**MOTOROLA**
**SEMICONDUCTOR TECHNICAL DATA**

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by MRF6522–5/D

## The RF Sub–Micron MOSFET Line

# RF Power Field Effect Transistor

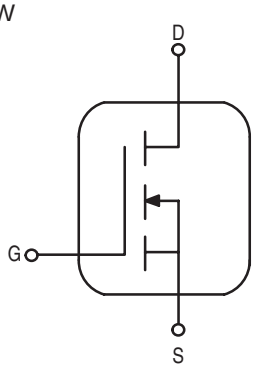
## N–Channel Enhancement–Mode Lateral MOSFET

# MRF6522-5R1

**960 MHz, 5.0 W, 26 V**
**LATERAL N–CHANNEL**
**RF POWER MOSFET**

Designed for Class A and Class AB common source, linear power amplifiers in the 960 MHz range. The MRF6522–5R1 has been specifically designed for use in Communications Network (GSM) base stations. The package offers the advantage of SMD.

- Specified 26 Volts, 960 MHz, Class AB Characteristics
  Output Power = 5.0 Watts CW
  Power Gain = 17 dB Min @ 960 MHz, 5.0 Watts CW
  Efficiency = 50% Min @ 960 MHz, 5.0 Watts CW
- Excellent Thermal Stability
- Characterized with Series Equivalent Large–Signal Impedance Parameters
- S–Parameter Characterization at High Bias Levels
- Bottom Side Source Eliminates DC Isolators, Reducing Common Mode Inductances
- Available in Tape and Reel. R1 Suffix = 500 Units per 12 mm, 7 inch Reel.




**CASE 458C–02, STYLE 1**

**MAXIMUM RATINGS**

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Drain–Source Voltage | $V_{DSS}$ | 65 | Vdc |
| Gate–Source Voltage | $V_{GS}$ | ±20 | Vdc |
| Total Device Dissipation @ $T_C$ = 25°C<br>Derate above 25°C | $P_D$ | 11.7<br>0.067 | Watts<br>W/°C |
| Storage Temperature Range | $T_{stg}$ | –65 to +150 | °C |
| Operating Junction Temperature | $T_J$ | 200 | °C |

**THERMAL CHARACTERISTICS**

| Characteristic | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance, Junction to Case (1) | $R_{\theta JC}$ | 6.86 | °C/W |

**ELECTRICAL CHARACTERISTICS** ($T_C$ = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| Drain–Source Breakdown Voltage ($V_{GS}$ = 0 Vdc, $I_D$ = 0.2 mA) | $V_{(BR)DSS}$ | 65 | — | — | Vdc |
| Zero Gate Voltage Drain Current ($V_{DS}$ = 26 Vdc, $V_{GS}$ = 0) | $I_{DSS}$ | — | — | 1.0 | μAdc |
| Gate–Source Leakage Current ($V_{GS}$ = 20 Vdc, $V_{DS}$ = 0) | $I_{GSS}$ | — | — | 1.0 | μAdc |

(1) Thermal resistance is determined under specified RF operating condition.

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

REV 1



MOTOROLA

**ELECTRICAL CHARACTERISTICS continued** ($T_C$ = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| **ON CHARACTERISTICS** | | | | | |
| Gate Threshold Voltage ($V_{DS}$ = 10 V, $I_D$ = 20 μA) | $V_{GS(th)}$ | 1.25 | 3.0 | 4.0 | Vdc |
| Gate Quiescent Voltage ($V_{DS}$ = 26 Vdc, $I_D$ = 50 mA) | $V_{GS(Q)}$ | 2.25 | 4.0 | 5.0 | Vdc |
| Drain–Source On–Voltage ($V_{GS}$ = 10 V, $I_D$ = 0.25 A) | $V_{DS(on)}$ | — | — | 0.7 | Vdc |
| **DYNAMIC CHARACTERISTICS** | | | | | |
| Input Capacitance ($V_{DS}$ = 26 V, $V_{GS}$ = 0 V, f = 1.0 MHz) | $C_{iss}$ | — | 6.0 | — | pF |
| Output Capacitance ($V_{DS}$ = 26 V, $V_{GS}$ = 0 V, f = 1.0 MHz) | $C_{oss}$ | — | 3.7 | — | pF |
| Reverse Transfer Capacitance ($V_{DS}$ = 26 V, $V_{GS}$ = 0 V, f = 1.0 MHz) | $C_{rss}$ | — | 0.3 | — | pF |
| **FUNCTIONAL TESTS** (In Motorola Test Fixture) | | | | | |
| Common–Source Power Gain ($V_{DS}$ = 26 V, $P_{out}$ = 5.0 W CW, $I_{DQ}$ = 50 mA, f = 960 MHz) | $G_{ps}$ | 17 | 19 | — | dB |
| Drain Efficiency ($V_{DS}$ = 26 V, $P_{out}$ = 5.0 W CW, $I_{DQ}$ = 50 mA, f = 960 MHz) | η | 50 | 55 | — | % |
| Input Return Loss ($V_{DS}$ = 26 V, $P_{out}$ = 5.0 W CW, $I_{DQ}$ = 50 mA, f = 960 MHz) | IRL | — | — | –9 | dB |

## TYPICAL CHARACTERISTICS

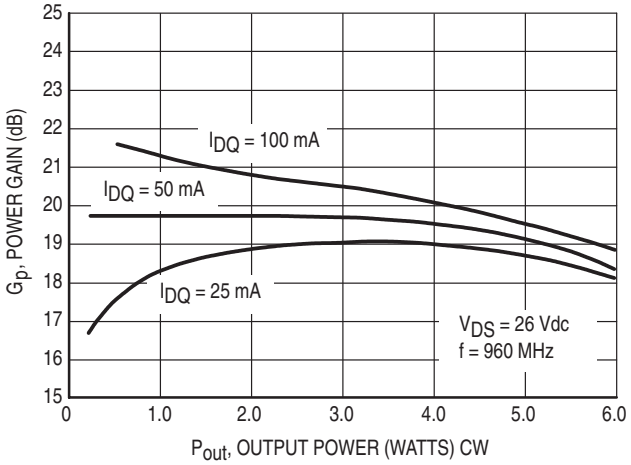



**Figure 1. Power Gain versus Output Power**

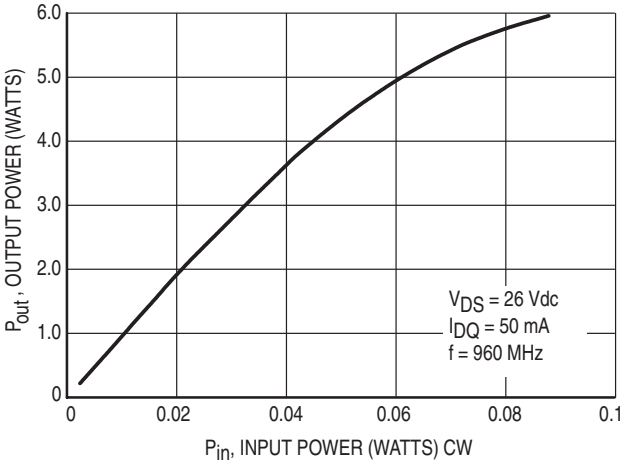



**Figure 2. Output Power versus Input Power**

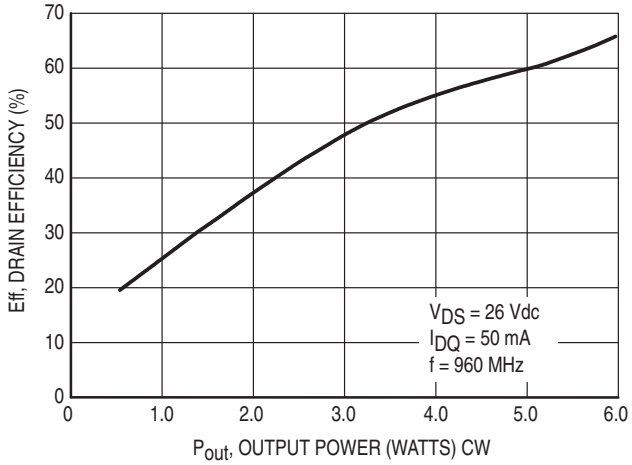



**Figure 3. Drain Efficiency versus Output Power**

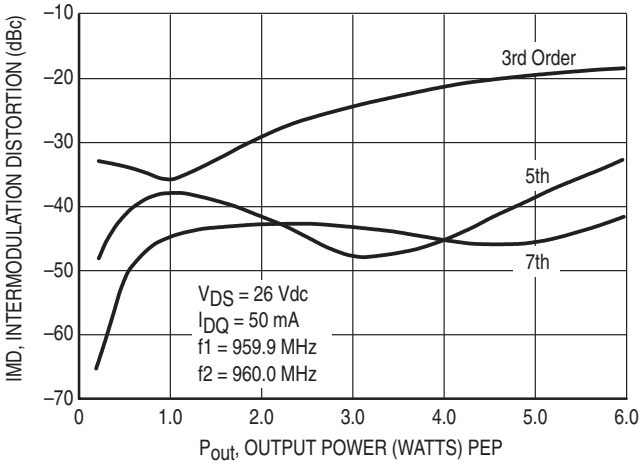
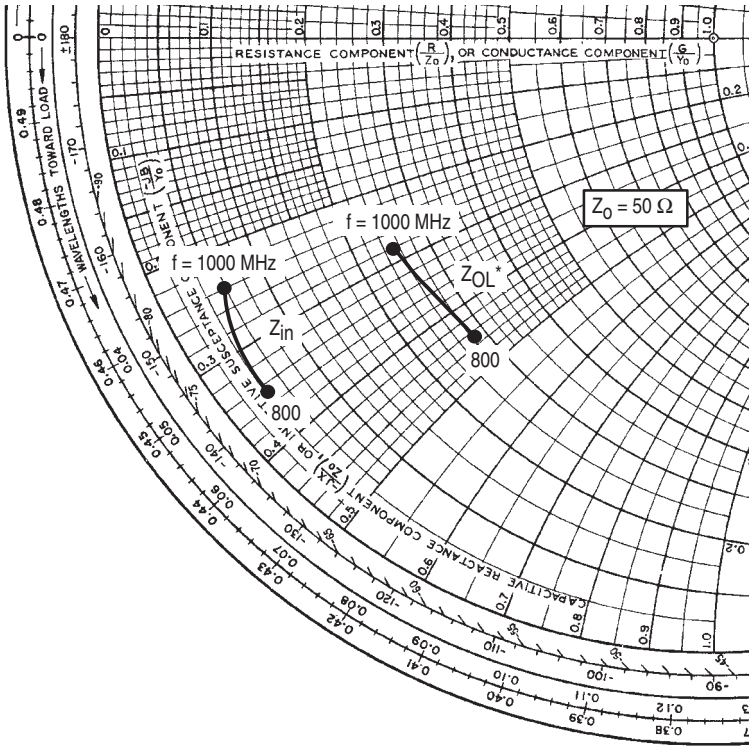



**Figure 4. Intermodulation Distortion Products versus Output Power**




| f<br>MHz | $Z_{in}$<br>Ohms | $Z_{OL}^*$<br>Ohms |
|---|---|---|
| 800 | 2.40 – j17.4 | 14.7 – j22.8 |
| 825 | 2.46 – j16.4 | 14.1 – j20.8 |
| 850 | 2.50 – j15.8 | 14.0 – j19.5 |
| 875 | 2.56 – j15.2 | 13.9 – j17.9 |
| 900 | 2.60 – j14.7 | 13.8 – j17.3 |
| 925 | 2.71 – j13.7 | 13.7 – j16.9 |
| 950 | 2.78 – j13.2 | 13.2 – j15.6 |
| 975 | 2.88 – j12.6 | 12.9 – j14.4 |
| 1000 | 3.06 – j11.9 | 12.9 – j14.2 |

$Z_{in}$ = Complex conjugate of source impedance.

$Z_{OL}^*$ = Complex conjugate of the optimum load impedance into which the device operates at a given output power, voltage, current and frequency.

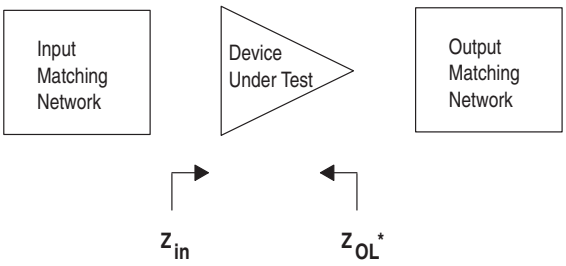



**Figure 5. Series Equivalent Input and Output Impedance**

**Table 1. Common Source S–Parameters at $V_{DS}$ = 12 Vdc, $I_D$ = 50 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.786 | –114 | 5.16 | 87 | 0.074 | 2 | 0.711 | –100 |
| 0.525 | 0.782 | –117 | 4.94 | 84 | 0.073 | –1 | 0.709 | –102 |
| 0.550 | 0.779 | –120 | 4.74 | 82 | 0.074 | –2 | 0.707 | –105 |
| 0.575 | 0.777 | –122 | 4.55 | 79 | 0.073 | –5 | 0.706 | –107 |
| 0.600 | 0.776 | –124 | 4.37 | 77 | 0.073 | –7 | 0.707 | –109 |
| 0.625 | 0.775 | –127 | 4.20 | 75 | 0.073 | –9 | 0.707 | –111 |
| 0.650 | 0.774 | –129 | 4.03 | 73 | 0.072 | –12 | 0.707 | –113 |
| 0.675 | 0.774 | –131 | 3.89 | 70 | 0.072 | –13 | 0.710 | –115 |
| 0.700 | 0.773 | –133 | 3.74 | 68 | 0.071 | –14 | 0.711 | –117 |
| 0.725 | 0.774 | –134 | 3.61 | 66 | 0.071 | –16 | 0.712 | –119 |
| 0.750 | 0.775 | –136 | 3.48 | 64 | 0.070 | –18 | 0.715 | –120 |
| 0.775 | 0.775 | –138 | 3.36 | 63 | 0.069 | –20 | 0.717 | –122 |
| 0.800 | 0.776 | –139 | 3.25 | 61 | 0.069 | –21 | 0.720 | –124 |
| 0.825 | 0.777 | –141 | 3.14 | 59 | 0.068 | –23 | 0.723 | –125 |
| 0.850 | 0.778 | –143 | 3.03 | 57 | 0.067 | –25 | 0.728 | –128 |
| 0.875 | 0.779 | –144 | 2.93 | 55 | 0.067 | –26 | 0.730 | –129 |
| 0.900 | 0.780 | –146 | 2.84 | 53 | 0.066 | –28 | 0.733 | –130 |
| 0.925 | 0.781 | –147 | 2.75 | 51 | 0.064 | –29 | 0.737 | –132 |
| 0.950 | 0.783 | –149 | 2.66 | 50 | 0.065 | –30 | 0.740 | –133 |
| 0.975 | 0.785 | –150 | 2.58 | 48 | 0.063 | –32 | 0.742 | –134 |
| 1.000 | 0.786 | –151 | 2.51 | 47 | 0.063 | –33 | 0.745 | –136 |

**Table 2. Common Source S–Parameters at $V_{DS}$ = 12 Vdc, $I_D$ = 100 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.757 | –122 | 6.36 | 86 | 0.066 | 2 | 0.652 | –107 |
| 0.525 | 0.754 | –124 | 6.09 | 84 | 0.065 | –1 | 0.650 | –109 |
| 0.550 | 0.752 | –127 | 5.84 | 81 | 0.065 | –3 | 0.649 | –111 |
| 0.575 | 0.750 | –129 | 5.60 | 79 | 0.065 | –5 | 0.648 | –113 |
| 0.600 | 0.749 | –131 | 5.37 | 77 | 0.065 | –7 | 0.649 | –115 |
| 0.625 | 0.748 | –133 | 5.16 | 75 | 0.065 | –8 | 0.650 | –117 |
| 0.650 | 0.747 | –135 | 4.96 | 73 | 0.065 | –10 | 0.651 | –119 |
| 0.675 | 0.747 | –137 | 4.78 | 71 | 0.064 | –12 | 0.654 | –121 |
| 0.700 | 0.746 | –139 | 4.60 | 69 | 0.064 | –14 | 0.655 | –123 |
| 0.725 | 0.747 | –140 | 4.43 | 67 | 0.062 | –15 | 0.658 | –124 |
| 0.750 | 0.747 | –142 | 4.28 | 65 | 0.062 | –17 | 0.660 | –126 |
| 0.775 | 0.748 | –144 | 4.13 | 63 | 0.062 | –18 | 0.663 | –127 |
| 0.800 | 0.748 | –145 | 3.99 | 61 | 0.062 | –20 | 0.667 | –129 |
| 0.825 | 0.749 | –147 | 3.86 | 60 | 0.061 | –21 | 0.670 | –130 |
| 0.850 | 0.751 | –148 | 3.73 | 58 | 0.060 | –22 | 0.674 | –132 |
| 0.875 | 0.751 | –150 | 3.61 | 56 | 0.060 | –25 | 0.679 | –134 |
| 0.900 | 0.752 | –151 | 3.50 | 54 | 0.059 | –25 | 0.681 | –135 |
| 0.925 | 0.755 | –152 | 3.39 | 53 | 0.058 | –27 | 0.686 | –136 |
| 0.950 | 0.756 | –154 | 3.29 | 51 | 0.058 | –28 | 0.689 | –137 |
| 0.975 | 0.757 | –155 | 3.19 | 50 | 0.056 | –29 | 0.692 | –139 |
| 1.000 | 0.760 | –156 | 3.10 | 48 | 0.056 | –30 | 0.695 | –140 |

**Table 3. Common Source S–Parameters at $V_{DS}$ = 12 Vdc, $I_D$ = 200 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.743 | –128 | 7.18 | 85 | 0.059 | 1 | 0.607 | –113 |
| 0.525 | 0.740 | –130 | 6.87 | 83 | 0.059 | –1 | 0.607 | –115 |
| 0.550 | 0.739 | –132 | 6.58 | 81 | 0.060 | –3 | 0.608 | –117 |
| 0.575 | 0.736 | –134 | 6.30 | 79 | 0.059 | –4 | 0.608 | –119 |
| 0.600 | 0.735 | –137 | 6.05 | 76 | 0.059 | –7 | 0.610 | –121 |
| 0.625 | 0.735 | –138 | 5.81 | 74 | 0.059 | –8 | 0.610 | –123 |
| 0.650 | 0.734 | –140 | 5.58 | 72 | 0.059 | –10 | 0.612 | –124 |
| 0.675 | 0.734 | –142 | 5.38 | 71 | 0.058 | –11 | 0.615 | –126 |
| 0.700 | 0.733 | –144 | 5.18 | 69 | 0.057 | –12 | 0.616 | –128 |
| 0.725 | 0.733 | –145 | 4.99 | 67 | 0.057 | –14 | 0.620 | –129 |
| 0.750 | 0.734 | –147 | 4.82 | 65 | 0.057 | –16 | 0.622 | –130 |
| 0.775 | 0.735 | –148 | 4.66 | 64 | 0.056 | –17 | 0.626 | –132 |
| 0.800 | 0.735 | –150 | 4.50 | 62 | 0.056 | –18 | 0.630 | –133 |
| 0.825 | 0.736 | –151 | 4.35 | 60 | 0.055 | –19 | 0.633 | –135 |
| 0.850 | 0.737 | –153 | 4.21 | 58 | 0.054 | –21 | 0.638 | –136 |
| 0.875 | 0.739 | –154 | 4.07 | 57 | 0.054 | –22 | 0.642 | –138 |
| 0.900 | 0.739 | –155 | 3.95 | 55 | 0.053 | –24 | 0.645 | –139 |
| 0.925 | 0.741 | –156 | 3.83 | 53 | 0.053 | –25 | 0.649 | –140 |
| 0.950 | 0.742 | –158 | 3.71 | 52 | 0.053 | –26 | 0.653 | –141 |
| 0.975 | 0.744 | –159 | 3.61 | 51 | 0.052 | –27 | 0.656 | –142 |
| 1.000 | 0.746 | –160 | 3.51 | 49 | 0.051 | –28 | 0.661 | –143 |

**Table 4. Common Source S–Parameters at $V_{DS}$ = 26 Vdc, $I_D$ = 50 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.847 | –109 | 6.45 | 93 | 0.047 | 10 | 0.729 | –80 |
| 0.525 | 0.844 | –112 | 6.20 | 90 | 0.047 | 7 | 0.726 | –83 |
| 0.550 | 0.841 | –114 | 5.98 | 88 | 0.046 | 5 | 0.724 | –85 |
| 0.575 | 0.838 | –117 | 5.75 | 85 | 0.047 | 2 | 0.722 | –88 |
| 0.600 | 0.836 | –119 | 5.54 | 83 | 0.047 | 1 | 0.721 | –90 |
| 0.625 | 0.834 | –122 | 5.36 | 80 | 0.047 | –2 | 0.720 | –92 |
| 0.650 | 0.831 | –124 | 5.16 | 78 | 0.047 | –4 | 0.721 | –94 |
| 0.675 | 0.831 | –126 | 4.98 | 76 | 0.046 | –6 | 0.722 | –96 |
| 0.700 | 0.829 | –128 | 4.81 | 73 | 0.045 | –8 | 0.721 | –98 |
| 0.725 | 0.827 | –130 | 4.64 | 71 | 0.045 | –10 | 0.724 | –100 |
| 0.750 | 0.828 | –132 | 4.49 | 69 | 0.045 | –11 | 0.725 | –102 |
| 0.775 | 0.827 | –134 | 4.35 | 67 | 0.045 | –12 | 0.727 | –104 |
| 0.800 | 0.826 | –136 | 4.21 | 65 | 0.044 | –15 | 0.730 | –106 |
| 0.825 | 0.826 | –138 | 4.08 | 63 | 0.043 | –16 | 0.731 | –107 |
| 0.850 | 0.826 | –140 | 3.94 | 61 | 0.043 | –18 | 0.734 | –110 |
| 0.875 | 0.826 | –141 | 3.82 | 59 | 0.042 | –19 | 0.738 | –111 |
| 0.900 | 0.826 | –143 | 3.71 | 57 | 0.042 | –19 | 0.740 | –113 |
| 0.925 | 0.827 | –145 | 3.59 | 55 | 0.041 | –22 | 0.743 | –115 |
| 0.950 | 0.827 | –146 | 3.49 | 54 | 0.041 | –24 | 0.745 | –116 |
| 0.975 | 0.828 | –148 | 3.39 | 52 | 0.040 | –25 | 0.747 | –117 |
| 1.000 | 0.828 | –149 | 3.30 | 50 | 0.039 | –26 | 0.751 | –119 |

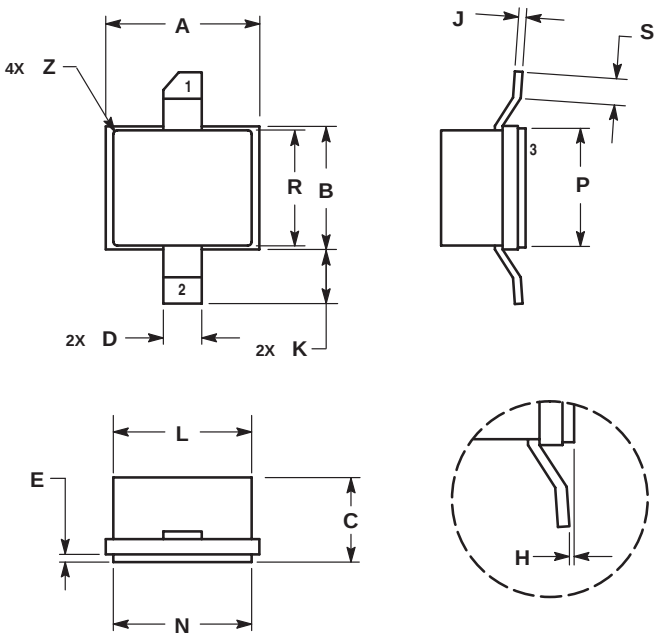
**Table 5. Common Source S–Parameters at $V_{DS}$ = 26 Vdc, $I_D$ = 150 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.826 | –117 | 8.37 | 91 | 0.039 | 8 | 0.626 | –85 |
| 0.525 | 0.822 | –120 | 8.04 | 89 | 0.039 | 7 | 0.625 | –88 |
| 0.550 | 0.818 | –122 | 7.74 | 86 | 0.039 | 6 | 0.623 | –90 |
| 0.575 | 0.815 | –125 | 7.43 | 84 | 0.039 | 3 | 0.622 | –92 |
| 0.600 | 0.813 | –127 | 7.16 | 81 | 0.038 | 1 | 0.624 | –94 |
| 0.625 | 0.811 | –130 | 6.90 | 79 | 0.038 | –1 | 0.624 | –96 |
| 0.650 | 0.808 | –132 | 6.65 | 77 | 0.038 | –3 | 0.626 | –98 |
| 0.675 | 0.808 | –134 | 6.41 | 75 | 0.038 | –5 | 0.627 | –100 |
| 0.700 | 0.807 | –136 | 6.19 | 73 | 0.038 | –5 | 0.629 | –102 |
| 0.725 | 0.806 | –138 | 5.97 | 71 | 0.037 | –8 | 0.631 | –104 |
| 0.750 | 0.805 | –139 | 5.78 | 69 | 0.037 | –10 | 0.635 | –106 |
| 0.775 | 0.805 | –141 | 5.59 | 67 | 0.037 | –11 | 0.637 | –107 |
| 0.800 | 0.804 | –143 | 5.41 | 65 | 0.036 | –11 | 0.640 | –109 |
| 0.825 | 0.805 | –145 | 5.24 | 63 | 0.036 | –13 | 0.643 | –111 |
| 0.850 | 0.804 | –146 | 5.07 | 61 | 0.034 | –14 | 0.648 | –113 |
| 0.875 | 0.805 | –148 | 4.92 | 59 | 0.035 | –16 | 0.652 | –114 |
| 0.900 | 0.803 | –149 | 4.77 | 58 | 0.034 | –17 | 0.655 | –116 |
| 0.925 | 0.805 | –151 | 4.63 | 56 | 0.034 | –18 | 0.659 | –117 |
| 0.950 | 0.806 | –152 | 4.50 | 54 | 0.033 | –19 | 0.663 | –119 |
| 0.975 | 0.806 | –154 | 4.37 | 53 | 0.032 | –21 | 0.666 | –120 |
| 1.000 | 0.807 | –155 | 4.25 | 51 | 0.031 | –22 | 0.671 | –121 |

**Table 6. Common Source S–Parameters at $V_{DS}$ = 26 Vdc, $I_D$ = 300 mAdc**

| f | $S_{11}$ | | $S_{21}$ | | $S_{12}$ | | $S_{22}$ | |
|---|---|---|---|---|---|---|---|---|
| GHz | $\|S_{11}\|$ | $\phi$ | $\|S_{21}\|$ | $\phi$ | $\|S_{12}\|$ | $\phi$ | $\|S_{22}\|$ | $\phi$ |
| 0.500 | 0.827 | –119 | 8.39 | 90 | 0.036 | 8 | 0.612 | –84 |
| 0.525 | 0.824 | –122 | 8.06 | 88 | 0.036 | 7 | 0.612 | –86 |
| 0.550 | 0.821 | –124 | 7.74 | 85 | 0.036 | 4 | 0.611 | –89 |
| 0.575 | 0.818 | –127 | 7.44 | 83 | 0.036 | 3 | 0.611 | –91 |
| 0.600 | 0.816 | –129 | 7.17 | 80 | 0.035 | 1 | 0.612 | –93 |
| 0.625 | 0.814 | –132 | 6.90 | 78 | 0.035 | –1 | 0.613 | –95 |
| 0.650 | 0.812 | –134 | 6.65 | 76 | 0.036 | –3 | 0.615 | –97 |
| 0.675 | 0.811 | –136 | 6.41 | 74 | 0.035 | –5 | 0.617 | –99 |
| 0.700 | 0.809 | –138 | 6.19 | 72 | 0.035 | –6 | 0.619 | –101 |
| 0.725 | 0.809 | –139 | 5.97 | 70 | 0.034 | –8 | 0.622 | –102 |
| 0.750 | 0.809 | –141 | 5.77 | 68 | 0.034 | –8 | 0.625 | –104 |
| 0.775 | 0.808 | –143 | 5.58 | 66 | 0.034 | –10 | 0.628 | –106 |
| 0.800 | 0.808 | –145 | 5.40 | 64 | 0.033 | –11 | 0.632 | –108 |
| 0.825 | 0.808 | –146 | 5.23 | 62 | 0.033 | –13 | 0.635 | –109 |
| 0.850 | 0.808 | –148 | 5.06 | 60 | 0.032 | –15 | 0.640 | –111 |
| 0.875 | 0.808 | –150 | 4.90 | 58 | 0.032 | –16 | 0.644 | –113 |
| 0.900 | 0.808 | –151 | 4.76 | 56 | 0.032 | –17 | 0.647 | –114 |
| 0.925 | 0.808 | –152 | 4.62 | 55 | 0.031 | –18 | 0.652 | –116 |
| 0.950 | 0.809 | –154 | 4.48 | 53 | 0.030 | –19 | 0.657 | –117 |
| 0.975 | 0.809 | –155 | 4.36 | 51 | 0.029 | –20 | 0.659 | –119 |
| 1.000 | 0.810 | –157 | 4.23 | 50 | 0.029 | –22 | 0.664 | –120 |

## PACKAGE DIMENSIONS




NOTES:
1. CONTROLLING DIMENSIONS: INCHES.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
3. DIMENSION H (PACKAGE COPLANARITY): THE BOTTOM OF LEADS AND REFERENCE PLANE T MUST BE COPLANAR WITHIN DIMENSION H.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | MIN | MAX | MIN | MAX |
| A | 0.197 | 0.203 | 5.004 | 5.156 |
| B | 0.157 | 0.163 | 3.988 | 4.140 |
| C | 0.085 | 0.110 | 2.159 | 2.794 |
| D | 0.047 | 0.053 | 1.194 | 1.346 |
| E | 0.004 | 0.010 | 0.102 | 0.254 |
| H | 0.000 | 0.004 | 0.000 | 0.102 |
| J | 0.004 | 0.010 | 0.102 | 0.254 |
| K | 0.050 | 0.090 | 1.270 | 2.286 |
| L | 0.177 | 0.183 | 4.496 | 4.648 |
| N | 0.180 | 0.200 | 4.572 | 5.080 |
| P | 0.140 | 0.160 | 3.556 | 4.064 |
| R | 0.147 | 0.153 | 3.734 | 3.886 |
| Z | — | 0.020 | — | 0.508 |

STYLE 1:
PIN 1. DRAIN
2. GATE
3. SOURCE

**CASE 458C–02**
**ISSUE C**





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