# MOTOR@LA2供应商 SEMICONDUCTOR TECHNICAL DATA

# The RF Line Wideband Linear Amplifier

... designed for amplifier applications in 50 to 100 ohm systems requiring wide bandwidth, low noise and low distortion. This hybrid provides excellent gain stability with temperature and linear amplification as a result of the push-pull circuit design.

 Specified Characteristics at V<sub>CC</sub> = 28 V, T<sub>C</sub> = 25°C: Frequency Range — 1 to 200 MHz Output Power — 1580 mW Typ @ 1 dB Compression, f = 200 MHz Power Gain — 35.5 dB Typ @ f = 100 MHz PEP — 900 mW Typ @ -32 dB IMD Noise Figure — 5 dB Typ @ f = 200 MHz ITO — 47 dBm @ f = 200 MHz

- All Gold Metallization for Improved Reliability
- Unconditional Stability Under All Load Conditions



35.5 dB 1-200 MHz 1.6 WATT WIDEBAND LINEAR AMPLIFIER



CASE 714F-03, STYLE 1 [CA (POS. SUPPLY)]

#### MAXIMUM RATINGS

| Rating                           | Symbol           | Value       | Unit |
|----------------------------------|------------------|-------------|------|
| DC Supply Voltage                | Vcc              | 30          | Vdc  |
| RF Power Input                   | Pin              | +5          | dBm  |
| Operating Case Temperature Range | тс               | -20 to +90  | °C   |
| Storage Temperature Range        | T <sub>stg</sub> | -40 to +100 | °C   |

**ELECTRICAL CHARACTERISTICS** (T<sub>C</sub> = 25°C, V<sub>CC</sub> = 28 V, 50  $\Omega$  system unless otherwise noted)

| Characteristic   | Symbol          | Min  | Тур     | Max | Unit |
|--|-----------------|------|---------|-----|------|
| Frequency Range  | BW              | 1    | 1 AT 14 | 200 | MHz  |
| Gain Flatness (f = 1-200 MHz)  | - V/- I-3       |      | ±0.5    | ±1  | dB   |
| Power Gain (f = 100 MHz)   | PG              | 34   | 35.5    | 37  | dB   |
| Noise Figure, Broadband (f = 200 MHz)  | NF              | _    | 5       | 6   | dB   |
| Power Output — 1 dB Compression (f = 1-200 MHz)  | Po 1dB          | 1260 | 1580    | _   | mW   |
| Power Output — 1 dB Compression (f = 150 MHz)  | Po 1dB          | _    | 2000    | —   | mW   |
| Third Order Intercept (See Figure 10, f <sub>1</sub> = 200 MHz)                                | ITO             | 45   | 47      |     | dBm  |
| Input/Output VSWR (f = 1-200 MHz)  | VSWR            | _    | 1.5:1   | 2:1 | 014- |
| Second Harmonic Distortion ( $P_0 = 100 \text{ mW}$ , $f_{2H} = 150 \text{ MHz}$ )             | d <sub>so</sub> | -    | -70     | -60 | dB   |
| Peak Envelope Power (Two Tone Distortion Test — See Figure 10)<br>(f = 1-200 MHz @ -32 dB IMD) | PEP             | 27-1 | 900     | -   | mW   |
| Supply Current   | Icc             | 400  | 435     | 470 | mA   |
| THE WWW.DZSC.COM   |                 | 1    | 1       |     |      |





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## **TYPICAL CHARACTERISTICS**



Figure 1. Power Gain versus Voltage



Figure 2. Relative Power Gain versus Temperature



Figure 3. 1 dB Compression versus Voltage



Figure 4. Noise Figure versus Voltage



Figure 5. Third Order Intercept versus Voltage



Figure 6. Peak Envelope Power versus Voltage







Figure 8. Group Delay versus Frequency

| Biased at 28 Volts $T_C = 25^{\circ}C$ Zo |       |      |      |      |     |      |       | $\mathbf{Zo} = 50\Omega$ |
|---|-------|------|------|------|-----|------|-------|--------------------------|
| Frequency<br>(MHz)                        | S11   |      | S21  |      | S12 |      | S22   |                          |
|   | Mag   | Ang  | Mag  | Ang  | Mag | Ang  | Mag   | Ang                      |
| 1   | -16.7 | 64   | 36.0 | 23.3 | -42 | -5.2 | -12.9 | 73                       |
| 10  | -21.5 | 21   | 36.2 | -8.4 | -47 | -1.4 | -21.9 | 28                       |
| 50  | -18.5 | 6.8  | 35.9 | -56  | -44 | 2.8  | -17.9 | -10                      |
| 100                                       | -16.9 | -1.8 | 35.7 | -103 | -46 | -68  | -15.7 | -48                      |
| 200                                       | -12.9 | -18  | 34.7 | 145  | -49 | -98  | -14.9 | 115                      |

Magnitude in dB, Phase Angle in degrees.









Figure 10. Intermodulation Test

#### PACKAGE DIMENSIONS



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