.0 | 0.351 | -69.5  |
| 800     | 0.429 | -133.3 | 5.17  | 98.1  | 0.1106 | 48.5 | 0.307 | -72.7  |
| 900     | 0.412 | -142.2 | 4.62  | 94.1  | 0.1162 | 49.2 | 0.269 | -76.1  |
| 1000    | 0.411 | -148.8 | 4.22  | 91.1  | 0.1214 | 50.0 | 0.239 | -78.3  |
| 1100    | 0.395 | -155.5 | 3.87  | 88.6  | 0.1276 | 51.2 | 0.215 | -80.7  |
| 1200    | 0.410 | -161.6 | 3.57  | 85.7  | 0.1331 | 52.3 | 0.192 | -84.0  |
| 1300    | 0.401 | -165.3 | 3.34  | 83.6  | 0.1387 | 53.4 | 0.171 | -86.6  |
| 1400    | 0.413 | -172.1 | 3.08  | 81.4  | 0.1447 | 54.6 | 0.156 | -88.9  |
| 1500    | 0.417 | -174.3 | 2.94  | 79.1  | 0.1510 | 55.8 | 0.139 | -92.9  |
| 1600    | 0.415 | -179.2 | 2.75  | 77.4  | 0.1579 | 56.4 | 0.128 | -95.6  |
| 1700    | 0.431 | 177.8  | 2.63  | 75.0  | 0.1644 | 57.6 | 0.117 | -100.4 |
| 1800    | 0.426 | 175.2  | 2.50  | 73.8  | 0.1709 | 58.4 | 0.106 | -105.7 |
| 1900    | 0.447 | 171.4  | 2.38  | 71.8  | 0.1781 | 59.6 | 0.097 | -112.2 |
| 2000    | 0.450 | 169.9  | 2.28  | 70.1  | 0.1850 | 60.2 | 0.090 | -118.3 |

Not recommended  
for new design

## Sparameter

 $(V_{CE} = 2V, I_C = 20mA, Z_o = 50\Omega)$ 

| f (MHz) | S11   |        | S21   |       | S12    |      | S22   |        |
|---------|-------|--------|-------|-------|--------|------|-------|--------|
|         | MAG   | ANG    | MAG   | ANG   | MAG    | ANG  | MAG   | ANG    |
| 100     | 0.548 | -58.6  | 32.28 | 143.9 | 0.0231 | 67.8 | 0.777 | -38.8  |
| 200     | 0.451 | -99.9  | 22.20 | 121.9 | 0.0363 | 59.6 | 0.527 | -62.6  |
| 300     | 0.415 | -125.6 | 15.97 | 110.2 | 0.0464 | 60.1 | 0.373 | -76.9  |
| 400     | 0.390 | -141.4 | 12.32 | 103.5 | 0.0545 | 61.7 | 0.283 | -86.7  |
| 500     | 0.392 | -152.5 | 9.97  | 98.7  | 0.0632 | 63.8 | 0.226 | -95.1  |
| 600     | 0.382 | -160.9 | 8.41  | 95.2  | 0.0726 | 65.6 | 0.184 | -102.9 |
| 700     | 0.387 | -168.1 | 7.23  | 92.0  | 0.0823 | 67.1 | 0.155 | -110.3 |
| 800     | 0.387 | -172.8 | 6.39  | 89.5  | 0.0914 | 68.5 | 0.133 | -118.3 |
| 900     | 0.390 | -178.6 | 5.66  | 87.1  | 0.1019 | 69.2 | 0.117 | -127.6 |
| 1000    | 0.399 | 178.2  | 5.13  | 85.0  | 0.1114 | 70.2 | 0.104 | -136.9 |
| 1100    | 0.400 | 172.6  | 4.69  | 83.4  | 0.1213 | 70.6 | 0.097 | -146.4 |
| 1200    | 0.412 | 170.4  | 4.29  | 81.5  | 0.1309 | 71.1 | 0.092 | -156.2 |
| 1300    | 0.409 | 167.8  | 4.01  | 79.9  | 0.1411 | 71.1 | 0.091 | -166.0 |
| 1400    | 0.433 | 163.6  | 3.70  | 78.6  | 0.1518 | 71.6 | 0.092 | -174.7 |
| 1500    | 0.426 | 162.4  | 3.50  | 76.8  | 0.1615 | 71.4 | 0.093 | 176.8  |
| 1600    | 0.435 | 158.8  | 3.30  | 75.4  | 0.1714 | 71.5 | 0.097 | 170.5  |
| 1700    | 0.454 | 157.9  | 3.10  | 73.6  | 0.1817 | 71.8 | 0.103 | 165.0  |
| 1800    | 0.446 | 155.5  | 2.97  | 72.7  | 0.1918 | 71.2 | 0.109 | 159.1  |
| 1900    | 0.475 | 153.5  | 2.81  | 71.1  | 0.2021 | 71.3 | 0.117 | 155.2  |
| 2000    | 0.473 | 152.7  | 2.71  | 69.9  | 0.2113 | 71.1 | 0.125 | 150.3  |

Not recommended  
for new designs

## Sparameter

 $(V_{CE} = 3V, I_C = 5mA, Z_o = 50\Omega)$ 

| f (MHz) | S11   |        | S21   |       | S12    |      | S22    |       |
|---------|-------|--------|-------|-------|--------|------|--------|-------|
|         | MAG   | ANG    | MAG   | ANG   | MAG    | ANG  | MAG    | ANG   |
| 100     | 0.846 | -24.1  | 14.25 | 161.9 | 0.0287 | 75.9 | 0.9420 | -17.0 |
| 200     | 0.748 | -48.1  | 12.56 | 144.7 | 0.0534 | 64.3 | 0.8245 | -32.2 |
| 300     | 0.656 | -69.0  | 10.71 | 131.2 | 0.0705 | 56.4 | 0.6904 | -43.6 |
| 400     | 0.573 | -84.9  | 9.03  | 121.3 | 0.0817 | 52.0 | 0.5802 | -51.5 |
| 500     | 0.516 | -99.3  | 7.75  | 113.8 | 0.0895 | 49.6 | 0.4932 | -57.4 |
| 600     | 0.469 | -110.6 | 6.72  | 108.0 | 0.0961 | 48.6 | 0.4224 | -61.6 |
| 700     | 0.442 | -121.8 | 5.92  | 102.9 | 0.1015 | 48.5 | 0.3680 | -64.4 |
| 800     | 0.423 | -130.4 | 5.31  | 99.0  | 0.1071 | 49.0 | 0.3229 | -67.1 |
| 900     | 0.404 | -139.8 | 4.75  | 95.2  | 0.1128 | 49.9 | 0.2856 | -69.5 |
| 1000    | 0.399 | -146.0 | 4.34  | 92.0  | 0.1177 | 50.7 | 0.2535 | -71.2 |
| 1100    | 0.382 | -153.0 | 3.97  | 89.3  | 0.1230 | 51.7 | 0.2285 | -72.9 |
| 1200    | 0.397 | -159.3 | 3.69  | 86.5  | 0.1289 | 53.2 | 0.2052 | -74.8 |
| 1300    | 0.385 | -163.3 | 3.44  | 84.5  | 0.1344 | 54.2 | 0.1839 | -76.6 |
| 1400    | 0.400 | -169.7 | 3.18  | 81.8  | 0.1400 | 55.1 | 0.1680 | -78.0 |
| 1500    | 0.401 | -171.9 | 3.03  | 79.7  | 0.1462 | 56.2 | 0.1496 | -80.5 |
| 1600    | 0.399 | -177.2 | 2.84  | 77.8  | 0.1528 | 57.4 | 0.1381 | -82.1 |
| 1700    | 0.415 | 179.5  | 2.70  | 75.7  | 0.1590 | 58.2 | 0.1251 | -85.4 |
| 1800    | 0.411 | 176.8  | 2.57  | 74.4  | 0.1658 | 59.0 | 0.1122 | -89.0 |
| 1900    | 0.430 | 173.0  | 2.44  | 72.3  | 0.1727 | 60.1 | 0.1018 | -93.2 |
| 2000    | 0.433 | 171.4  | 2.35  | 70.7  | 0.1793 | 61.0 | 0.0914 | -97.8 |

Not recommended  
for new designs

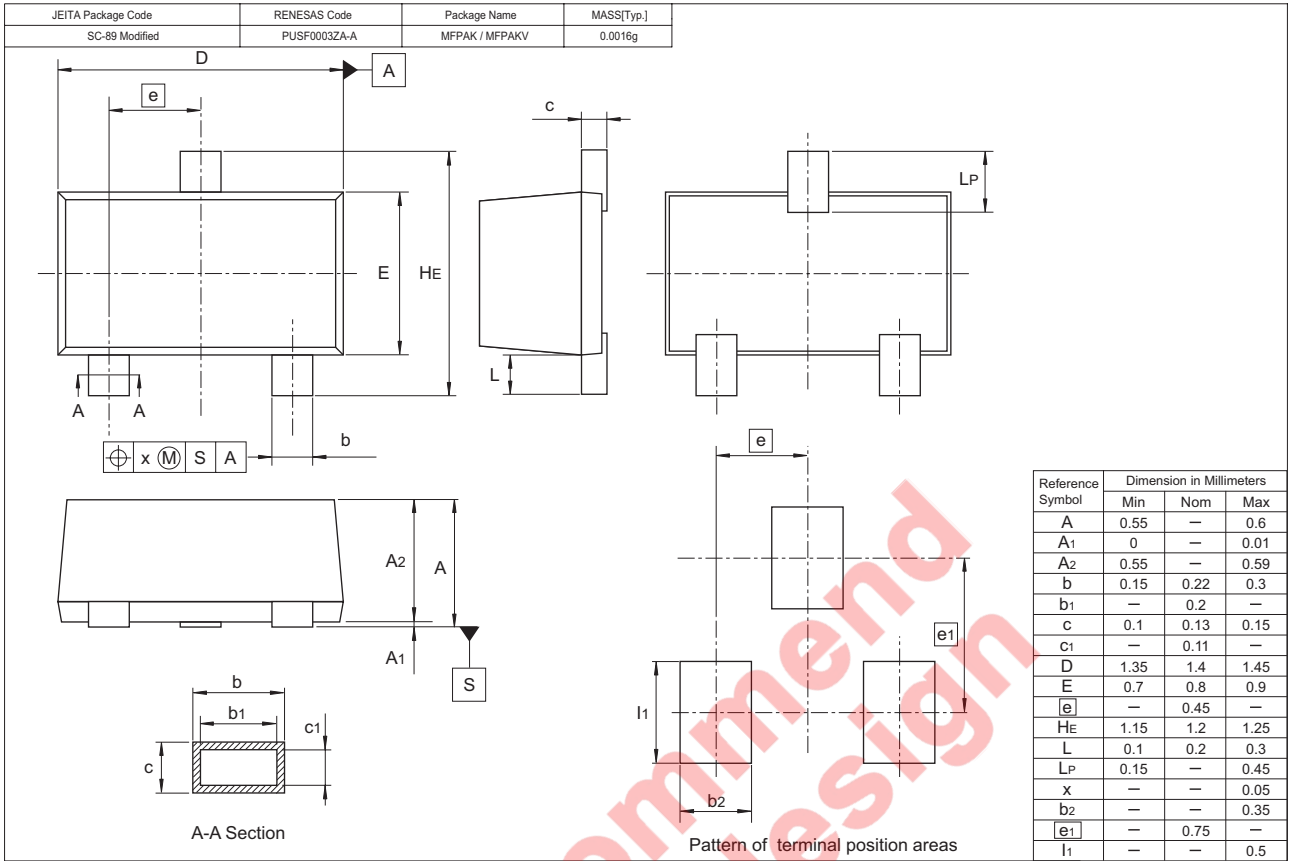
## Sparameter

 $(V_{CE} = 3V, I_C = 20mA, Z_o = 50\Omega)$ 

| f (MHz) | S11   |        | S21   |       | S12    |      | S22    |        |
|---------|-------|--------|-------|-------|--------|------|--------|--------|
|         | MAG   | ANG    | MAG   | ANG   | MAG    | ANG  | MAG    | ANG    |
| 100     | 0.564 | -54.4  | 32.56 | 145.1 | 0.0221 | 69.2 | 0.7913 | -35.9  |
| 200     | 0.449 | -94.6  | 22.76 | 123.2 | 0.0353 | 60.3 | 0.5457 | -58.3  |
| 300     | 0.408 | -119.2 | 16.50 | 111.2 | 0.0448 | 60.4 | 0.3871 | -71.0  |
| 400     | 0.377 | -136.7 | 12.76 | 104.4 | 0.0529 | 62.0 | 0.2929 | -78.9  |
| 500     | 0.370 | -148.4 | 10.36 | 99.6  | 0.0618 | 64.1 | 0.2311 | -85.4  |
| 600     | 0.360 | -157.6 | 8.71  | 95.8  | 0.0707 | 65.9 | 0.1861 | -91.3  |
| 700     | 0.365 | -165.0 | 7.52  | 92.7  | 0.0801 | 67.5 | 0.1524 | -96.6  |
| 800     | 0.364 | -170.4 | 6.64  | 90.0  | 0.0890 | 68.4 | 0.1274 | -102.7 |
| 900     | 0.366 | -176.1 | 5.87  | 87.7  | 0.0991 | 69.6 | 0.1061 | -110.4 |
| 1000    | 0.370 | -179.9 | 5.33  | 85.4  | 0.1081 | 70.1 | 0.0893 | -117.9 |
| 1100    | 0.373 | 174.6  | 4.87  | 83.7  | 0.1178 | 70.6 | 0.0768 | -126.7 |
| 1200    | 0.387 | 172.5  | 4.47  | 81.8  | 0.1274 | 71.1 | 0.0685 | -138.6 |
| 1300    | 0.379 | 168.0  | 4.16  | 80.4  | 0.1375 | 71.4 | 0.0630 | -150.7 |
| 1400    | 0.409 | 164.7  | 3.85  | 78.9  | 0.1473 | 71.7 | 0.0603 | -162.8 |
| 1500    | 0.399 | 163.4  | 3.64  | 77.1  | 0.1568 | 71.6 | 0.0596 | -175.0 |
| 1600    | 0.419 | 159.1  | 3.43  | 75.7  | 0.1667 | 71.8 | 0.0631 | 174.3  |
| 1700    | 0.427 | 159.5  | 3.24  | 73.9  | 0.1765 | 71.8 | 0.0681 | 166.3  |
| 1800    | 0.427 | 156.2  | 3.09  | 73.2  | 0.1862 | 71.3 | 0.0757 | 157.4  |
| 1900    | 0.446 | 154.6  | 2.93  | 71.8  | 0.1963 | 71.7 | 0.0829 | 152.5  |
| 2000    | 0.444 | 153.5  | 2.80  | 70.2  | 0.2057 | 71.4 | 0.0914 | 146.9  |

Not recommended  
for new designs

### Package Dimensions



### Ordering Information

| Part Name      | Quantity | Shipping Container                |
|----------------|----------|-----------------------------------|
| 2SC5702ZS-TL-E | 9000     | φ 178 mm Reel, 8 mm Emboss Taping |

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