

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

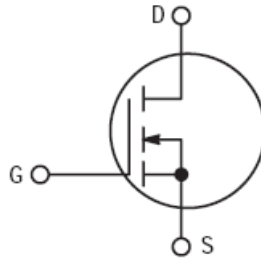
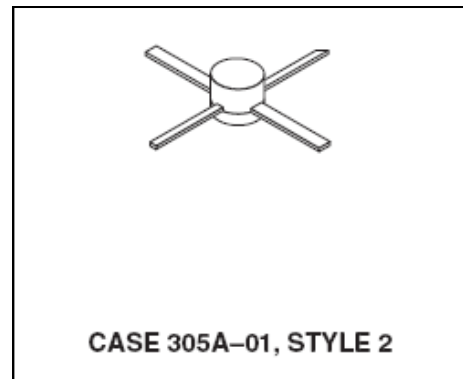
Rev. V1

Designed for wideband large signal amplifier and oscillator applications to 500MHz

N-Channel enhancement mode

- Guaranteed 28 volt, 500 MHz performance  
Output power = 2.0 watts  
Minimum gain = 16 dB (Min.)  
Efficiency = 55% (Typ.)
- Facilitates manual gain control, ALC and modulation techniques
- 100% tested for load mismatch at all phase angles with 30:1 VSWR
- Excellent thermal stability ideally suited for Class A operation

### Product Image



### MAXIMUM RATINGS

| Rating   | Symbol    | Value       | Unit                                |
|--|-----------|-------------|-------------------------------------|
| Drain-Source Voltage   | $V_{DSS}$ | 65          | Vdc                                 |
| Drain-Gate Voltage ( $R_{GS} = 1.0 \text{ M}\Omega$ )                                  | $V_{DGR}$ | 65          | Vdc                                 |
| Gate-Source Voltage  | $V_{GS}$  | $\pm 20$    | Vdc                                 |
| Drain Current — Continuous   | $I_D$     | 0.5         | Adc                                 |
| Total Device Dissipation @ $T_C = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$     | 8.0<br>45   | Watts<br>$\text{mW}/^\circ\text{C}$ |
| Storage Temperature Range  | $T_{stg}$ | -65 to +150 | $^\circ\text{C}$                    |
| Operating Junction Temperature   | $T_J$     | 200         | $^\circ\text{C}$                    |

### THERMAL CHARACTERISTICS

| Characteristic                       | Symbol          | Max  | Unit                      |
|--------------------------------------|-----------------|------|---------------------------|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 13.2 | $^\circ\text{C}/\text{W}$ |

NOTE — **CAUTION** — MOS devices are susceptible to damage from electrostatic charge. Reasonable precautions in handling and packaging MOS devices should be observed.

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted.)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

#### OFF CHARACTERISTICS

|   |                      |    |   |     |      |
|---|----------------------|----|---|-----|------|
| Drain–Source Breakdown Voltage (V <sub>GS</sub> = 0, I <sub>D</sub> = 1.0 mA) | V <sub>(BR)DSS</sub> | 65 | — | —   | Vdc  |
| Zero Gate Voltage Drain Current (V <sub>DS</sub> = 28 V, V <sub>GS</sub> = 0) | I <sub>DSS</sub>     | —  | — | 0.5 | mAdc |
| Gate–Source Leakage Current (V <sub>GS</sub> = 20 V, V <sub>DS</sub> = 0)     | I <sub>GSS</sub>     | —  | — | 1.0 | μAdc |

#### ON CHARACTERISTICS

|  |                     |     |     |     |       |
|--|---------------------|-----|-----|-----|-------|
| Gate Threshold Voltage (I <sub>D</sub> = 10 mA, V <sub>DS</sub> = 10 V)    | V <sub>GS(th)</sub> | 2.0 | 4.0 | 5.0 | Vdc   |
| Forward Transconductance (V <sub>DS</sub> = 10 V, I <sub>D</sub> = 100 mA) | g <sub>fs</sub>     | 80  | 110 | —   | mmhos |

#### DYNAMIC CHARACTERISTICS

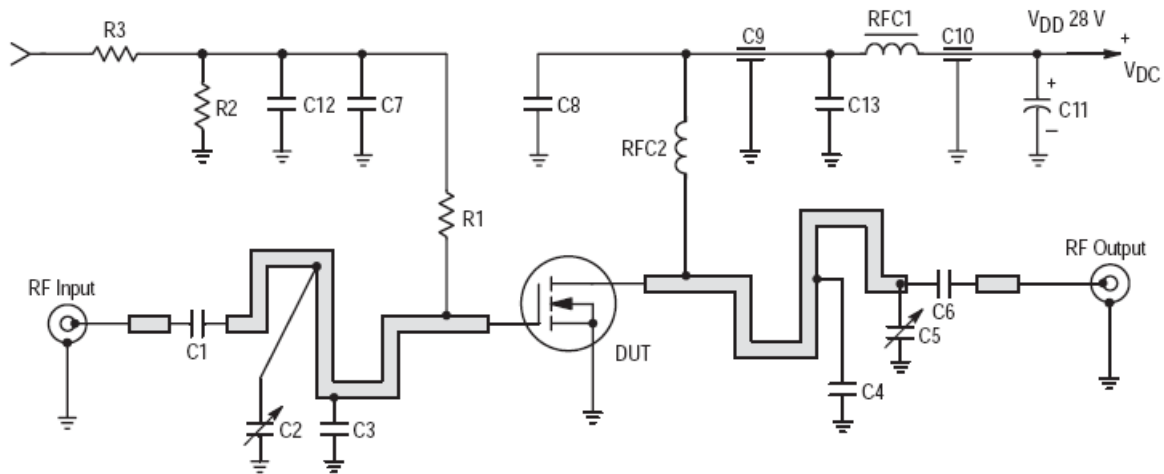
|   |                  |   |      |   |    |
|---|------------------|---|------|---|----|
| Input Capacitance (V <sub>DS</sub> = 28 V, V <sub>GS</sub> = 0, f = 1.0 MHz)            | C <sub>iss</sub> | — | 3.0  | — | pF |
| Output Capacitance (V <sub>DS</sub> = 28 V, V <sub>GS</sub> = 0, f = 1.0 MHz)           | C <sub>OSS</sub> | — | 4.0  | — | pF |
| Reverse Transfer Capacitance (V <sub>DS</sub> = 28 V, V <sub>GS</sub> = 0, f = 1.0 MHz) | C <sub>rSS</sub> | — | 0.45 | — | pF |

#### FUNCTIONAL CHARACTERISTICS (Figure 1)

|  |                  |                                |             |   |      |
|--|------------------|--------------------------------|-------------|---|------|
| Common Source Power Gain<br>(V <sub>DD</sub> = 28 Vdc, P <sub>out</sub> = 2.0 W, f = 500 MHz, I <sub>DQ</sub> = 25 mA)   | G <sub>ps</sub>  | 16                             | 18          | — | dB   |
| Drain Efficiency (Figure 1)<br>(V <sub>DD</sub> = 28 Vdc, P <sub>out</sub> = 2.0 W, f = 500 MHz, I <sub>DQ</sub> = 25 mA)  | η                | 50                             | 55          | — | %    |
| Electrical Ruggedness (Figure 1)<br>(V <sub>DD</sub> = 28 Vdc, P <sub>out</sub> = 2.0 W, f = 500 MHz, I <sub>DQ</sub> = 25 mA,<br>VSWR 30:1 at all Phase Angles) | ψ                | No Degradation in Output Power |             |   |      |
| Series Equivalent Input Impedance<br>(V <sub>DD</sub> = 28 V, P <sub>out</sub> = 2.0 W, f = 500 MHz, I <sub>DQ</sub> = 25 mA)                                    | Z <sub>in</sub>  | —                              | 5.9 – j19.4 | — | Ohms |
| Series Equivalent Output Impedance<br>(V <sub>DD</sub> = 28 V, P <sub>out</sub> = 2.0 W, f = 500 MHz, I <sub>DQ</sub> = 25 mA)                                   | Z <sub>out</sub> | —                              | 14.5 – j29  | — | Ohms |

## The Broadband RF TMOS<sup>®</sup> Line 2W, 500MHz, 28V

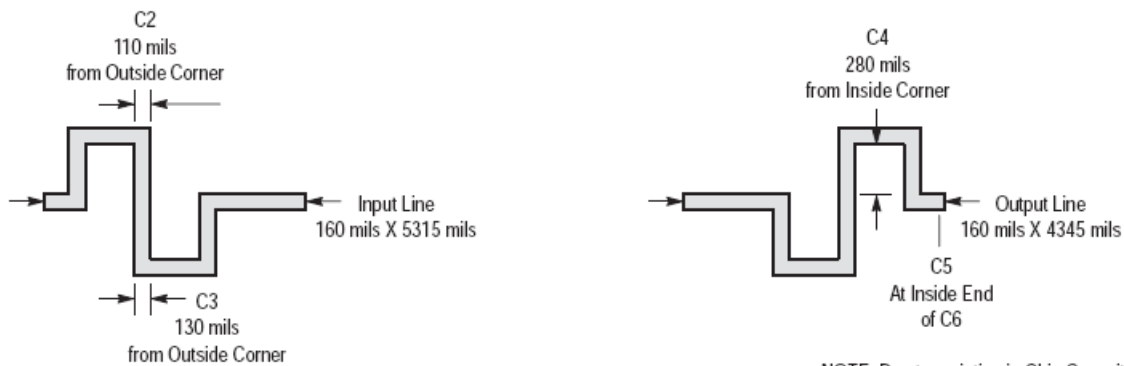
Rev. V1



|             |   |
|-------------|---|
| C1, C6, C12 | 270 pF, Chip Capacitors                 |
| C2, C5      | 1 – 10 pF, Johanson Trimmer Capacitors  |
| C3          | 30 pF, 100 mil ATC Chip Capacitor       |
| C4          | 3.9 pF, 100 mil ATC Chip Capacitor      |
| C7, C8      | 0.1 $\mu$ F, Blue Capacitors            |
| C9, C10     | 680 pF, Feed Through Capacitors         |
| C11         | 50 $\mu$ F, 50 V Electrolytic Capacitor |
| C13         | 240 pF, 100 mil ATC Chip Capacitor      |

|      |   |
|------|---|
| R1   | 150 $\Omega$ , 1/2 Watt                 |
| R2   | 10 k $\Omega$ , 1/2 Watt                |
| R3   | 1 k $\Omega$ , 1/2 Watt                 |
| RFC1 | Ferroxcube VK200–19/4B                  |
| RFC2 | 8 Turns, #20 AWG, Enameled, ID 110 mils |

Board Material — 0.062", Teflon<sup>®</sup> Fiberglass, 1 oz.,  
Copper clad both sides,  $\epsilon_r = 2.55$



NOTE: Due to variation in Chip Capacitor values and board material, these are approximate positions.

Figure 1. MRF158 500 MHz Test Circuit

# MRF158



The Broadband RF TMOS® Line  
2W, 500MHz, 28V

Rev. V1

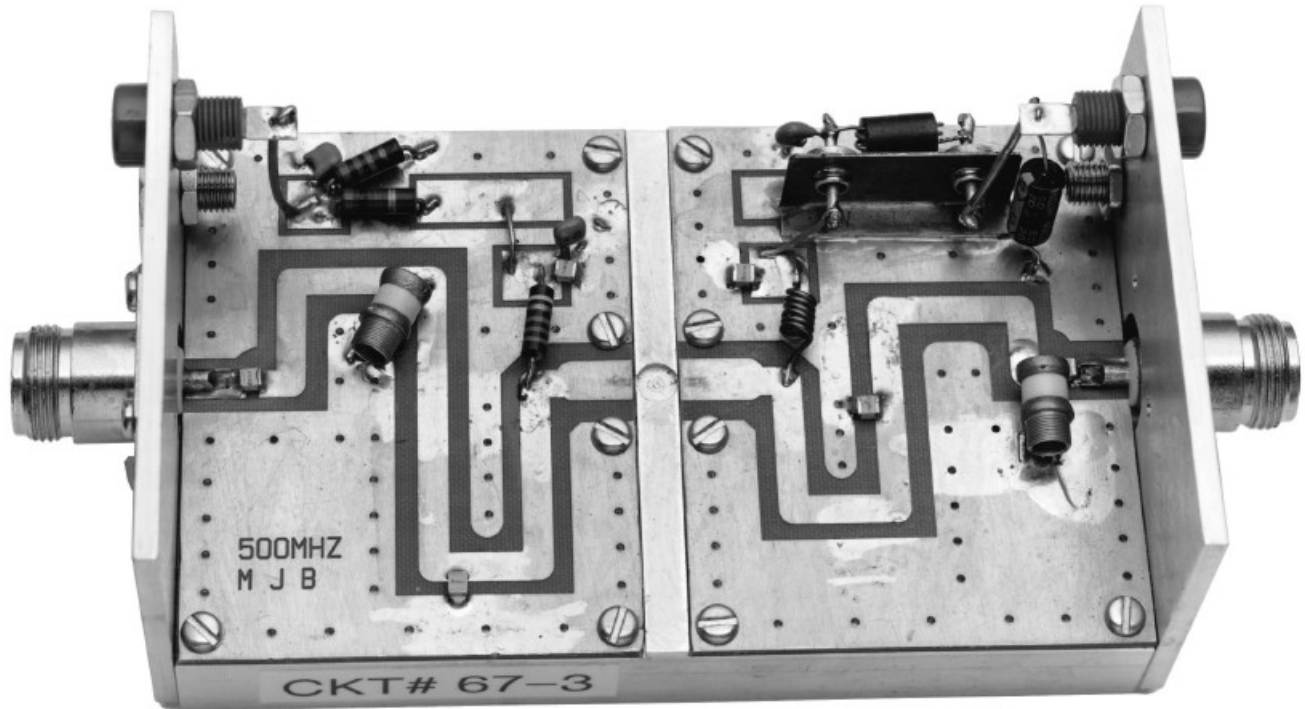


Figure 2. MRF158 Broadband Test Fixture

## TYPICAL CHARACTERISTICS

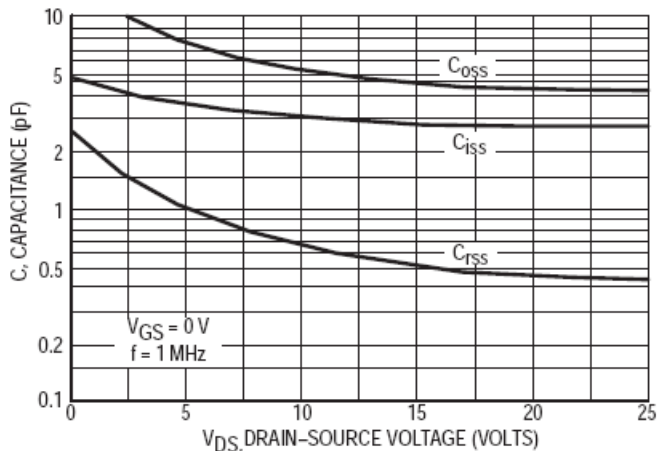


Figure 3. Capacitance versus Drain-Source Voltage

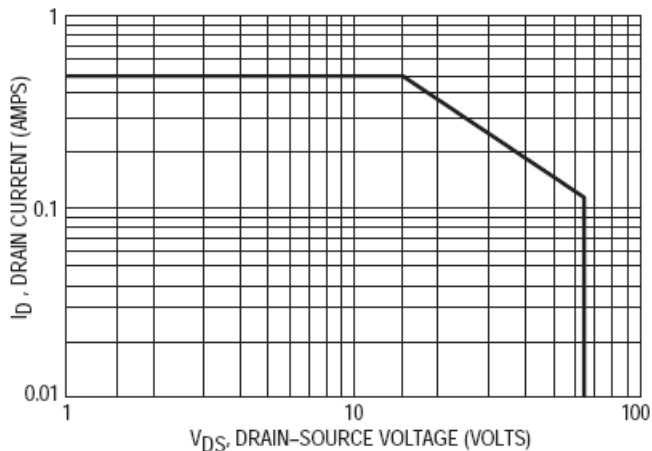


Figure 4. DC Safe Operating Area

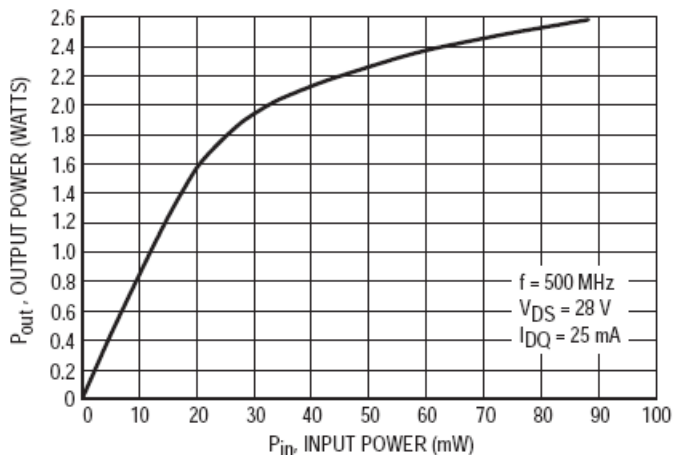


Figure 5. Output Power versus Input Power

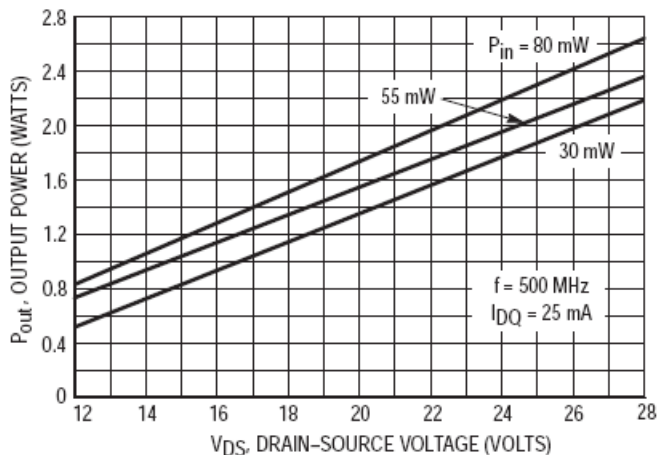


Figure 6. Output Power versus Voltage

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ )

| f<br>MHz | S <sub>11</sub> |     | S <sub>21</sub> |     | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|-----|-----------------|-----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠   | S <sub>21</sub> | ∠   | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 5        | 1.000           | -2  | 9.45            | 179 | 0.000           | 89 | 0.965           | -1  |
| 10       | 0.997           | -4  | 9.45            | 177 | 0.005           | 92 | 0.969           | -3  |
| 15       | 0.999           | -5  | 9.50            | 176 | 0.007           | 86 | 0.962           | -5  |
| 20       | 0.997           | -7  | 9.45            | 174 | 0.009           | 91 | 0.958           | -6  |
| 25       | 0.997           | -9  | 9.44            | 173 | 0.012           | 88 | 0.958           | -7  |
| 30       | 0.996           | -10 | 9.40            | 172 | 0.014           | 82 | 0.960           | -8  |
| 35       | 0.994           | -12 | 9.38            | 170 | 0.016           | 78 | 0.956           | -10 |
| 40       | 0.993           | -14 | 9.35            | 169 | 0.016           | 77 | 0.958           | -11 |
| 45       | 0.990           | -15 | 9.34            | 167 | 0.020           | 79 | 0.957           | -12 |
| 50       | 0.988           | -17 | 9.29            | 166 | 0.021           | 76 | 0.957           | -14 |
| 55       | 0.985           | -19 | 9.25            | 165 | 0.023           | 77 | 0.955           | -15 |
| 60       | 0.983           | -21 | 9.26            | 163 | 0.026           | 75 | 0.952           | -17 |
| 65       | 0.980           | -22 | 9.19            | 162 | 0.028           | 74 | 0.947           | -18 |
| 70       | 0.977           | -24 | 9.15            | 160 | 0.029           | 74 | 0.943           | -20 |
| 75       | 0.973           | -25 | 9.11            | 159 | 0.031           | 74 | 0.942           | -21 |
| 80       | 0.970           | -27 | 9.04            | 158 | 0.034           | 70 | 0.935           | -22 |
| 85       | 0.967           | -29 | 8.98            | 157 | 0.035           | 71 | 0.932           | -24 |
| 90       | 0.963           | -30 | 8.91            | 155 | 0.037           | 67 | 0.929           | -25 |
| 95       | 0.961           | -32 | 8.90            | 154 | 0.039           | 68 | 0.924           | -26 |
| 100      | 0.957           | -33 | 8.81            | 153 | 0.040           | 67 | 0.917           | -27 |
| 105      | 0.953           | -35 | 8.77            | 151 | 0.041           | 64 | 0.916           | -28 |
| 109      | 0.950           | -36 | 8.69            | 150 | 0.042           | 65 | 0.914           | -30 |
| 114      | 0.943           | -38 | 8.62            | 149 | 0.045           | 63 | 0.906           | -31 |
| 119      | 0.940           | -40 | 8.56            | 148 | 0.045           | 62 | 0.907           | -32 |
| 124      | 0.933           | -41 | 8.49            | 146 | 0.049           | 61 | 0.901           | -33 |
| 129      | 0.933           | -43 | 8.46            | 145 | 0.049           | 60 | 0.901           | -35 |
| 134      | 0.923           | -44 | 8.37            | 144 | 0.052           | 59 | 0.896           | -36 |
| 139      | 0.921           | -45 | 8.29            | 143 | 0.052           | 58 | 0.890           | -37 |
| 144      | 0.917           | -47 | 8.22            | 142 | 0.055           | 57 | 0.885           | -39 |
| 149      | 0.913           | -48 | 8.16            | 140 | 0.055           | 55 | 0.878           | -40 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ )

| f<br>MHz | S <sub>11</sub> |     | S <sub>21</sub> |     | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|-----|-----------------|-----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠   | S <sub>21</sub> | ∠   | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 154      | 0.911           | -50 | 8.11            | 140 | 0.057           | 53 | 0.874           | -41 |
| 159      | 0.905           | -51 | 8.02            | 138 | 0.059           | 54 | 0.868           | -42 |
| 164      | 0.902           | -52 | 7.94            | 137 | 0.059           | 53 | 0.863           | -43 |
| 169      | 0.896           | -54 | 7.87            | 136 | 0.062           | 52 | 0.856           | -44 |
| 174      | 0.893           | -55 | 7.79            | 135 | 0.063           | 50 | 0.851           | -45 |
| 179      | 0.890           | -56 | 7.71            | 134 | 0.062           | 50 | 0.846           | -46 |
| 184      | 0.882           | -58 | 7.64            | 133 | 0.065           | 48 | 0.845           | -47 |
| 189      | 0.881           | -59 | 7.59            | 132 | 0.065           | 47 | 0.840           | -48 |
| 194      | 0.874           | -60 | 7.53            | 131 | 0.066           | 47 | 0.834           | -49 |
| 199      | 0.868           | -61 | 7.43            | 130 | 0.067           | 47 | 0.828           | -50 |
| 204      | 0.864           | -62 | 7.36            | 129 | 0.068           | 46 | 0.829           | -51 |
| 209      | 0.861           | -63 | 7.31            | 128 | 0.070           | 45 | 0.824           | -52 |
| 214      | 0.856           | -65 | 7.24            | 127 | 0.070           | 44 | 0.820           | -53 |
| 219      | 0.853           | -66 | 7.17            | 126 | 0.070           | 43 | 0.813           | -54 |
| 224      | 0.848           | -67 | 7.10            | 125 | 0.072           | 41 | 0.806           | -55 |
| 229      | 0.847           | -68 | 7.02            | 124 | 0.074           | 41 | 0.803           | -56 |
| 234      | 0.841           | -69 | 6.94            | 124 | 0.075           | 40 | 0.800           | -57 |
| 239      | 0.839           | -70 | 6.92            | 122 | 0.074           | 39 | 0.789           | -58 |
| 244      | 0.832           | -71 | 6.80            | 122 | 0.076           | 40 | 0.783           | -59 |
| 249      | 0.828           | -72 | 6.73            | 121 | 0.077           | 38 | 0.780           | -60 |
| 254      | 0.825           | -73 | 6.68            | 120 | 0.077           | 39 | 0.778           | -60 |
| 259      | 0.820           | -74 | 6.60            | 119 | 0.078           | 36 | 0.772           | -61 |
| 264      | 0.816           | -75 | 6.54            | 118 | 0.078           | 35 | 0.769           | -62 |
| 269      | 0.813           | -76 | 6.48            | 117 | 0.078           | 36 | 0.765           | -63 |
| 274      | 0.810           | -77 | 6.42            | 117 | 0.079           | 34 | 0.765           | -64 |
| 279      | 0.806           | -78 | 6.34            | 116 | 0.080           | 35 | 0.762           | -64 |
| 284      | 0.799           | -79 | 6.29            | 115 | 0.080           | 34 | 0.757           | -65 |
| 289      | 0.800           | -80 | 6.23            | 114 | 0.081           | 31 | 0.756           | -66 |
| 294      | 0.795           | -81 | 6.18            | 113 | 0.081           | 33 | 0.753           | -67 |
| 299      | 0.789           | -82 | 6.12            | 113 | 0.084           | 31 | 0.750           | -67 |
| 304      | 0.791           | -83 | 6.07            | 112 | 0.082           | 31 | 0.742           | -68 |
| 308      | 0.790           | -84 | 5.99            | 111 | 0.084           | 30 | 0.742           | -69 |
| 313      | 0.787           | -85 | 5.95            | 110 | 0.084           | 29 | 0.737           | -70 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |     | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|------|-----------------|-----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠   | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 318      | 0.784           | -85  | 5.88            | 109 | 0.083           | 30 | 0.729           | -70 |
| 323      | 0.779           | -86  | 5.80            | 109 | 0.084           | 28 | 0.726           | -71 |
| 328      | 0.778           | -87  | 5.77            | 108 | 0.085           | 27 | 0.723           | -72 |
| 333      | 0.773           | -88  | 5.69            | 107 | 0.085           | 28 | 0.720           | -72 |
| 338      | 0.771           | -89  | 5.64            | 107 | 0.084           | 26 | 0.716           | -73 |
| 343      | 0.766           | -89  | 5.60            | 106 | 0.086           | 25 | 0.716           | -74 |
| 348      | 0.766           | -90  | 5.55            | 106 | 0.086           | 25 | 0.712           | -74 |
| 353      | 0.763           | -91  | 5.50            | 105 | 0.086           | 24 | 0.708           | -75 |
| 358      | 0.761           | -92  | 5.43            | 104 | 0.086           | 24 | 0.708           | -75 |
| 363      | 0.761           | -93  | 5.41            | 104 | 0.086           | 24 | 0.706           | -76 |
| 368      | 0.755           | -94  | 5.35            | 103 | 0.086           | 23 | 0.702           | -77 |
| 373      | 0.753           | -94  | 5.29            | 102 | 0.087           | 23 | 0.704           | -77 |
| 378      | 0.752           | -95  | 5.25            | 101 | 0.086           | 23 | 0.700           | -78 |
| 383      | 0.750           | -96  | 5.20            | 101 | 0.087           | 22 | 0.697           | -79 |
| 388      | 0.747           | -96  | 5.15            | 100 | 0.089           | 21 | 0.692           | -79 |
| 393      | 0.742           | -97  | 5.08            | 100 | 0.087           | 21 | 0.693           | -80 |
| 398      | 0.741           | -98  | 5.04            | 99  | 0.088           | 20 | 0.689           | -81 |
| 403      | 0.743           | -98  | 5.01            | 98  | 0.088           | 20 | 0.684           | -81 |
| 408      | 0.740           | -99  | 4.97            | 98  | 0.088           | 19 | 0.682           | -81 |
| 413      | 0.734           | -100 | 4.90            | 97  | 0.089           | 19 | 0.682           | -82 |
| 418      | 0.738           | -100 | 4.87            | 97  | 0.088           | 18 | 0.677           | -83 |
| 423      | 0.733           | -101 | 4.82            | 96  | 0.089           | 18 | 0.676           | -83 |
| 428      | 0.735           | -102 | 4.80            | 96  | 0.089           | 17 | 0.674           | -84 |
| 433      | 0.731           | -102 | 4.74            | 95  | 0.088           | 16 | 0.672           | -84 |
| 438      | 0.732           | -103 | 4.70            | 94  | 0.088           | 17 | 0.673           | -85 |
| 443      | 0.728           | -104 | 4.67            | 94  | 0.089           | 16 | 0.670           | -85 |
| 448      | 0.729           | -105 | 4.64            | 93  | 0.090           | 16 | 0.671           | -86 |
| 453      | 0.727           | -105 | 4.59            | 93  | 0.088           | 16 | 0.668           | -86 |
| 458      | 0.723           | -105 | 4.56            | 92  | 0.089           | 15 | 0.668           | -87 |
| 463      | 0.721           | -106 | 4.50            | 91  | 0.088           | 15 | 0.668           | -87 |
| 468      | 0.720           | -107 | 4.46            | 91  | 0.088           | 15 | 0.665           | -87 |
| 473      | 0.719           | -107 | 4.42            | 90  | 0.089           | 13 | 0.662           | -88 |
| 478      | 0.717           | -107 | 4.38            | 90  | 0.089           | 13 | 0.662           | -89 |
| 483      | 0.717           | -108 | 4.35            | 89  | 0.088           | 13 | 0.658           | -89 |



## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |      |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|------|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠  | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠    |
| 488      | 0.715           | -109 | 4.32            | 89 | 0.088           | 13 | 0.660           | -89  |
| 493      | 0.714           | -109 | 4.28            | 88 | 0.090           | 13 | 0.655           | -90  |
| 498      | 0.714           | -110 | 4.25            | 88 | 0.090           | 12 | 0.655           | -91  |
| 503      | 0.713           | -110 | 4.22            | 87 | 0.089           | 12 | 0.652           | -91  |
| 507      | 0.712           | -111 | 4.17            | 87 | 0.090           | 11 | 0.650           | -91  |
| 512      | 0.711           | -111 | 4.15            | 86 | 0.089           | 11 | 0.649           | -92  |
| 517      | 0.706           | -112 | 4.11            | 86 | 0.090           | 11 | 0.650           | -92  |
| 522      | 0.705           | -112 | 4.07            | 85 | 0.089           | 10 | 0.650           | -93  |
| 527      | 0.706           | -113 | 4.07            | 85 | 0.089           | 10 | 0.648           | -93  |
| 532      | 0.705           | -113 | 4.02            | 84 | 0.088           | 10 | 0.649           | -93  |
| 537      | 0.704           | -114 | 4.00            | 84 | 0.088           | 9  | 0.645           | -94  |
| 542      | 0.704           | -114 | 3.95            | 83 | 0.089           | 9  | 0.646           | -94  |
| 547      | 0.704           | -115 | 3.93            | 82 | 0.087           | 10 | 0.646           | -95  |
| 552      | 0.704           | -116 | 3.90            | 82 | 0.090           | 8  | 0.645           | -95  |
| 557      | 0.702           | -116 | 3.87            | 82 | 0.089           | 8  | 0.646           | -96  |
| 562      | 0.699           | -117 | 3.83            | 81 | 0.088           | 8  | 0.646           | -96  |
| 567      | 0.699           | -117 | 3.80            | 81 | 0.089           | 8  | 0.641           | -96  |
| 572      | 0.700           | -117 | 3.76            | 80 | 0.088           | 7  | 0.640           | -97  |
| 577      | 0.699           | -118 | 3.74            | 80 | 0.087           | 7  | 0.640           | -97  |
| 582      | 0.698           | -118 | 3.70            | 80 | 0.088           | 7  | 0.641           | -98  |
| 587      | 0.699           | -118 | 3.69            | 79 | 0.087           | 7  | 0.637           | -98  |
| 592      | 0.697           | -119 | 3.67            | 79 | 0.088           | 6  | 0.638           | -98  |
| 597      | 0.698           | -119 | 3.64            | 78 | 0.088           | 6  | 0.633           | -99  |
| 602      | 0.698           | -119 | 3.62            | 78 | 0.087           | 6  | 0.638           | -99  |
| 607      | 0.695           | -120 | 3.58            | 77 | 0.087           | 6  | 0.637           | -99  |
| 612      | 0.696           | -120 | 3.57            | 77 | 0.087           | 6  | 0.637           | -100 |
| 617      | 0.694           | -121 | 3.54            | 76 | 0.086           | 5  | 0.636           | -100 |
| 622      | 0.695           | -121 | 3.52            | 76 | 0.087           | 5  | 0.635           | -100 |
| 627      | 0.692           | -121 | 3.48            | 75 | 0.088           | 5  | 0.637           | -101 |
| 632      | 0.691           | -122 | 3.46            | 75 | 0.085           | 4  | 0.634           | -101 |
| 637      | 0.691           | -122 | 3.44            | 74 | 0.087           | 4  | 0.641           | -102 |
| 642      | 0.689           | -123 | 3.41            | 74 | 0.087           | 3  | 0.637           | -102 |
| 647      | 0.687           | -123 | 3.38            | 74 | 0.087           | 3  | 0.634           | -103 |
| 652      | 0.689           | -124 | 3.36            | 73 | 0.085           | 3  | 0.636           | -103 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |      |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|------|
|          | S <sub>11</sub> | φ    | S <sub>21</sub> | φ  | S <sub>12</sub> | φ  | S <sub>22</sub> | φ    |
| 657      | 0.686           | -124 | 3.34            | 73 | 0.086           | 1  | 0.635           | -103 |
| 662      | 0.688           | -125 | 3.30            | 72 | 0.086           | 3  | 0.634           | -104 |
| 667      | 0.689           | -125 | 3.28            | 72 | 0.086           | 2  | 0.634           | -104 |
| 672      | 0.693           | -125 | 3.27            | 72 | 0.086           | 2  | 0.631           | -104 |
| 677      | 0.687           | -126 | 3.24            | 71 | 0.086           | 1  | 0.632           | -104 |
| 682      | 0.689           | -126 | 3.22            | 71 | 0.083           | 1  | 0.629           | -105 |
| 687      | 0.687           | -126 | 3.20            | 70 | 0.083           | 1  | 0.630           | -105 |
| 692      | 0.686           | -127 | 3.17            | 70 | 0.083           | 1  | 0.630           | -105 |
| 697      | 0.690           | -127 | 3.16            | 70 | 0.083           | 0  | 0.630           | -106 |
| 702      | 0.687           | -127 | 3.14            | 69 | 0.084           | 0  | 0.627           | -106 |
| 706      | 0.688           | -128 | 3.12            | 69 | 0.083           | 1  | 0.630           | -106 |
| 711      | 0.685           | -128 | 3.10            | 68 | 0.083           | 0  | 0.632           | -107 |
| 716      | 0.686           | -128 | 3.08            | 68 | 0.085           | 0  | 0.636           | -107 |
| 721      | 0.688           | -128 | 3.08            | 68 | 0.084           | -1 | 0.634           | -107 |
| 726      | 0.685           | -129 | 3.05            | 67 | 0.083           | 0  | 0.634           | -108 |
| 731      | 0.685           | -130 | 3.02            | 67 | 0.083           | -1 | 0.634           | -108 |
| 736      | 0.684           | -130 | 3.01            | 66 | 0.083           | -1 | 0.635           | -108 |
| 741      | 0.680           | -130 | 2.98            | 66 | 0.082           | -1 | 0.631           | -109 |
| 746      | 0.681           | -130 | 2.97            | 65 | 0.083           | -2 | 0.636           | -109 |
| 751      | 0.682           | -131 | 2.96            | 65 | 0.082           | -2 | 0.631           | -110 |
| 756      | 0.683           | -131 | 2.93            | 65 | 0.082           | -2 | 0.632           | -109 |
| 761      | 0.681           | -132 | 2.90            | 64 | 0.082           | -1 | 0.630           | -110 |
| 766      | 0.683           | -132 | 2.89            | 64 | 0.083           | -3 | 0.632           | -110 |
| 771      | 0.684           | -132 | 2.87            | 64 | 0.082           | -3 | 0.631           | -110 |
| 776      | 0.682           | -133 | 2.85            | 63 | 0.081           | -4 | 0.628           | -111 |
| 781      | 0.684           | -133 | 2.85            | 63 | 0.080           | -3 | 0.630           | -111 |
| 786      | 0.686           | -133 | 2.83            | 63 | 0.079           | -4 | 0.629           | -111 |
| 791      | 0.684           | -134 | 2.81            | 62 | 0.080           | -3 | 0.632           | -112 |
| 796      | 0.685           | -134 | 2.79            | 62 | 0.080           | -4 | 0.631           | -112 |
| 801      | 0.683           | -134 | 2.77            | 62 | 0.079           | -4 | 0.634           | -112 |
| 806      | 0.685           | -134 | 2.75            | 61 | 0.079           | -2 | 0.632           | -112 |
| 811      | 0.683           | -135 | 2.75            | 61 | 0.078           | -4 | 0.635           | -113 |
| 816      | 0.684           | -135 | 2.73            | 60 | 0.079           | -4 | 0.637           | -113 |
| 821      | 0.683           | -135 | 2.70            | 60 | 0.077           | -3 | 0.633           | -113 |
| 826      | 0.682           | -135 | 2.69            | 60 | 0.078           | -5 | 0.637           | -114 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 1. Common Source S-Parameters ( $V_{DS} = 13\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |      |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|------|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠  | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠    |
| 831      | 0.682           | -136 | 2.67            | 59 | 0.077           | -4 | 0.635           | -114 |
| 836      | 0.681           | -136 | 2.66            | 59 | 0.077           | -5 | 0.638           | -114 |
| 841      | 0.681           | -136 | 2.64            | 58 | 0.079           | -4 | 0.635           | -115 |
| 846      | 0.679           | -137 | 2.63            | 58 | 0.078           | -4 | 0.637           | -115 |
| 851      | 0.678           | -137 | 2.61            | 58 | 0.077           | -5 | 0.634           | -115 |
| 856      | 0.682           | -137 | 2.59            | 57 | 0.077           | -5 | 0.635           | -115 |
| 861      | 0.680           | -137 | 2.59            | 57 | 0.077           | -4 | 0.634           | -115 |
| 866      | 0.681           | -138 | 2.57            | 57 | 0.077           | -6 | 0.635           | -116 |
| 871      | 0.682           | -138 | 2.55            | 56 | 0.075           | -6 | 0.633           | -116 |
| 876      | 0.684           | -139 | 2.54            | 56 | 0.075           | -5 | 0.631           | -116 |
| 881      | 0.683           | -139 | 2.53            | 56 | 0.075           | -5 | 0.635           | -117 |
| 886      | 0.681           | -139 | 2.52            | 55 | 0.074           | -6 | 0.633           | -117 |
| 891      | 0.685           | -140 | 2.50            | 55 | 0.074           | -6 | 0.633           | -117 |
| 896      | 0.683           | -140 | 2.49            | 55 | 0.075           | -6 | 0.638           | -117 |
| 901      | 0.680           | -140 | 2.47            | 54 | 0.073           | -5 | 0.640           | -118 |
| 905      | 0.681           | -140 | 2.46            | 54 | 0.074           | -7 | 0.637           | -118 |
| 910      | 0.684           | -140 | 2.44            | 54 | 0.074           | -8 | 0.639           | -118 |
| 915      | 0.683           | -141 | 2.43            | 53 | 0.073           | -6 | 0.639           | -119 |
| 920      | 0.686           | -141 | 2.42            | 53 | 0.074           | -6 | 0.643           | -119 |
| 925      | 0.683           | -141 | 2.40            | 53 | 0.073           | -7 | 0.641           | -119 |
| 930      | 0.684           | -141 | 2.39            | 52 | 0.072           | -7 | 0.640           | -120 |
| 935      | 0.682           | -142 | 2.38            | 52 | 0.073           | -6 | 0.638           | -120 |
| 940      | 0.685           | -142 | 2.37            | 52 | 0.072           | -6 | 0.639           | -120 |
| 945      | 0.683           | -142 | 2.36            | 51 | 0.072           | -7 | 0.638           | -120 |
| 950      | 0.683           | -143 | 2.34            | 51 | 0.071           | -7 | 0.639           | -120 |
| 955      | 0.683           | -143 | 2.33            | 51 | 0.070           | -7 | 0.638           | -120 |
| 960      | 0.683           | -143 | 2.32            | 51 | 0.073           | -8 | 0.640           | -121 |
| 965      | 0.683           | -143 | 2.31            | 50 | 0.070           | -8 | 0.640           | -121 |
| 970      | 0.684           | -144 | 2.30            | 50 | 0.071           | -7 | 0.643           | -121 |
| 975      | 0.684           | -144 | 2.28            | 50 | 0.069           | -8 | 0.640           | -121 |
| 980      | 0.682           | -144 | 2.27            | 49 | 0.068           | -6 | 0.641           | -122 |
| 985      | 0.685           | -144 | 2.26            | 49 | 0.069           | -9 | 0.643           | -122 |
| 990      | 0.684           | -145 | 2.25            | 48 | 0.067           | -8 | 0.644           | -122 |
| 995      | 0.683           | -145 | 2.24            | 48 | 0.069           | -8 | 0.644           | -123 |
| 1000     | 0.684           | -145 | 2.23            | 48 | 0.068           | -8 | 0.643           | -123 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ )

| f<br>MHz | S11             |     | S21             |     | S12             |     | S22             |     |
|----------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|
|          | S <sub>11</sub> | φ   | S <sub>21</sub> | φ   | S <sub>12</sub> | φ   | S <sub>22</sub> | φ   |
| 5        | 1.002           | -1  | 7.98            | 179 | 0.001           | 80  | 0.966           | -1  |
| 10       | 0.999           | -3  | 7.99            | 178 | 0.003           | 105 | 0.969           | -2  |
| 15       | 0.999           | -4  | 8.03            | 176 | 0.005           | 87  | 0.962           | -3  |
| 20       | 0.998           | -6  | 7.99            | 175 | 0.007           | 72  | 0.959           | -4  |
| 25       | 0.999           | -7  | 8.00            | 174 | 0.008           | 82  | 0.959           | -5  |
| 30       | 0.997           | -9  | 7.97            | 173 | 0.010           | 89  | 0.962           | -6  |
| 35       | 0.999           | -10 | 7.95            | 172 | 0.012           | 85  | 0.961           | -7  |
| 40       | 0.996           | -12 | 7.94            | 170 | 0.014           | 74  | 0.962           | -8  |
| 45       | 0.994           | -13 | 7.95            | 169 | 0.015           | 77  | 0.960           | -9  |
| 50       | 0.991           | -15 | 7.91            | 168 | 0.017           | 79  | 0.959           | -10 |
| 55       | 0.990           | -16 | 7.88            | 167 | 0.017           | 83  | 0.959           | -11 |
| 60       | 0.988           | -18 | 7.91            | 165 | 0.021           | 77  | 0.957           | -12 |
| 65       | 0.989           | -19 | 7.85            | 164 | 0.020           | 76  | 0.957           | -13 |
| 70       | 0.983           | -20 | 7.83            | 163 | 0.022           | 74  | 0.954           | -15 |
| 75       | 0.981           | -22 | 7.80            | 162 | 0.025           | 78  | 0.952           | -16 |
| 80       | 0.980           | -23 | 7.76            | 161 | 0.026           | 73  | 0.948           | -17 |
| 85       | 0.979           | -25 | 7.72            | 160 | 0.026           | 72  | 0.946           | -18 |
| 90       | 0.977           | -26 | 7.67            | 158 | 0.029           | 72  | 0.944           | -19 |
| 95       | 0.973           | -28 | 7.68            | 157 | 0.030           | 68  | 0.939           | -19 |
| 100      | 0.970           | -29 | 7.62            | 156 | 0.031           | 68  | 0.934           | -20 |
| 105      | 0.970           | -30 | 7.60            | 155 | 0.031           | 68  | 0.932           | -21 |
| 109      | 0.967           | -32 | 7.54            | 154 | 0.034           | 66  | 0.931           | -22 |
| 114      | 0.961           | -33 | 7.49            | 153 | 0.034           | 67  | 0.926           | -23 |
| 119      | 0.960           | -34 | 7.46            | 152 | 0.036           | 66  | 0.925           | -24 |
| 124      | 0.956           | -36 | 7.42            | 150 | 0.038           | 65  | 0.923           | -25 |
| 129      | 0.954           | -37 | 7.41            | 149 | 0.039           | 65  | 0.923           | -26 |
| 134      | 0.948           | -38 | 7.35            | 148 | 0.041           | 63  | 0.920           | -27 |
| 139      | 0.946           | -40 | 7.29            | 147 | 0.042           | 61  | 0.916           | -28 |
| 144      | 0.944           | -41 | 7.25            | 146 | 0.044           | 61  | 0.913           | -29 |
| 149      | 0.939           | -42 | 7.20            | 145 | 0.044           | 60  | 0.909           | -30 |
| 154      | 0.939           | -43 | 7.17            | 144 | 0.046           | 60  | 0.904           | -31 |
| 159      | 0.935           | -45 | 7.11            | 143 | 0.046           | 58  | 0.900           | -32 |
| 164      | 0.932           | -46 | 7.06            | 142 | 0.048           | 57  | 0.897           | -33 |
| 169      | 0.928           | -47 | 7.01            | 141 | 0.049           | 59  | 0.891           | -34 |
| 174      | 0.927           | -48 | 6.94            | 140 | 0.049           | 55  | 0.885           | -34 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ )

| f<br>MHz | S11             |     | S21             |     | S12             |    | S22             |     |
|----------|-----------------|-----|-----------------|-----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠   | S <sub>21</sub> | ∠   | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 179      | 0.922           | -49 | 6.89            | 139 | 0.051           | 55 | 0.882           | -35 |
| 184      | 0.918           | -51 | 6.85            | 138 | 0.052           | 54 | 0.883           | -36 |
| 189      | 0.915           | -52 | 6.82            | 137 | 0.053           | 53 | 0.878           | -36 |
| 194      | 0.912           | -53 | 6.78            | 136 | 0.053           | 50 | 0.874           | -37 |
| 199      | 0.904           | -54 | 6.71            | 135 | 0.054           | 52 | 0.867           | -38 |
| 204      | 0.902           | -55 | 6.65            | 134 | 0.054           | 51 | 0.868           | -39 |
| 209      | 0.902           | -56 | 6.62            | 133 | 0.056           | 50 | 0.866           | -39 |
| 214      | 0.898           | -58 | 6.57            | 132 | 0.058           | 50 | 0.863           | -40 |
| 219      | 0.896           | -59 | 6.52            | 132 | 0.059           | 49 | 0.858           | -41 |
| 224      | 0.888           | -60 | 6.47            | 131 | 0.059           | 48 | 0.850           | -42 |
| 229      | 0.887           | -61 | 6.42            | 130 | 0.060           | 46 | 0.847           | -43 |
| 234      | 0.885           | -62 | 6.36            | 129 | 0.061           | 46 | 0.846           | -44 |
| 239      | 0.882           | -63 | 6.35            | 128 | 0.062           | 46 | 0.837           | -45 |
| 244      | 0.876           | -64 | 6.25            | 127 | 0.062           | 45 | 0.833           | -45 |
| 249      | 0.872           | -65 | 6.19            | 126 | 0.063           | 43 | 0.829           | -46 |
| 254      | 0.869           | -66 | 6.15            | 125 | 0.064           | 43 | 0.828           | -47 |
| 259      | 0.867           | -67 | 6.09            | 125 | 0.065           | 43 | 0.823           | -47 |
| 264      | 0.863           | -68 | 6.06            | 124 | 0.065           | 42 | 0.818           | -48 |
| 269      | 0.860           | -69 | 6.01            | 123 | 0.065           | 42 | 0.816           | -48 |
| 274      | 0.856           | -70 | 5.95            | 122 | 0.067           | 41 | 0.815           | -49 |
| 279      | 0.854           | -71 | 5.91            | 121 | 0.068           | 40 | 0.812           | -50 |
| 284      | 0.848           | -72 | 5.87            | 120 | 0.068           | 39 | 0.809           | -50 |
| 289      | 0.849           | -73 | 5.84            | 120 | 0.068           | 38 | 0.807           | -51 |
| 294      | 0.845           | -74 | 5.78            | 119 | 0.069           | 38 | 0.805           | -52 |
| 299      | 0.840           | -75 | 5.73            | 118 | 0.070           | 36 | 0.800           | -53 |
| 304      | 0.839           | -75 | 5.68            | 117 | 0.068           | 37 | 0.795           | -53 |
| 308      | 0.840           | -76 | 5.63            | 117 | 0.069           | 35 | 0.793           | -54 |
| 313      | 0.835           | -77 | 5.59            | 116 | 0.071           | 35 | 0.790           | -55 |
| 318      | 0.832           | -78 | 5.54            | 115 | 0.071           | 35 | 0.784           | -55 |
| 323      | 0.829           | -79 | 5.48            | 114 | 0.070           | 34 | 0.783           | -56 |
| 328      | 0.829           | -80 | 5.45            | 114 | 0.072           | 33 | 0.778           | -56 |
| 333      | 0.825           | -81 | 5.39            | 113 | 0.071           | 33 | 0.776           | -57 |
| 338      | 0.821           | -82 | 5.35            | 112 | 0.073           | 32 | 0.771           | -58 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ )

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |     | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|------|-----------------|-----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠   | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 343      | 0.818           | -82  | 5.31            | 111 | 0.072           | 32 | 0.770           | -58 |
| 348      | 0.816           | -83  | 5.25            | 111 | 0.074           | 30 | 0.765           | -59 |
| 353      | 0.814           | -84  | 5.23            | 110 | 0.074           | 31 | 0.764           | -59 |
| 358      | 0.810           | -85  | 5.18            | 110 | 0.073           | 30 | 0.764           | -59 |
| 363      | 0.810           | -85  | 5.16            | 109 | 0.074           | 30 | 0.761           | -60 |
| 368      | 0.807           | -86  | 5.11            | 108 | 0.074           | 29 | 0.756           | -61 |
| 373      | 0.805           | -87  | 5.07            | 107 | 0.075           | 29 | 0.760           | -61 |
| 378      | 0.801           | -88  | 5.03            | 107 | 0.075           | 27 | 0.753           | -62 |
| 383      | 0.799           | -88  | 4.98            | 106 | 0.075           | 27 | 0.752           | -62 |
| 388      | 0.796           | -89  | 4.94            | 105 | 0.074           | 27 | 0.748           | -63 |
| 393      | 0.796           | -90  | 4.88            | 105 | 0.077           | 26 | 0.748           | -63 |
| 398      | 0.790           | -91  | 4.85            | 104 | 0.075           | 26 | 0.743           | -64 |
| 403      | 0.794           | -91  | 4.82            | 103 | 0.076           | 25 | 0.739           | -64 |
| 408      | 0.789           | -92  | 4.78            | 103 | 0.077           | 26 | 0.738           | -65 |
| 413      | 0.785           | -92  | 4.73            | 102 | 0.076           | 25 | 0.736           | -66 |
| 418      | 0.788           | -93  | 4.70            | 102 | 0.076           | 24 | 0.732           | -66 |
| 423      | 0.783           | -94  | 4.66            | 101 | 0.077           | 24 | 0.730           | -66 |
| 428      | 0.784           | -95  | 4.64            | 101 | 0.079           | 23 | 0.728           | -67 |
| 433      | 0.779           | -95  | 4.60            | 100 | 0.078           | 23 | 0.727           | -67 |
| 438      | 0.779           | -96  | 4.55            | 99  | 0.078           | 22 | 0.727           | -68 |
| 443      | 0.775           | -97  | 4.52            | 99  | 0.077           | 21 | 0.725           | -68 |
| 448      | 0.778           | -98  | 4.51            | 98  | 0.078           | 21 | 0.725           | -69 |
| 453      | 0.776           | -98  | 4.46            | 98  | 0.078           | 21 | 0.719           | -69 |
| 458      | 0.771           | -99  | 4.43            | 97  | 0.078           | 21 | 0.720           | -70 |
| 463      | 0.771           | -99  | 4.39            | 96  | 0.079           | 20 | 0.723           | -70 |
| 468      | 0.769           | -100 | 4.36            | 95  | 0.079           | 19 | 0.716           | -71 |
| 473      | 0.767           | -100 | 4.31            | 95  | 0.079           | 18 | 0.716           | -71 |
| 478      | 0.765           | -101 | 4.28            | 95  | 0.078           | 20 | 0.716           | -72 |
| 483      | 0.764           | -101 | 4.24            | 94  | 0.079           | 19 | 0.710           | -72 |
| 488      | 0.763           | -102 | 4.22            | 94  | 0.079           | 19 | 0.711           | -72 |
| 493      | 0.762           | -103 | 4.18            | 93  | 0.079           | 18 | 0.709           | -73 |
| 498      | 0.760           | -103 | 4.15            | 93  | 0.080           | 17 | 0.706           | -73 |
| 503      | 0.760           | -104 | 4.12            | 92  | 0.079           | 16 | 0.705           | -74 |
| 507      | 0.758           | -104 | 4.10            | 91  | 0.079           | 17 | 0.701           | -74 |

## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠  | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 512      | 0.758           | -105 | 4.08            | 91 | 0.079           | 16 | 0.700           | -74 |
| 517      | 0.751           | -105 | 4.03            | 90 | 0.078           | 16 | 0.700           | -75 |
| 522      | 0.750           | -106 | 4.00            | 90 | 0.080           | 15 | 0.700           | -75 |
| 527      | 0.753           | -106 | 4.00            | 89 | 0.079           | 16 | 0.698           | -76 |
| 532      | 0.750           | -107 | 3.96            | 89 | 0.079           | 14 | 0.699           | -76 |
| 537      | 0.749           | -107 | 3.94            | 88 | 0.079           | 15 | 0.696           | -76 |
| 542      | 0.748           | -108 | 3.90            | 87 | 0.080           | 13 | 0.696           | -77 |
| 547      | 0.749           | -109 | 3.88            | 87 | 0.080           | 13 | 0.697           | -77 |
| 552      | 0.750           | -109 | 3.85            | 87 | 0.079           | 14 | 0.693           | -78 |
| 557      | 0.747           | -110 | 3.82            | 86 | 0.078           | 13 | 0.697           | -78 |
| 562      | 0.743           | -110 | 3.78            | 86 | 0.079           | 12 | 0.695           | -79 |
| 567      | 0.744           | -111 | 3.75            | 85 | 0.079           | 12 | 0.689           | -79 |
| 572      | 0.742           | -111 | 3.73            | 85 | 0.078           | 11 | 0.690           | -79 |
| 577      | 0.743           | -112 | 3.70            | 84 | 0.080           | 12 | 0.689           | -80 |
| 582      | 0.743           | -112 | 3.67            | 84 | 0.080           | 11 | 0.691           | -80 |
| 587      | 0.742           | -112 | 3.64            | 83 | 0.078           | 11 | 0.688           | -80 |
| 592      | 0.740           | -113 | 3.62            | 83 | 0.080           | 10 | 0.685           | -81 |
| 597      | 0.741           | -113 | 3.61            | 82 | 0.078           | 10 | 0.682           | -81 |
| 602      | 0.739           | -114 | 3.59            | 82 | 0.078           | 10 | 0.685           | -82 |
| 607      | 0.736           | -114 | 3.56            | 82 | 0.079           | 9  | 0.682           | -82 |
| 612      | 0.737           | -115 | 3.53            | 81 | 0.077           | 9  | 0.684           | -82 |
| 617      | 0.735           | -115 | 3.52            | 81 | 0.078           | 10 | 0.682           | -82 |
| 622      | 0.736           | -115 | 3.50            | 80 | 0.078           | 9  | 0.680           | -83 |
| 627      | 0.732           | -116 | 3.47            | 80 | 0.078           | 8  | 0.681           | -83 |
| 632      | 0.733           | -117 | 3.45            | 79 | 0.077           | 8  | 0.682           | -84 |
| 637      | 0.730           | -117 | 3.41            | 79 | 0.078           | 8  | 0.684           | -84 |
| 642      | 0.731           | -117 | 3.40            | 78 | 0.077           | 8  | 0.683           | -85 |
| 647      | 0.728           | -118 | 3.37            | 78 | 0.077           | 7  | 0.679           | -85 |
| 652      | 0.730           | -118 | 3.35            | 77 | 0.077           | 8  | 0.679           | -85 |
| 657      | 0.725           | -119 | 3.32            | 77 | 0.077           | 7  | 0.679           | -85 |
| 662      | 0.725           | -119 | 3.29            | 76 | 0.079           | 6  | 0.679           | -86 |
| 667      | 0.727           | -120 | 3.27            | 76 | 0.078           | 5  | 0.677           | -86 |
| 672      | 0.731           | -120 | 3.26            | 75 | 0.077           | 6  | 0.676           | -86 |
| 677      | 0.727           | -120 | 3.24            | 75 | 0.077           | 5  | 0.675           | -87 |

## The Broadband RF TMOS<sup>®</sup> Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |     |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|-----|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠  | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠   |
| 682      | 0.725           | -121 | 3.21            | 75 | 0.077           | 4  | 0.673           | -87 |
| 687      | 0.726           | -121 | 3.19            | 74 | 0.078           | 6  | 0.672           | -87 |
| 692      | 0.724           | -121 | 3.17            | 74 | 0.076           | 6  | 0.672           | -88 |
| 697      | 0.728           | -122 | 3.17            | 74 | 0.075           | 6  | 0.672           | -88 |
| 702      | 0.724           | -122 | 3.13            | 73 | 0.075           | 5  | 0.672           | -88 |
| 706      | 0.724           | -122 | 3.12            | 73 | 0.077           | 5  | 0.670           | -89 |
| 711      | 0.722           | -123 | 3.10            | 72 | 0.077           | 5  | 0.674           | -89 |
| 716      | 0.722           | -123 | 3.09            | 72 | 0.076           | 4  | 0.676           | -89 |
| 721      | 0.723           | -124 | 3.08            | 71 | 0.075           | 2  | 0.674           | -90 |
| 726      | 0.720           | -124 | 3.05            | 71 | 0.075           | 4  | 0.672           | -90 |
| 731      | 0.719           | -124 | 3.03            | 70 | 0.075           | 4  | 0.676           | -90 |
| 736      | 0.720           | -125 | 3.02            | 70 | 0.076           | 3  | 0.675           | -91 |
| 741      | 0.716           | -125 | 2.99            | 70 | 0.075           | 2  | 0.672           | -91 |
| 746      | 0.718           | -126 | 2.98            | 69 | 0.075           | 3  | 0.677           | -91 |
| 751      | 0.715           | -126 | 2.97            | 69 | 0.075           | 3  | 0.670           | -92 |
| 756      | 0.717           | -126 | 2.94            | 68 | 0.075           | 3  | 0.673           | -92 |
| 761      | 0.716           | -127 | 2.92            | 68 | 0.075           | 2  | 0.668           | -92 |
| 766      | 0.717           | -127 | 2.90            | 67 | 0.075           | 2  | 0.673           | -93 |
| 771      | 0.717           | -128 | 2.88            | 67 | 0.073           | 2  | 0.669           | -93 |
| 776      | 0.714           | -128 | 2.86            | 67 | 0.076           | 1  | 0.668           | -93 |
| 781      | 0.718           | -128 | 2.86            | 66 | 0.074           | 1  | 0.668           | -93 |
| 786      | 0.718           | -129 | 2.85            | 66 | 0.073           | 1  | 0.670           | -94 |
| 791      | 0.718           | -129 | 2.82            | 66 | 0.073           | 1  | 0.670           | -94 |
| 796      | 0.716           | -129 | 2.81            | 65 | 0.072           | 0  | 0.668           | -94 |
| 801      | 0.715           | -130 | 2.79            | 65 | 0.073           | -1 | 0.671           | -95 |
| 806      | 0.718           | -130 | 2.77            | 65 | 0.071           | 1  | 0.669           | -95 |
| 811      | 0.714           | -130 | 2.77            | 64 | 0.072           | 0  | 0.672           | -95 |
| 816      | 0.714           | -130 | 2.74            | 64 | 0.072           | 0  | 0.673           | -96 |
| 821      | 0.714           | -131 | 2.72            | 63 | 0.070           | 0  | 0.671           | -96 |
| 826      | 0.715           | -131 | 2.71            | 63 | 0.073           | 0  | 0.675           | -96 |
| 831      | 0.713           | -131 | 2.69            | 63 | 0.071           | 0  | 0.672           | -96 |
| 836      | 0.713           | -131 | 2.68            | 62 | 0.072           | -1 | 0.672           | -97 |
| 841      | 0.712           | -132 | 2.67            | 62 | 0.069           | 0  | 0.671           | -97 |
| 846      | 0.710           | -132 | 2.65            | 61 | 0.071           | -1 | 0.672           | -97 |
| 851      | 0.708           | -132 | 2.63            | 61 | 0.071           | -1 | 0.670           | -97 |



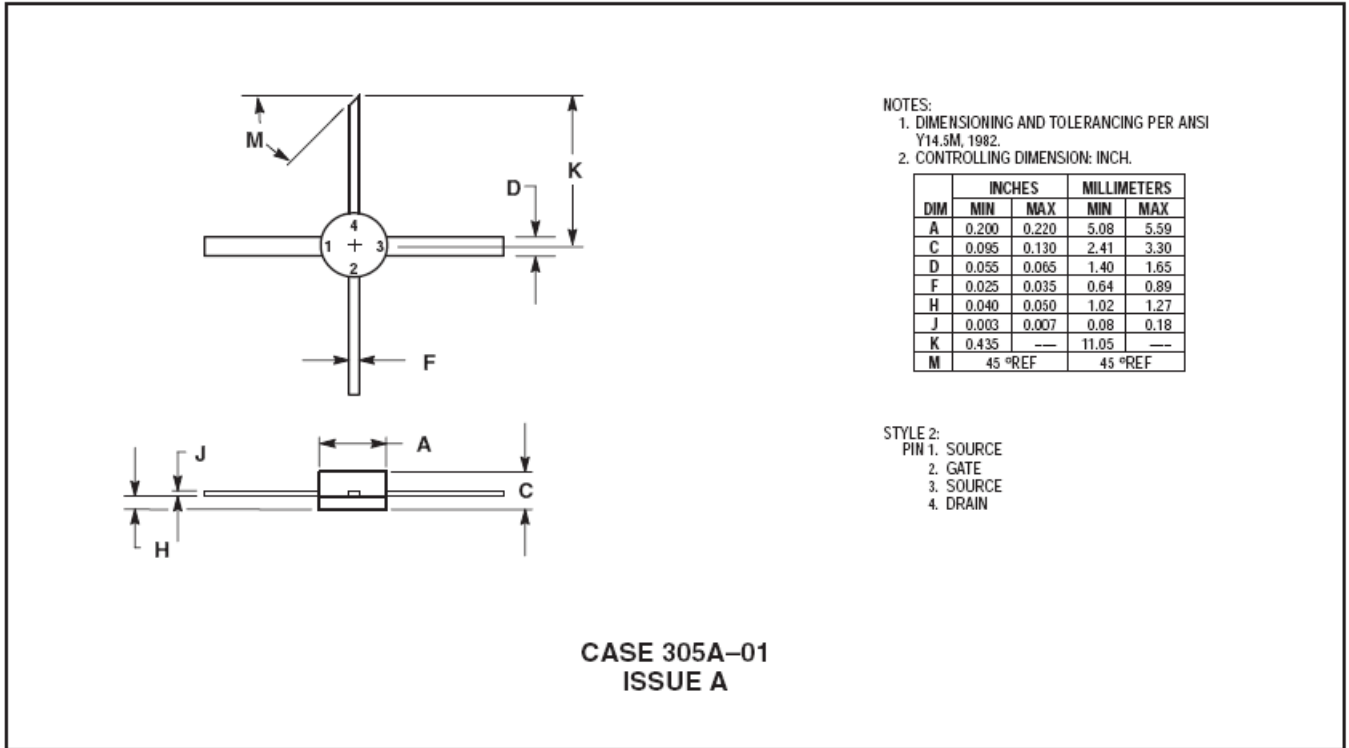
## The Broadband RF TMOS® Line 2W, 500MHz, 28V

Rev. V1

Table 2. Common Source S-Parameters ( $V_{DS} = 28\text{ V}$ ,  $I_D = 100\text{ mA}$ ) (continued)

| f<br>MHz | S <sub>11</sub> |      | S <sub>21</sub> |    | S <sub>12</sub> |    | S <sub>22</sub> |      |
|----------|-----------------|------|-----------------|----|-----------------|----|-----------------|------|
|          | S <sub>11</sub> | ∠    | S <sub>21</sub> | ∠  | S <sub>12</sub> | ∠  | S <sub>22</sub> | ∠    |
| 856      | 0.712           | -133 | 2.62            | 61 | 0.071           | -2 | 0.669           | -98  |
| 861      | 0.710           | -133 | 2.61            | 61 | 0.071           | -2 | 0.669           | -98  |
| 866      | 0.710           | -134 | 2.59            | 60 | 0.071           | -2 | 0.669           | -98  |
| 871      | 0.710           | -134 | 2.58            | 60 | 0.071           | -2 | 0.669           | -98  |
| 876      | 0.713           | -134 | 2.57            | 59 | 0.069           | -3 | 0.666           | -99  |
| 881      | 0.711           | -135 | 2.56            | 59 | 0.068           | -3 | 0.667           | -99  |
| 886      | 0.710           | -135 | 2.54            | 59 | 0.069           | -3 | 0.666           | -99  |
| 891      | 0.711           | -135 | 2.52            | 58 | 0.067           | -3 | 0.668           | -100 |
| 896      | 0.711           | -136 | 2.52            | 58 | 0.070           | -2 | 0.670           | -100 |
| 901      | 0.709           | -136 | 2.50            | 57 | 0.069           | -5 | 0.669           | -101 |
| 905      | 0.711           | -136 | 2.49            | 57 | 0.069           | -3 | 0.671           | -101 |
| 910      | 0.711           | -136 | 2.47            | 57 | 0.068           | -4 | 0.674           | -101 |
| 915      | 0.710           | -137 | 2.46            | 56 | 0.068           | -2 | 0.673           | -101 |
| 920      | 0.712           | -137 | 2.45            | 56 | 0.066           | -4 | 0.673           | -102 |
| 925      | 0.708           | -137 | 2.42            | 56 | 0.067           | -4 | 0.673           | -102 |
| 930      | 0.709           | -137 | 2.42            | 55 | 0.068           | -3 | 0.673           | -102 |
| 935      | 0.709           | -138 | 2.41            | 55 | 0.066           | -4 | 0.670           | -102 |
| 940      | 0.709           | -138 | 2.40            | 55 | 0.066           | -2 | 0.672           | -102 |
| 945      | 0.709           | -138 | 2.39            | 54 | 0.065           | -3 | 0.672           | -103 |
| 950      | 0.708           | -139 | 2.38            | 54 | 0.066           | -4 | 0.671           | -103 |
| 955      | 0.711           | -139 | 2.36            | 54 | 0.065           | -5 | 0.669           | -103 |
| 960      | 0.709           | -139 | 2.35            | 54 | 0.064           | -4 | 0.672           | -103 |
| 965      | 0.708           | -140 | 2.34            | 53 | 0.064           | -3 | 0.671           | -104 |
| 970      | 0.707           | -140 | 2.33            | 53 | 0.065           | -5 | 0.673           | -104 |
| 975      | 0.706           | -140 | 2.32            | 52 | 0.065           | -4 | 0.671           | -104 |
| 980      | 0.707           | -140 | 2.30            | 52 | 0.065           | -4 | 0.669           | -104 |
| 985      | 0.707           | -140 | 2.29            | 51 | 0.064           | -6 | 0.674           | -105 |
| 990      | 0.708           | -141 | 2.28            | 51 | 0.063           | -4 | 0.674           | -105 |
| 995      | 0.708           | -141 | 2.28            | 51 | 0.063           | -5 | 0.674           | -105 |
| 1000     | 0.710           | -141 | 2.26            | 50 | 0.063           | -5 | 0.676           | -106 |

## PACKAGE DIMENSIONS



M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.