Advance Information **RF Transistor for Low Noise Amplifier**

12 V, 100 mA, $f_T = 10$ GHz typ.

This RF transistor is designed for low noise amplifier applications. MCPH package is suitable for use under high temperature environment because it has superior heat radiation characteristics. This RF transistor is AEC–Q101 qualified and PPAP capable for automotive applications.

Features

- Low-noise Use: NF = 1.2 dB typ. (f = 1 GHz)
- High Cut-off Frequency: $f_T = 10$ GHz typ. ($V_{CE} = 5$ V)
- High Gain: $|S21e|^2 = 17 \text{ dB typ.} (f = 1 \text{ GHz})$
- MCPH4 Package is Pin-compatible with SC-82FL
- AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

Typical Applications

- Low Noise Amplifier for Digital Radio
- Low Noise Amplifier for TV
- Low Noise Amplifier for FM Radio
- RF Amplifier for UHF Application

MAXIMUM RATINGS at $T_A = 25^{\circ}C$

| Rating | Symbol | Value | Unit |
|---|-----------------------------------|----------------|------|
| Collector to Base Voltage | V _{CBO} | 20 | V |
| Collector to Emitter Voltage | V _{CEO} | 12 | V |
| Emitter to Base Voltage | V _{EBO} | 2 | V |
| Collector Current | ۱ _C | 100 | mA |
| Collector Dissipation | P _C | 450 | mW |
| Operating Junction and Storage Temper- ature | T _J , T _{stg} | –55 to +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

This document contains information on a new product. Specifications and information herein are subject to change without notice.

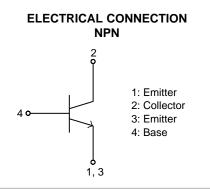


ON Semiconductor®

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SC-82FL MCPH4 CASE 419AR



MARKING DIAGRAM



GQ

ΧХ

ORDERING INFORMATION

| Device | Package | Shipping [†] |
|----------------|----------------------|-----------------------|
| NSVF4015SG4T1G | SC-82FL (Pb-Free) | 3000 / Tape & Reel |

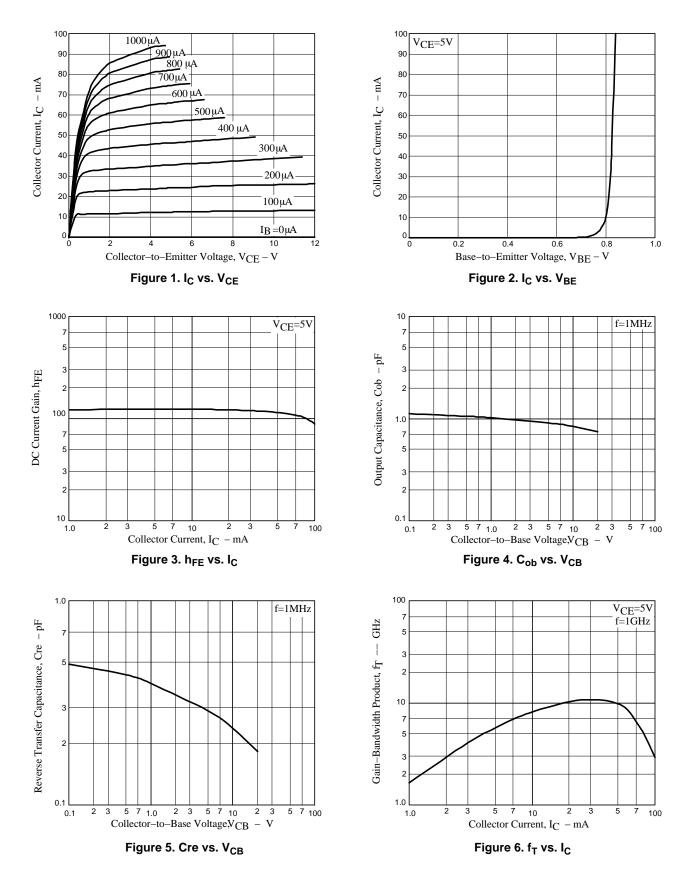
+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

Table 1. ELECTRICAL CHARACTERISTICS at $T_A = 25^{\circ}C$ (Note 1)

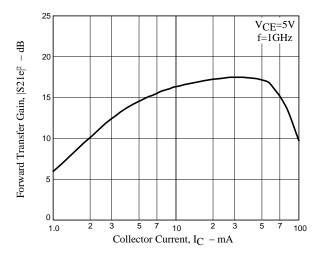
| | | | | Value | | |
|--------------------------|---------------------|--|-----|-------|-----|------|
| Parameter | Symbol | Conditions | Min | Тур | Max | Unit |
| Collector Cutoff Current | I _{CBO} | $V_{CB} = 5 \text{ V}, \text{ I}_{E} = 0 \text{ A}$ | | | 1.0 | μΑ |
| Emitter Cutoff Current | I _{EBO} | $V_{EB} = 1 \text{ V}, \text{ I}_{C} = 0 \text{ A}$ | | | 1.0 | μΑ |
| DC Current Gain | h _{FE} | $V_{CE} = 5 \text{ V}, \text{ I}_{C} = 50 \text{ mA}$ | 60 | | 150 | |
| Gain-Bandwidth Product | f _T | $V_{CE} = 5 \text{ V}, \text{ I}_{C} = 30 \text{ mA}$ | 8 | 10 | | GHz |
| Forward Transfer Gain | S21e ² | $V_{CE} = 5 \text{ V}, \text{ I}_{C} = 30 \text{ mA}, \text{ f} = 1 \text{ GHz}$ | 14 | 17 | | dB |
| Noise Figure | NF | V_{CE} = 5 V, I_C = 10 mA, f = 1 GHz | | 1.2 | 1.8 | dB |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.1. Pay attention to handling since it is liable to be affected by static electricity due to the high-frequency process adopted.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS





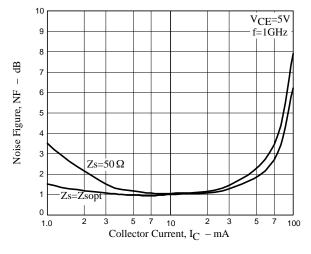


Figure 8. NF vs. I_C

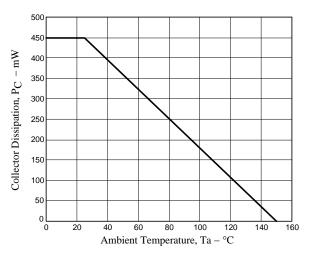


Figure 9. P_C vs. T_A

| | (| | | | | | | |
|--------------|-------|--------|--------|-------|-------|-------|-------|--------|
| /CE=3V, IC=1 | 0mA | | | | | | | |
| Freq(MHz) | S11 | ∠S11 | S21 | ∠S21 | S12 | ∠ S12 | S22 | ∠S22 |
| 100 | 0.763 | -38.0 | 22.980 | 155.3 | 0.018 | 71.5 | 0.923 | -22.7 |
| 200 | 0.733 | -71.8 | 20.122 | 135.9 | 0.031 | 58.6 | 0.798 | -40.2 |
| 300 | 0.702 | -98.5 | 17.019 | 121.3 | 0.038 | 50.6 | 0.703 | -53.5 |
| 400 | 0.690 | -116.5 | 14.110 | 110.7 | 0.043 | 46.3 | 0.626 | -62.9 |
| 500 | 0.701 | -127.2 | 12.307 | 103.5 | 0.048 | 45.0 | 0.592 | -67.4 |
| 600 | 0.679 | -137.1 | 10.431 | 97.5 | 0.050 | 43.7 | 0.531 | -72.0 |
| 700 | 0.663 | -145.1 | 8.949 | 92.7 | 0.052 | 43.6 | 0.484 | -75.2 |
| 800 | 0.651 | -152.1 | 7.848 | 88.4 | 0.054 | 43.9 | 0.446 | -78.7 |
| 900 | 0.646 | -157.6 | 6.993 | 84.8 | 0.057 | 44.0 | 0.422 | -81.6 |
| 1000 | 0.639 | -162.3 | 6.272 | 81.9 | 0.059 | 45.1 | 0.404 | -84.4 |
| 1200 | 0.635 | -170.2 | 5.211 | 76.5 | 0.063 | 47.1 | 0.375 | -88.7 |
| 1400 | 0.634 | -176.5 | 4.462 | 71.7 | 0.068 | 49.1 | 0.362 | -92.4 |
| 1600 | 0.633 | 177.9 | 3.907 | 67.3 | 0.073 | 51.2 | 0.352 | -95.9 |
| 1800 | 0.636 | 173.2 | 3.463 | 63.4 | 0.079 | 52.7 | 0.351 | -99.0 |
| 2000 | 0.637 | 169.1 | 3.122 | 59.5 | 0.085 | 54.3 | 0.352 | -102.3 |
| 2200 | 0.637 | 164.9 | 2.838 | 55.8 | 0.091 | 55.5 | 0.356 | -105.2 |
| 2400 | 0.638 | 161.0 | 2.604 | 52.1 | 0.098 | 56.5 | 0.364 | -108.1 |
| 2600 | 0.639 | 157.3 | 2.413 | 48.7 | 0.105 | 57.2 | 0.372 | -111.1 |
| 2800 | 0.642 | 153.7 | 2.244 | 45.1 | 0.112 | 57.9 | 0.384 | -113.5 |
| 3000 | 0.641 | 150.0 | 2.095 | 41.8 | 0.120 | 57.8 | 0.396 | -116.2 |

| Freq(MHz) | S11 | ∠S11 | S21 | ∠S21 | S12 | ∠ S12 | S22 | ∠ S22 |
|---|---|---|---|---|---|---|---|---|
| 100 | 0.542 | -76.9 | 42.437 | 142.3 | 0.013 | 63.9 | 0.801 | -36.2 |
| 200 | 0.542 | -118.2 | 30.735 | 119.6 | 0.015 | 53.9 | 0.602 | -56.8 |
| 300 | 0.588 | -118.2 | 22.677 | 119.0 | 0.020 | 52.3 | 0.505 | -69.3 |
| 400 | 0.626 | -150.0 | 17.506 | 98.4 | 0.024 | 53.8 | 0.303 | -77.9 |
| 500 | 0.635 | -155.0 | 14.522 | 92.7 | 0.027 | 55.6 | 0.448 | -79.8 |
| 600 | 0.630 | -161.3 | 12.035 | 88.5 | 0.035 | 57.8 | 0.423 | -83.6 |
| 700 | 0.627 | -166.4 | 10.249 | 85.2 | 0.035 | 59.8 | 0.350 | -85.0 |
| 800 | 0.626 | -170.9 | 8.902 | 82.2 | 0.042 | 61.3 | 0.330 | -90.4 |
| 900 | 0.627 | -174.7 | 7.888 | 79.5 | 0.042 | 62.3 | 0.327 | -93.2 |
| 1000 | 0.626 | -177.8 | 7.046 | 77.3 | 0.045 | 63.4 | 0.303 | -96.1 |
| 1200 | 0.629 | 176.7 | 5.835 | 73.1 | 0.057 | 65.4 | 0.287 | -100.4 |
| 1200 | 0.631 | 170.7 | 4.976 | 69.2 | 0.065 | 66.2 | 0.287 | -100.4 |
| 1600 | 0.633 | 167.7 | 4.344 | 65.6 | 0.003 | 66.5 | 0.280 | -105.0 |
| 1800 | 0.637 | 163.9 | 3.854 | 62.0 | 0.075 | 66.8 | 0.280 | -100.7 |
| 2000 | 0.638 | 160.5 | 3.474 | 58.7 | 0.090 | 66.6 | 0.281 | -112.5 |
| 2200 | 0.638 | 156.8 | 3.160 | 55.5 | 0.090 | 66.5 | 0.293 | -115.1 |
| 2400 | 0.640 | 153.5 | 2.900 | 52.2 | 0.108 | 65.8 | 0.302 | -117.3 |
| 2600 | 0.640 | 155.5 | 2.684 | 49.0 | 0.100 | 65.2 | 0.302 | -119.5 |
| 2800 | 0.642 | 136.2 | 2.499 | 45.9 | 0.117 | 64.3 | 0.312 | -121.6 |
| 3000 | 0.640 | 143.6 | 2.337 | 42.8 | 0.125 | 63.6 | 0.337 | -123.8 |
| Freq(MHz) | S11 | ∠\$11 | S21 | ∠ S21 | S12 | ∠ \$12 | S22 | ∠S22 |
| 100 | 0.514 | -110.3 | 43.067 | 133.3 | | | | |
| 200 | - | | | 155.5 | 0.011 | 59.0 | 0.700 | -40.9 |
| | 0.607 | -141.4 | 29.221 | 112.3 | 0.011 0.016 | 59.0 53.1 | 0.700 0.495 | -40.9 -58.9 |
| 300 | 0.607 | | | | | | | |
| 300 400 | | -141.4 | 29.221 | 112.3 | 0.016 | 53.1 | 0.495 | -58.9 |
| | 0.642 | -141.4 -154.9 | 29.221 20.818 | 112.3 101.0 | 0.016 0.019 | 53.1 55.3 | 0.495 0.417 | -58.9 -68.7 |
| 400 | 0.642 0.657 | -141.4 -154.9 -162.5 | 29.221 20.818 15.865 | 112.3 101.0 94.1 | 0.016 0.019 0.023 | 53.1 55.3 58.5 | 0.495 0.417 0.376 | -58.9 -68.7 -75.5 |
| 400 500 | 0.642 0.657 0.660 | -141.4 -154.9 -162.5 -165.8 | 29.221 20.818 15.865 13.033 | 112.3 101.0 94.1 88.9 | 0.016 0.019 0.023 0.027 | 53.1 55.3 58.5 61.4 | 0.495 0.417 0.376 0.360 | -58.9 -68.7 -75.5 -75.7 |
| 400 500 600 | 0.642 0.657 0.660 0.659 | -141.4 -154.9 -162.5 -165.8 -170.3 | 29.221 20.818 15.865 13.033 10.812 | 112.3 101.0 94.1 88.9 85.3 | 0.016 0.019 0.023 0.027 0.030 | 53.1 55.3 58.5 61.4 64.0 | 0.495 0.417 0.376 0.360 0.330 | -58.9 -68.7 -75.5 -75.7 -78.7 |
| 400 500 600 700 | 0.642 0.657 0.660 0.659 0.658 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 | 29.221 20.818 15.865 13.033 10.812 9.213 | 112.3 101.0 94.1 88.9 85.3 82.3 | 0.016 0.019 0.023 0.027 0.030 0.034 | 53.1 55.3 58.5 61.4 64.0 66.1 | 0.495 0.417 0.376 0.360 0.330 0.307 | -58.9 -68.7 -75.5 -75.7 -75.7 -78.7 -81.5 |
| 400 500 600 700 800 | 0.642 0.657 0.660 0.659 0.658 0.658 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 |
| 400 500 600 700 800 900 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 |
| 400 500 600 700 800 900 1000 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 | 0.016 0.019 0.023 0.027 0.030 0.034 0.034 0.038 0.042 0.046 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 |
| 400 500 600 700 800 900 1000 1200 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.055 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 |
| 400 500 600 700 800 900 1000 1200 1400 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.663 0.662 0.666 0.670 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.055 0.063 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 -93.7 |
| 400 500 600 700 800 900 1000 1200 1400 1600 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 0.666 0.670 0.673 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 164.1 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 3.897 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 63.4 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.055 0.063 0.072 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 71.5 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 0.270 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 -93.7 -97.1 -100.2 |
| 400 500 600 700 800 900 1000 1200 1400 1600 1800 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 0.673 0.676 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 164.1 160.6 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 3.897 3.469 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 63.4 59.9 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.055 0.063 0.072 0.080 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 71.5 71.4 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 0.270 0.275 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 -93.7 -97.1 -100.2 -103.3 |
| 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 0.670 0.673 0.676 0.678 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 164.1 160.6 157.5 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 3.897 3.469 3.113 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 63.4 59.9 56.5 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.046 0.055 0.063 0.072 0.080 0.089 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 71.5 71.4 71.0 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 0.270 0.275 0.284 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 -93.7 -97.1 -100.2 -103.3 -106.5 |
| 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 2200 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 0.670 0.673 0.676 0.678 0.679 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 164.1 160.6 157.5 154.1 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 3.897 3.469 3.113 2.836 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 63.4 59.9 56.5 53.1 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.046 0.055 0.063 0.072 0.080 0.089 0.098 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 71.5 71.4 71.0 70.4 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 0.270 0.275 0.284 0.275 0.284 0.293 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -89.7 -93.7 -93.7 -97.1 -100.2 -103.3 -106.5 -109.3 |
| 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 2200 2400 | 0.642 0.657 0.660 0.659 0.658 0.660 0.663 0.662 0.666 0.670 0.673 0.676 0.678 0.679 0.681 | -141.4 -154.9 -162.5 -165.8 -170.3 -174.3 -177.8 179.2 176.6 172.0 167.9 164.1 160.6 157.5 154.1 150.9 | 29.221 20.818 15.865 13.033 10.812 9.213 7.995 7.097 6.333 5.247 4.475 3.897 3.469 3.113 2.836 2.598 | 112.3 101.0 94.1 88.9 85.3 82.3 79.5 77.1 74.8 70.8 67.0 63.4 59.9 56.5 53.1 49.8 | 0.016 0.019 0.023 0.027 0.030 0.034 0.038 0.042 0.046 0.055 0.063 0.072 0.080 0.098 0.107 | 53.1 55.3 58.5 61.4 64.0 66.1 67.8 68.6 69.6 70.9 71.3 71.5 71.4 71.0 70.4 69.8 | 0.495 0.417 0.376 0.360 0.330 0.307 0.291 0.284 0.277 0.268 0.269 0.270 0.275 0.284 0.293 0.304 | -58.9 -68.7 -75.5 -75.7 -78.7 -81.5 -84.5 -84.5 -87.1 -93.7 -93.7 -93.7 -97.1 -100.2 -103.3 -106.5 -109.3 -111.9 |

| CE=3V, IC=8 | • | , | | | | | | |
|--|--|---|---|--|---|--|--|---|
| Freq(MHz) | S11 | ∠S11 | S21 | ∠ S21 | S12 | ∠ S12 | S22 | ∠S22 |
| 100 | 0.662 | -146.8 | 29.622 | 120.5 | 0.011 | 47.5 | 0.455 | -44.8 |
| 200 | 0.751 | -164.0 | 16.762 | 102.8 | 0.014 | 46.9 | 0.315 | -52.9 |
| 300 | 0.774 | -171.2 | 11.369 | 94.2 | 0.017 | 52.5 | 0.288 | -57.1 |
| 400 | 0.783 | -175.6 | 8.549 | 88.9 | 0.019 | 58.6 | 0.279 | -61.3 |
| 500 | 0.778 | -178.0 | 6.977 | 84.2 | 0.023 | 62.0 | 0.283 | -61.0 |
| 600 | 0.778 | 179.0 | 5.801 | 81.0 | 0.027 | 66.0 | 0.272 | -62.9 |
| 700 | 0.778 | 176.3 | 4.965 | 78.3 | 0.030 | 68.6 | 0.265 | -65.2 |
| 800 | 0.780 | 173.9 | 4.316 | 75.7 | 0.034 | 70.2 | 0.260 | -68.0 |
| 900 | 0.782 | 171.6 | 3.846 | 73.3 | 0.038 | 71.9 | 0.263 | -70.7 |
| 1000 | 0.782 | 169.6 | 3.439 | 71.0 | 0.042 | 73.0 | 0.263 | -73.7 |
| 1200 | 0.787 | 166.0 | 2.860 | 66.6 | 0.051 | 74.5 | 0.268 | -78.5 |
| 1400 | 0.789 | 162.5 | 2.454 | 62.4 | 0.059 | 75.3 | 0.278 | -83.1 |
| 1600 | 0.792 | 159.2 | 2.139 | 58.4 | 0.068 | 75.7 | 0.288 | -87.5 |
| 1800 | 0.796 | 156.0 | 1.912 | 54.5 | 0.077 | 75.7 | 0.300 | -91.7 |
| 2000 | 0.797 | 153.1 | 1.721 | 50.8 | 0.086 | 75.4 | 0.314 | -96.1 |
| 2200 | 0.797 | 149.9 | 1.569 | 47.1 | 0.095 | 75.0 | 0.328 | -100.0 |
| 2400 | 0.799 | 146.8 | 1.436 | 43.4 | 0.105 | 74.1 | 0.343 | -103.8 |
| 2600 | 0.800 | 143.8 | 1.331 | 39.9 | 0.115 | 73.4 | 0.359 | -107.4 |
| 2800 | 0.801 | 140.6 | 1.238 | 36.5 | 0.125 | 72.2 | 0.377 | -110.9 |
| 3000 | 0.799 | 137.4 | 1.157 | 33.3 | 0.135 | 71.1 | 0.394 | -114.4 |
| Freq(MHz) | S11 | ∠\$11 | S21 | ∠S21 | S12 | ∠ S12 | S22 | ∠ S22 |
| 100 | 0.771 | -35.8 | 23.180 | 156.3 | 0.016 | 72.7 | 0.933 | -20.3 |
| 200 | 0.741 | -68.2 | 20.484 | 137.3 | 0.028 | 60.4 | 0.820 | -36.2 |
| 300 | 0.706 | -94.4 | 17.503 | 122.8 | 0.035 | 53.0 | 0.722 | -48.5 |
| 400 | 0.691 | -112.7 | 14.633 | 111.9 | 0.040 | 48.5 | 0.656 | -57.3 |
| 500 | 0.701 | -123.8 | 12.817 | 104.7 | 0.044 | 47.2 | 0.622 | -61.7 |
| 600 | 0.677 | -133.9 | 10.891 | 98.4 | 0.047 | 46.0 | 0.560 | -66.0 |
| 700 | 0.659 | -142.2 | 9.349 | 93.5 | 0.049 | 45.5 | 0.513 | -68.9 |
| 800 | 0.646 | -149.5 | 8.209 | 89.1 | 0.051 | 45.7 | 0.474 | -72.0 |
| 900 | 0.640 | | | | 0.001 | | | |
| | | -155.2 | 7.315 | 85.3 | 0.053 | 46.1 | 0.449 | -74.7 |
| 1000 | 0.633 | -155.2 -160.1 | 7.315 6.557 | 85.3 82.3 | | 46.1 46.9 | 0.449 0.428 | -74.7 -77.4 |
| 1000 1200 | | | | | 0.053 | | | |
| 1200 1400 | 0.633 0.628 0.625 | -160.1 -168.2 -174.7 | 6.557 5.459 4.663 | 82.3 76.8 71.9 | 0.053 0.055 0.060 0.064 | 46.9 49.0 51.0 | 0.428 0.399 0.385 | -77.4 -81.4 -84.9 |
| 1200 1400 1600 | 0.633 0.628 0.625 0.625 | -160.1 -168.2 -174.7 179.5 | 6.557 5.459 4.663 4.086 | 82.3 76.8 71.9 67.5 | 0.053 0.055 0.060 0.064 0.069 | 46.9 49.0 51.0 53.3 | 0.428 0.399 | -77.4 -81.4 -84.9 -88.4 |
| 1200 1400 | 0.633 0.628 0.625 | -160.1 -168.2 -174.7 | 6.557 5.459 4.663 | 82.3 76.8 71.9 | 0.053 0.055 0.060 0.064 | 46.9 49.0 51.0 | 0.428 0.399 0.385 | -77.4 -81.4 -84.9 -88.4 -91.5 |
| 1200 1400 1600 | 0.633 0.628 0.625 0.625 | -160.1 -168.2 -174.7 179.5 | 6.557 5.459 4.663 4.086 | 82.3 76.8 71.9 67.5 | 0.053 0.055 0.060 0.064 0.069 | 46.9 49.0 51.0 53.3 | 0.428 0.399 0.385 0.373 | -77.4 -81.4 -84.9 -88.4 |
| 1200 1400 1600 1800 | 0.633 0.628 0.625 0.625 0.625 | -160.1 -168.2 -174.7 179.5 174.7 | 6.557 5.459 4.663 4.086 3.616 | 82.3 76.8 71.9 67.5 63.5 | 0.053 0.055 0.060 0.064 0.069 0.075 | 46.9 49.0 51.0 53.3 54.8 | 0.428 0.399 0.385 0.373 0.372 | -77.4 -81.4 -84.9 -88.4 -91.5 |
| 1200 1400 1600 1800 2000 | 0.633 0.628 0.625 0.625 0.627 0.628 | -160.1 -168.2 -174.7 179.5 174.7 170.5 | 6.557 5.459 4.663 4.086 3.616 3.260 | 82.3 76.8 71.9 67.5 63.5 59.5 | 0.053 0.055 0.060 0.064 0.069 0.075 0.080 | 46.9 49.0 51.0 53.3 54.8 56.6 | 0.428 0.399 0.385 0.373 0.372 0.372 | -77.4 -81.4 -84.9 -88.4 -91.5 -94.9 |
| 1200 1400 1600 1800 2000 2200 | 0.633 0.628 0.625 0.625 0.627 0.628 0.628 | -160.1 -168.2 -174.7 179.5 174.7 170.5 166.2 | 6.557 5.459 4.663 4.086 3.616 3.260 2.960 | 82.3 76.8 71.9 67.5 63.5 59.5 55.7 | 0.053 0.055 0.060 0.064 0.069 0.075 0.080 0.086 | 46.9 49.0 51.0 53.3 54.8 56.6 57.9 | 0.428 0.399 0.385 0.373 0.372 0.372 0.376 | -77.4 -81.4 -84.9 -88.4 -91.5 -94.9 -98.0 |
| 1200 1400 1600 1800 2000 2200 2400 | 0.633 0.628 0.625 0.625 0.627 0.628 0.628 0.628 | -160.1 -168.2 -174.7 179.5 174.7 170.5 166.2 162.2 | 6.557 5.459 4.663 4.086 3.616 3.260 2.960 2.715 | 82.3 76.8 71.9 67.5 63.5 59.5 55.7 52.0 | 0.053 0.055 0.060 0.064 0.069 0.075 0.080 0.086 0.093 | 46.9 49.0 51.0 53.3 54.8 56.6 57.9 58.9 | 0.428 0.399 0.385 0.373 0.372 0.372 0.376 0.383 | -77.4 -81.4 -84.9 -88.4 -91.5 -94.9 -98.0 -101.1 |

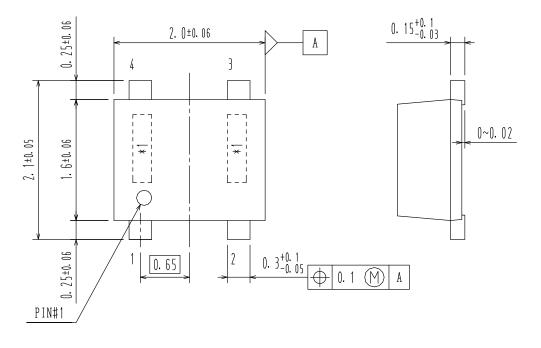
| CE=5V, IC=3 | | | | | | - | | |
|---|---|--|--|--|---|--|---|--|
| Freq(MHz) | S11 | ∠\$11 | S21 | ∠S21 | S12 | ∠ \$12 | S22 | ∠S22 |
| 100 | 0.542 | -70.6 | 43.013 | 144.3 | 0.012 | 66.3 | 0.826 | -31.8 |
| 200 | 0.577 | -112.5 | 32.303 | 121.4 | 0.018 | 56.3 | 0.636 | -50.4 |
| 300 | 0.599 | -134.2 | 24.068 | 107.8 | 0.022 | 55.0 | 0.539 | -61.6 |
| 400 | 0.611 | -146.5 | 18.636 | 99.4 | 0.025 | 55.5 | 0.478 | -69.3 |
| 500 | 0.620 | -151.9 | 15.457 | 93.6 | 0.029 | 57.7 | 0.454 | -71.4 |
| 600 | 0.614 | -158.6 | 12.813 | 89.2 | 0.033 | 59.6 | 0.410 | -74.7 |
| 700 | 0.611 | -164.1 | 10.898 | 85.6 | 0.036 | 61.5 | 0.376 | -77.5 |
| 800 | 0.610 | -168.7 | 9.470 | 82.5 | 0.039 | 62.9 | 0.351 | -80.5 |
| 900 | 0.611 | -172.7 | 8.381 | 79.8 | 0.043 | 64.1 | 0.337 | -83.2 |
| 1000 | 0.610 | -176.0 | 7.487 | 77.5 | 0.047 | 65.3 | 0.324 | -85.8 |
| 1200 | 0.612 | 178.3 | 6.186 | 73.2 | 0.054 | 66.8 | 0.306 | -89.7 |
| 1400 | 0.615 | 173.4 | 5.277 | 69.2 | 0.062 | 67.7 | 0.299 | -93.1 |
| 1600 | 0.617 | 169.0 | 4.596 | 65.6 | 0.070 | 68.2 | 0.296 | -96.3 |
| 1800 | 0.620 | 165.1 | 4.085 | 62.0 | 0.078 | 68.6 | 0.297 | -99.3 |
| 2000 | 0.622 | 161.6 | 3.669 | 58.7 | 0.086 | 68.4 | 0.301 | -102.5 |
| 2200 | 0.622 | 158.0 | 3.344 | 55.5 | 0.095 | 68.3 | 0.307 | -105.1 |
| 2400 | 0.625 | 154.6 | 3.065 | 52.1 | 0.103 | 67.8 | 0.316 | -107.9 |
| 2600 | 0.625 | 151.3 | 2.835 | 48.8 | 0.112 | 67.2 | 0.326 | -110.5 |
| 2800 | 0.628 | 148.0 | 2.638 | 45.7 | 0.120 | 66.5 | 0.339 | -113.0 |
| 3000 | 0.626 | 144.6 | 2.464 | 42.6 | 0.129 | 65.6 | 0.352 | -115.5 |
| Freq(MHz) | S11 | ∠S11 | S21 | ∠S21 | S12 | ∠ S12 | S22 | ∠S22 |
| 100 | 0.479 | -97.2 | 42.927 | 137.2 | 0.010 | 63.4 | 0.761 | -35.0 |
| 200 | 0.566 | -132.9 | 32.978 | 115.4 | 0.015 | 56.7 | 0.560 | -51.6 |
| 300 | 0.603 | -148.8 | 23.718 | 103.2 | 0.018 | 58.0 | 0.485 | |
| 400 | 0.620 | -157.8 | 18.120 | | | | | -60.6 |
| 500 | 0.625 | | | 95.7 | 0.021 | 60.4 | 0.427 | -66.9 |
| 600 | | -161.4 | 14.893 | 90.4 | 0.021 0.025 | 60.4 63.7 | 0.427 0.410 | -66.9 -68.0 |
| | 0.624 | -166.7 | 12.324 | 90.4 86.4 | 0.021 0.025 0.029 | 60.4 63.7 66.0 | 0.427 0.410 0.375 | -66.9 -68.0 -70.7 |
| 700 | 0.624 | -166.7 -171.0 | 12.324 10.482 | 90.4 86.4 83.2 | 0.021 0.025 0.029 0.032 | 60.4 63.7 66.0 68.0 | 0.427 0.410 0.375 0.348 | -66.9 -68.0 -70.7 -73.2 |
| 800 | 0.624 0.626 | -166.7 -171.0 -174.8 | 12.324 10.482 9.088 | 90.4 86.4 83.2 80.4 | 0.021 0.025 0.029 0.032 0.036 | 60.4 63.7 66.0 68.0 69.2 | 0.427 0.410 0.375 0.348 0.328 | -66.9 -68.0 -70.7 -73.2 -75.9 |
| 800 900 | 0.624 0.626 0.628 | -166.7 -171.0 -174.8 -178.1 | 12.324 10.482 9.088 8.053 | 90.4 86.4 83.2 80.4 77.9 | 0.021 0.025 0.029 0.032 0.036 0.040 | 60.4 63.7 66.0 68.0 69.2 70.4 | 0.427 0.410 0.375 0.348 0.328 0.317 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 |
| 800 900 1000 | 0.624 0.626 0.628 0.628 | -166.7 -171.0 -174.8 -178.1 179.1 | 12.324 10.482 9.088 8.053 7.184 | 90.4 86.4 83.2 80.4 77.9 75.6 | 0.021 0.025 0.029 0.032 0.036 0.040 0.044 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 |
| 800 900 1000 1200 | 0.624 0.626 0.628 0.628 0.633 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 | 12.324 10.482 9.088 8.053 7.184 5.943 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 | 0.021 0.025 0.029 0.032 0.036 0.040 0.044 0.052 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 |
| 800 900 1000 1200 1400 | 0.624 0.626 0.628 0.628 0.633 0.633 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 |
| 800 900 1000 1200 1400 1600 | 0.624 0.626 0.628 0.628 0.633 0.633 0.636 0.640 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 | 0.021 0.025 0.029 0.032 0.036 0.040 0.044 0.052 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 |
| 800 900 1000 1200 1400 | 0.624 0.626 0.628 0.628 0.633 0.636 0.640 0.643 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 3.917 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 60.6 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 0.077 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 0.295 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 |
| 800 900 1000 1200 1400 1600 | 0.624 0.626 0.628 0.628 0.633 0.633 0.636 0.640 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 159.1 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 -91.5 |
| 800 900 1000 1200 1400 1600 1800 | 0.624 0.626 0.628 0.628 0.633 0.636 0.640 0.643 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 3.917 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 60.6 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 0.077 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 72.7 72.6 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 0.295 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 -91.5 -94.7 |
| 800 900 1000 1200 1400 1600 1800 2000 | 0.624 0.626 0.628 0.628 0.633 0.633 0.636 0.640 0.643 0.645 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 159.1 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 3.917 3.518 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 60.6 57.2 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 0.077 0.086 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 72.7 72.6 72.3 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 0.295 0.301 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 -91.5 -94.7 -98.1 |
| 800 900 1000 1200 1400 1600 1800 2000 2200 | 0.624 0.626 0.628 0.633 0.633 0.636 0.640 0.643 0.645 0.645 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 159.1 155.6 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 3.917 3.518 3.202 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 60.6 57.2 54.0 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 0.077 0.086 0.094 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 72.7 72.6 72.3 71.8 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 0.292 0.295 0.301 0.309 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 -91.5 -94.7 -98.1 -101.1 -104.0 |
| 800 900 1000 1200 1400 1600 1800 2000 2200 2400 | 0.624 0.626 0.628 0.628 0.633 0.636 0.640 0.643 0.645 0.646 | -166.7 -171.0 -174.8 -178.1 179.1 174.2 169.8 165.9 162.3 159.1 155.6 152.4 | 12.324 10.482 9.088 8.053 7.184 5.943 5.061 4.407 3.917 3.518 3.202 2.931 | 90.4 86.4 83.2 80.4 77.9 75.6 71.5 67.7 64.1 60.6 57.2 54.0 50.6 | 0.021 0.025 0.029 0.032 0.036 0.040 0.040 0.044 0.052 0.060 0.069 0.077 0.086 0.094 0.103 | 60.4 63.7 66.0 68.0 69.2 70.4 70.9 72.2 72.7 72.6 72.3 71.8 71.1 | 0.427 0.410 0.375 0.348 0.328 0.317 0.308 0.295 0.292 0.292 0.292 0.295 0.301 0.309 0.319 | -66.9 -68.0 -70.7 -73.2 -75.9 -78.4 -80.9 -84.6 -88.2 -91.5 -94.7 -98.1 -101.1 |

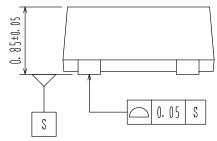
| /CE=5V, IC=8 | | | | | | | | |
|--|---|--|--|--|--|--|--|--|
| Freq(MHz) | S11 | ∠\$11 | S21 | ∠ S21 | S12 | ∠ S12 | S22 | ∠ S22 |
| 100 | 0.558 | -133.0 | 39.014 | 127.8 | 0.009 | 54.5 | 0.618 | -33.7 |
| 200 | 0.671 | -155.6 | 23.364 | 107.6 | 0.012 | 52.6 | 0.457 | -41.5 |
| 300 | 0.704 | -165.1 | 16.107 | 97.6 | 0.014 | 57.5 | 0.415 | -45.4 |
| 400 | 0.718 | -170.7 | 12.150 | 91.5 | 0.017 | 62.9 | 0.395 | -49.0 |
| 500 | 0.716 | -173.4 | 9.907 | 86.7 | 0.021 | 66.8 | 0.385 | -50.4 |
| 600 | 0.717 | -177.0 | 8.214 | 83.3 | 0.024 | 69.5 | 0.378 | -52.4 |
| 700 | 0.718 | 179.9 | 7.015 | 80.4 | 0.028 | 72.5 | 0.364 | -54.4 |
| 800 | 0.720 | 177.1 | 6.091 | 77.8 | 0.031 | 73.9 | 0.354 | -57.0 |
| 900 | 0.723 | 174.5 | 5.413 | 75.3 | 0.035 | 75.7 | 0.351 | -59.7 |
| 1000 | 0.723 | 172.3 | 4.829 | 72.9 | 0.039 | 76.8 | 0.346 | -62.4 |
| 1200 | 0.728 | 168.3 | 4.009 | 68.8 | 0.047 | 78.1 | 0.343 | -67.0 |
| 1400 | 0.731 | 164.7 | 3.423 | 64.7 | 0.055 | 78.9 | 0.347 | -71.8 |
| 1600 | 0.735 | 161.2 | 2.987 | 60.8 | 0.063 | 78.9 | 0.352 | -76.2 |
| 1800 | 0.738 | 157.9 | 2.662 | 57.1 | 0.072 | 79.1 | 0.359 | -80.6 |
| 2000 | 0.740 | 155.0 | 2.393 | 53.5 | 0.081 | 78.7 | 0.369 | -85.3 |
| 2200 | 0.741 | 151.7 | 2.179 | 50.0 | 0.090 | 78.2 | 0.379 | -89.5 |
| 2400 | 0.743 | 148.6 | 1.993 | 46.4 | 0.099 | 77.4 | 0.391 | -93.5 |
| 2600 | 0.744 | 145.6 | 1.843 | 43.0 | 0.109 | 76.5 | 0.404 | -97.4 |
| 2800 | 0.746 | 142.4 | 1.716 | 39.6 | 0.119 | 75.4 | 0.418 | -101.3 |
| 3000 | 0.744 | 139.2 | 1.601 | 36.3 | 0.129 | 74.2 | 0.433 | -105.1 |
| CE=8V, IC=1 Freq(MHz) | S11 | ∠S11 | S21 | ∠ S21 | S12 | ∠ S12 | S22 | ∠ S22 |
| 100 | 0.784 | -33.9 | 22.973 | 157.1 | 0.014 | 73.5 | 0.941 | -18.1 |
| 200 | 0.754 | -64.8 | 20.491 | 138.6 | 0.025 | 62.4 | 0.839 | -32.6 |
| 300 | 0.715 | -90.5 | 17.690 | 124.1 | 0.032 | 55.0 | 0.739 | -44.1 |
| 400 | 0.697 | -109.0 | 14.905 | 113.1 | 0.037 | 50.3 | 0.685 | -52.2 |
| 500 | 0.704 | -120.4 | 13.108 | 105.8 | 0.041 | 49.3 | 0.652 | -56.5 |
| 600 | 0.678 | -130.9 | 11.176 | 99.3 | 0.044 | 47.7 | 0.591 | -60.6 |
| 700 | 0.659 | -139.5 | 9.599 | 94.2 | 0.046 | 47.3 | 0.544 | -63.3 |
| 800 | 0.645 | -146.9 | 8.439 | 89.7 | 0.048 | 47.3 | 0.504 | -66.1 |
| 900 | 0.638 | -152.9 | 7.523 | 85.8 | 0.050 | 47.5 | 0.478 | -68.7 |
| 1000 | 0.629 | -158.0 | 6.746 | 82.7 | 0.052 | 48.6 | 0.457 | -71.2 |
| | | | | | | | | |
| 1200 | 0.623 | -166.3 | 5.618 | 77.1 | 0.056 | 50.5 | 0.427 | -75.0 |
| 1200 1400 | 0.621 | -173.1 | 4.797 | 72.1 | 0.060 | 52.6 | 0.411 | -78.5 |
| 1200 1400 1600 | 0.621 0.620 | -173.1 -179.0 | 4.797 4.199 | 72.1 67.5 | 0.060 0.065 | 52.6 55.0 | 0.411 0.399 | -78.5 -81.8 |
| 1200 1400 1600 1800 | 0.621 0.620 0.622 | -173.1 -179.0 176.1 | 4.797 4.199 3.717 | 72.1 67.5 63.4 | 0.060 0.065 0.071 | 52.6 55.0 56.9 | 0.411 0.399 0.398 | -78.5 -81.8 -85.2 |
| 1200 1400 1600 1800 2000 | 0.621 0.620 0.622 0.623 | -173.1 -179.0 176.1 171.8 | 4.797 4.199 3.717 3.348 | 72.1 67.5 63.4 59.4 | 0.060 0.065 0.071 0.076 | 52.6 55.0 56.9 58.6 | 0.411 0.399 | -78.5 -81.8 -85.2 -88.5 |
| 1200 1400 1600 1800 2000 2200 | 0.621 0.620 0.622 0.623 0.623 | -173.1 -179.0 176.1 171.8 167.4 | 4.797 4.199 3.717 | 72.1 67.5 63.4 59.4 55.5 | 0.060 0.065 0.071 0.076 0.082 | 52.6 55.0 56.9 58.6 60.1 | 0.411 0.399 0.398 0.397 0.401 | -78.5 -81.8 -85.2 -88.5 -91.7 |
| 1200 1400 1600 1800 2000 2200 2400 | 0.621 0.620 0.622 0.623 0.623 0.623 | -173.1 -179.0 176.1 171.8 167.4 163.5 | 4.797 4.199 3.717 3.348 | 72.1 67.5 63.4 59.4 55.5 51.8 | 0.060 0.065 0.071 0.076 | 52.6 55.0 56.9 58.6 60.1 61.4 | 0.411 0.399 0.398 0.397 | -78.5 -81.8 -85.2 -88.5 -91.7 -95.0 |
| 1200 1400 1600 1800 2000 2200 | 0.621 0.620 0.622 0.623 0.623 0.625 0.625 | -173.1 -179.0 176.1 171.8 167.4 | 4.797 4.199 3.717 3.348 3.039 | 72.1 67.5 63.4 59.4 55.5 51.8 48.2 | 0.060 0.065 0.071 0.076 0.082 | 52.6 55.0 56.9 58.6 60.1 61.4 62.2 | 0.411 0.399 0.398 0.397 0.401 | -78.5 -81.8 -85.2 -88.5 |
| 1200 1400 1600 1800 2000 2200 2400 | 0.621 0.620 0.622 0.623 0.623 0.623 | -173.1 -179.0 176.1 171.8 167.4 163.5 | 4.797 4.199 3.717 3.348 3.039 2.786 | 72.1 67.5 63.4 59.4 55.5 51.8 | 0.060 0.065 0.071 0.076 0.082 0.089 | 52.6 55.0 56.9 58.6 60.1 61.4 | 0.411 0.399 0.398 0.397 0.401 0.407 | -78.5 -81.8 -85.2 -88.5 -91.7 -95.0 |

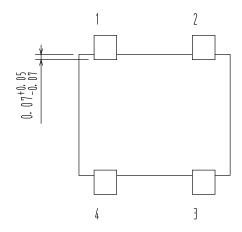
| Freq(MHz) | 0mA S11 | ∠\$11 | S21 | ∠S21 | S12 | ∠ S12 | S22 | ∠S22 |
|---|---|---|--|---|---|--|---|--|
| 100 | 0.556 | -65.2 | 43.179 | 145.8 | 0.011 | 67.8 | 0.846 | -28.0 |
| 200 | 0.578 | -106.8 | 32.894 | 143.0 | 0.011 | 57.9 | 0.669 | -44.6 |
| 300 | 0.578 | -129.7 | 24.775 | 129.0 | 0.017 | 56.2 | 0.584 | -54.7 |
| 400 | 0.604 | -142.8 | 19.256 | 100.3 | 0.021 | 57.0 | 0.501 | -61.6 |
| 500 | 0.614 | -148.7 | 15.997 | 94.4 | 0.021 | 59.0 | 0.488 | -63.9 |
| 600 | 0.606 | -155.8 | 13.266 | 89.8 | 0.031 | 60.8 | 0.443 | -66.9 |
| 700 | 0.603 | -161.6 | 11.285 | 86.1 | 0.034 | 62.5 | 0.409 | -69.3 |
| 800 | 0.602 | -166.5 | 9.802 | 82.9 | 0.037 | 64.2 | 0.382 | -72.0 |
| 900 | 0.602 | -170.7 | 8.672 | 80.0 | 0.041 | 65.4 | 0.366 | -74.3 |
| 1000 | 0.600 | -174.1 | 7.739 | 77.6 | 0.044 | 66.3 | 0.352 | -76.7 |
| 1200 | 0.603 | 179.9 | 6.401 | 73.3 | 0.051 | 68.1 | 0.333 | -80.3 |
| 1400 | 0.605 | 174.9 | 5.453 | 69.2 | 0.059 | 69.2 | 0.325 | -83.7 |
| 1600 | 0.607 | 170.4 | 4.753 | 65.4 | 0.066 | 69.8 | 0.321 | -87.0 |
| 1800 | 0.611 | 166.4 | 4.215 | 61.8 | 0.074 | 70.0 | 0.321 | -90.2 |
| 2000 | 0.613 | 162.9 | 3.791 | 58.4 | 0.082 | 69.9 | 0.325 | -93.4 |
| 2200 | 0.614 | 159.2 | 3.445 | 55.1 | 0.090 | 70.1 | 0.330 | -96.5 |
| 2400 | 0.616 | 155.8 | 3.155 | 51.7 | 0.099 | 69.6 | 0.339 | -99.4 |
| 2600 | 0.617 | 152.4 | 2.916 | 48.4 | 0.107 | 69.1 | 0.349 | -102.4 |
| 2800 | 0.619 | 149.1 | 2.711 | 45.2 | 0.115 | 68.5 | 0.361 | -105.3 |
| | | | | | | | | |
| 3000 CE=8V, IC=5 | 0.619 OmA | 145.7 | 2.531 | 42.0 | 0.124 | 67.5 | 0.375 | 1 |
| 3000 CE=8V, IC=5 Freq(MHz) | 0.619 0mA S11 | 145.7 ∠S11 | 2.531 S21 | 42.0 ∠ S21 | S12 | ∠ S12 | \$22 | ∠ S22 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 | 0.619 0mA S11 0.477 | 145.7 ∠S11 -88.8 | 2.531 S21 42.926 | 42.0 ∠ S21 139.6 | S12 0.009 | ∠ S12 65.5 | S22 0.793 | ∠ S22 -30.4 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 | 0.619 0mA S11 0.477 0.554 | 145.7 ∠S11 -88.8 -127.0 | 2.531 S21 42.926 34.154 | 42.0 ∠ S21 139.6 117.2 | S12 0.009 0.014 | ∠ S12 65.5 59.2 | S22 0.793 0.603 | ∠S22 -30.4 -45.1 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 | 0.619 0mA S11 0.477 0.554 0.589 | 145.7 ∠S11 -88.8 -127.0 -144.5 | 2.531 S21 42.926 34.154 24.758 | 42.0 ∠ S21 139.6 117.2 104.4 | S12 0.009 0.014 0.017 | ∠ S12 65.5 59.2 59.1 | S22 0.793 0.603 0.529 | ∠ S22 -30.4 -45.1 -53.1 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 | 0.619 0mA S11 0.477 0.554 0.589 0.606 | 145.7 ∠S11 -88.8 -127.0 -144.5 -154.4 | 2.531 S21 42.926 34.154 24.758 18.954 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 | S12 0.009 0.014 0.017 0.020 | ∠ S12 65.5 59.2 59.1 61.9 | S22 0.793 0.603 0.529 0.478 | ∠ S22 -30.4 -45.1 -53.1 -58.7 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 | ∠S11 -88.8 -127.0 -144.5 -154.4 -158.4 | 2.531 S21 42.926 34.154 24.758 18.954 15.585 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 | S12 0.009 0.014 0.017 0.020 0.024 | ∠ S12 65.5 59.2 59.1 61.9 64.8 | \$22 0.793 0.603 0.529 0.478 0.453 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 | 145.7 ∠S11 -88.8 -127.0 -144.5 -154.4 -158.4 -164.1 | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 | S12 0.009 0.014 0.017 0.020 0.024 0.027 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 | S22 0.793 0.603 0.529 0.478 0.453 0.416 | -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 | 145.7 ∠S11 -88.8 -127.0 -144.5 -154.4 -158.4 -164.1 -168.8 | 2.531 [S21] 42.926 34.154 24.758 18.954 15.585 12.888 10.954 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 | 145.7 ∠S11 -88.8 -127.0 -144.5 -154.4 -158.4 -164.1 -168.8 -172.8 | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -64.8 -67.2 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 | $\begin{array}{c} 145.7\\ \swarrow S11\\ -88.8\\ -127.0\\ -144.5\\ -154.4\\ -158.4\\ -164.1\\ -168.8\\ -172.8\\ -172.8\\ -176.3\end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 | S12 0.009 0.014 0.020 0.024 0.027 0.031 0.034 0.038 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 | \$22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -64.8 -67.2 -69.5 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 0.615 | $\begin{array}{c} 145.7\\ \swarrow S11\\ -88.8\\ -127.0\\ -144.5\\ -154.4\\ -158.4\\ -164.1\\ -168.8\\ -172.8\\ -172.8\\ -176.3\\ -179.2\\ \end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 75.7 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 0.615 0.619 | $\begin{array}{c} 145.7\\ \swarrow S11\\ -88.8\\ -127.0\\ -144.5\\ -154.4\\ -158.4\\ -164.1\\ -168.8\\ -172.8\\ -176.3\\ -179.2\\ 175.7\end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 75.7 71.6 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 | S22 0.793 0.603 0.529 0.478 0.453 0.453 0.416 0.388 0.366 0.355 0.343 0.329 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.611 0.613 0.616 0.615 0.619 0.623 | $\begin{array}{c} 145.7\\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$ | 2.531 [S21] 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 75.7 71.6 67.7 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 | ∠ S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 | \$22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1600 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.611 0.613 0.616 0.615 0.619 0.623 0.626 | $\begin{array}{c} \angle \$11\\ -\$8.8\\ -127.0\\ -144.5\\ -154.4\\ -158.4\\ -164.1\\ -168.8\\ -172.8\\ -176.3\\ -179.2\\ 175.7\\ 171.2\\ 167.2 \end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 | $\begin{array}{c} 42.0\\ \hline \\ & \swarrow S21\\ \hline \\ 139.6\\ \hline \\ 117.2\\ \hline \\ 104.4\\ 96.6\\ \hline \\ 91.2\\ \hline \\ 87.0\\ \hline \\ 83.7\\ \hline \\ 80.7\\ \hline \\ 78.1\\ \hline \\ 75.7\\ \hline \\ 71.6\\ \hline \\ 67.7\\ \hline \\ 64.0\\ \hline \end{array}$ | S12 0.009 0.014 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1600 1800 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.613 0.611 0.613 0.616 0.615 0.619 0.623 0.626 0.631 | $\begin{array}{c} \angle S11 \\ -88.8 \\ -127.0 \\ -144.5 \\ -154.4 \\ -158.4 \\ -164.1 \\ -168.8 \\ -172.8 \\ -172.8 \\ -176.3 \\ -179.2 \\ 175.7 \\ 171.2 \\ 167.2 \\ 163.5 \end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 4.071 | $\begin{array}{c} 42.0\\ \hline \\ & \swarrow S21\\ 139.6\\ 117.2\\ 104.4\\ 96.6\\ 91.2\\ 87.0\\ 83.7\\ 80.7\\ 78.1\\ 75.7\\ 71.6\\ 67.7\\ 64.0\\ 60.4\\ \end{array}$ | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 0.073 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 74.4 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 0.325 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 -85.8 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.613 0.616 0.615 0.619 0.623 0.626 0.631 0.633 | $\begin{array}{c} 145.7 \\ \swarrow S11 \\ -88.8 \\ -127.0 \\ -144.5 \\ -154.4 \\ -158.4 \\ -164.1 \\ -168.8 \\ -172.8 \\ -176.3 \\ -179.2 \\ 175.7 \\ 171.2 \\ 167.2 \\ 163.5 \\ 160.2 \\ \end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 4.071 3.658 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 75.7 71.6 67.7 64.0 60.4 57.0 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 0.073 0.081 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 74.4 74.0 | \$22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 0.325 0.331 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 -85.8 -89.4 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1200 1400 1600 1800 2000 2200 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 0.615 0.619 0.623 0.626 0.631 0.633 0.634 | $\begin{array}{c} \angle S11 \\ -88.8 \\ -127.0 \\ -144.5 \\ -154.4 \\ -158.4 \\ -164.1 \\ -168.8 \\ -172.8 \\ -176.3 \\ -179.2 \\ 175.7 \\ 171.2 \\ 167.2 \\ 163.5 \\ 160.2 \\ 156.7 \end{array}$ | 2.531 [S21] 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 4.071 3.658 3.322 | $\begin{array}{r} 42.0\\ \swarrow S21\\ 139.6\\ 117.2\\ 104.4\\ 96.6\\ 91.2\\ 87.0\\ 83.7\\ 80.7\\ 78.1\\ 75.7\\ 71.6\\ 67.7\\ 64.0\\ 60.4\\ 57.0\\ 53.7\\ \end{array}$ | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 0.073 0.081 0.090 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 74.4 74.0 73.7 | \$22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 0.325 0.331 0.337 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 -85.8 -89.4 -92.7 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1600 1800 2000 2200 2400 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 0.615 0.619 0.623 0.623 0.626 0.631 0.633 0.634 0.637 | $\begin{array}{c} \angle $11\\ -88.8\\ -127.0\\ -144.5\\ -154.4\\ -158.4\\ -164.1\\ -168.8\\ -172.8\\ -176.3\\ -179.2\\ 175.7\\ 171.2\\ 167.2\\ 167.2\\ 163.5\\ 160.2\\ 156.7\\ 153.5\\ \end{array}$ | 2.531 S21 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 4.071 3.658 3.322 3.041 | $\begin{array}{c} 42.0\\ \hline \\ & \swarrow S21\\ \hline \\ 139.6\\ \hline \\ 117.2\\ \hline \\ 104.4\\ 96.6\\ \hline \\ 91.2\\ \hline \\ 87.0\\ \hline \\ 83.7\\ \hline \\ 80.7\\ \hline \\ 78.1\\ \hline \\ 75.7\\ \hline \\ 71.6\\ \hline \\ 67.7\\ \hline \\ 71.6\\ \hline \\ 67.7\\ \hline \\ 64.0\\ \hline \\ 60.4\\ \hline \\ 57.0\\ \hline \\ 53.7\\ \hline \\ 50.3\\ \hline \end{array}$ | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 0.073 0.081 0.090 0.099 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 74.4 74.0 73.7 73.0 | S22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 0.325 0.331 0.337 0.347 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 -85.8 -89.4 -92.7 -95.9 |
| 3000 CE=8V, IC=5 Freq(MHz) 100 200 300 400 500 600 700 800 900 1000 1200 1400 1200 1400 1600 1800 2000 2200 | 0.619 0mA S11 0.477 0.554 0.589 0.606 0.613 0.611 0.611 0.613 0.616 0.615 0.619 0.623 0.626 0.631 0.633 0.634 | $\begin{array}{c} \angle S11 \\ -88.8 \\ -127.0 \\ -144.5 \\ -154.4 \\ -158.4 \\ -164.1 \\ -168.8 \\ -172.8 \\ -176.3 \\ -179.2 \\ 175.7 \\ 171.2 \\ 167.2 \\ 163.5 \\ 160.2 \\ 156.7 \end{array}$ | 2.531 [S21] 42.926 34.154 24.758 18.954 15.585 12.888 10.954 9.503 8.407 7.494 6.192 5.272 4.586 4.071 3.658 3.322 | 42.0 ∠ S21 139.6 117.2 104.4 96.6 91.2 87.0 83.7 80.7 78.1 75.7 71.6 67.7 64.0 60.4 57.0 53.7 | S12 0.009 0.014 0.017 0.020 0.024 0.027 0.031 0.034 0.038 0.042 0.049 0.057 0.065 0.073 0.081 0.090 | \angle S12 65.5 59.2 59.1 61.9 64.8 67.3 69.1 70.4 71.5 72.3 73.7 74.1 74.5 74.4 74.0 73.7 | \$22 0.793 0.603 0.529 0.478 0.453 0.416 0.388 0.366 0.355 0.343 0.329 0.324 0.323 0.325 0.331 0.337 | ∠ S22 -30.4 -45.1 -53.1 -58.7 -60.2 -62.6 -64.8 -67.2 -69.5 -71.9 -75.5 -79.0 -82.4 -85.8 -89.4 |

PACKAGE DIMENSIONS

SC-82FL / MCPH4 CASE 419AR ISSUE O







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