

Replaced by MHL19338NN. There are no form, fit or function changes with this part replacement.

## PCS Band RF Linear LDMOS Amplifier

Designed for ultra-linear amplifier applications in 50 ohm systems operating in the PCS frequency band. A silicon FET Class A design provides outstanding linearity and gain. In addition, the excellent group delay and phase linearity characteristics are ideal for digital modulation systems, such as TDMA and CDMA.

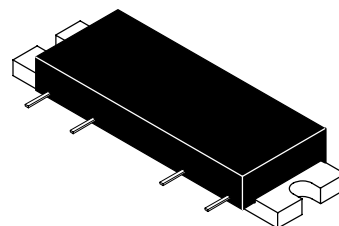
- Third Order Intercept: 46 dBm Typ
- Power Gain: 30 dB Typ (@ f = 1960 MHz)
- Input VSWR  $\leq$  1.5:1

### Features

- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications
- N Suffix Indicates Lead-Free Terminations

**MHL19338N**

**1900-2000 MHz  
 4.0 W, 30 dB  
 RF LINEAR LDMOS AMPLIFIER**



**CASE 301AP-02, STYLE 1**

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**Table 1. Absolute Maximum Ratings** ( $T_C = 25^\circ\text{C}$  unless otherwise noted)

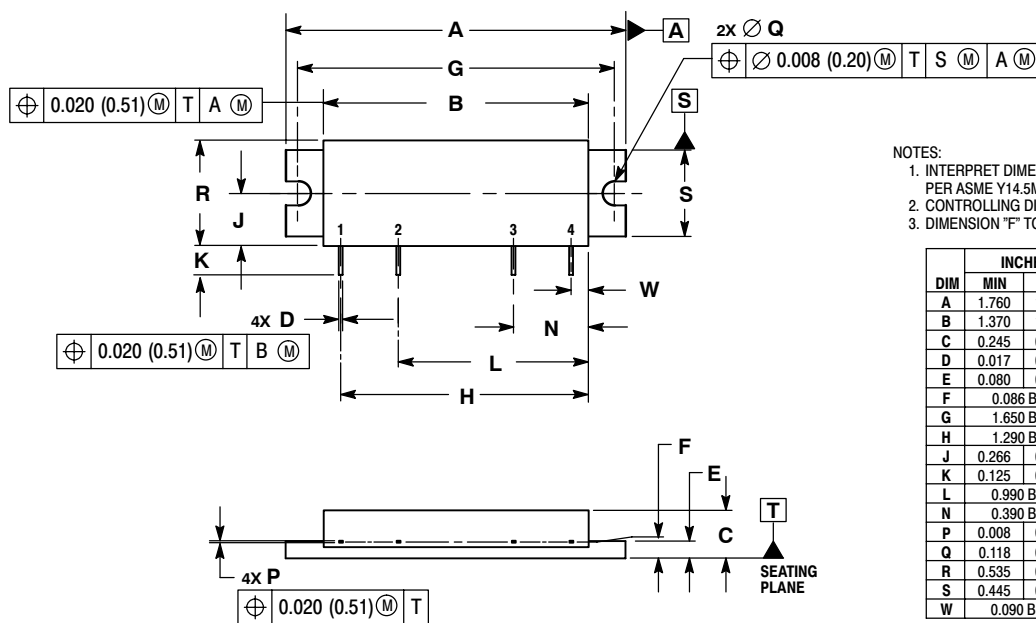
| Rating                           | Symbol    | Value        | Unit             |
|----------------------------------|-----------|--------------|------------------|
| DC Supply Voltage                | $V_{DD}$  | 30           | Vdc              |
| RF Input Power                   | $P_{in}$  | +10          | dBm              |
| Storage Temperature Range        | $T_{stg}$ | - 40 to +100 | $^\circ\text{C}$ |
| Operating Case Temperature Range | $T_C$     | - 20 to +100 | $^\circ\text{C}$ |

**Table 2. Electrical Characteristics** ( $V_{DD} = 28$  Vdc,  $T_C = 25^\circ\text{C}$ ; 50  $\Omega$  System)

| Characteristic                                       | Symbol    | Min | Typ | Max | Unit |
|--|-----------|-----|-----|-----|------|
| Supply Current                                       | $I_{DD}$  | —   | 500 | 525 | mA   |
| Power Gain (f = 1960 MHz)                            | $G_p$     | 29  | 30  | 32  | dB   |
| Gain Flatness (f = 1900 - 2000 MHz)                  | $G_F$     | —   | 0.1 | 0.4 | dB   |
| Power Output @ 1 dB Compression (f = 1950 MHz)       | $P_{1dB}$ | 35  | 36  | —   | dBm  |
| Third Order Intercept (f1 = 1950 MHz, f2 = 1955 MHz) | ITO       | 45  | 46  | —   | dBm  |
| Noise Figure (f = 2000 MHz)                          | NF        | —   | 4.2 | 4.5 | dB   |

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

### PACKAGE DIMENSIONS



- NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: INCH.
  3. DIMENSION "F" TO CENTER OF LEADS.

| DIM | INCHES    |       | MILLIMETERS |       |
|-----|-----------|-------|-------------|-------|
|     | MIN       | MAX   | MIN         | MAX   |
| A   | 1.760     | 1.780 | 44.70       | 45.21 |
| B   | 1.370     | 1.390 | 34.80       | 35.31 |
| C   | 0.245     | 0.265 | 6.22        | 6.73  |
| D   | 0.017     | 0.023 | 0.43        | 0.58  |
| E   | 0.080     | 0.100 | 2.03        | 2.54  |
| F   | 0.086 BSC |       | 2.18 BSC    |       |
| G   | 1.650 BSC |       | 41.91 BSC   |       |
| H   | 1.290 BSC |       | 32.77 BSC   |       |
| J   | 0.266     | 0.280 | 6.76        | 7.11  |
| K   | 0.125     | 0.165 | 3.18        | 4.19  |
| L   | 0.990 BSC |       | 25.15 BSC   |       |
| N   | 0.390 BSC |       | 9.91 BSC    |       |
| P   | 0.008     | 0.013 | 0.20        | 0.33  |
| Q   | 0.118     | 0.132 | 3.00        | 3.35  |
| R   | 0.535     | 0.555 | 13.59       | 14.10 |
| S   | 0.445     | 0.465 | 11.30       | 11.81 |
| W   | 0.090 BSC |       | 2.29 BSC    |       |

- STYLE 1:  
 PIN 1: RF INPUT  
 2: VDD1  
 3: VDD2  
 4: RF OUTPUT  
 CASE: GROUND

### CASE 301AP-02 ISSUE E

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## REVISION HISTORY

The following table summarizes revisions to this document.

| Revision | Date      | Description  |
|----------|-----------|--|
| 7        | Dec. 2006 | <ul style="list-style-type: none"><li>Added replacement part information, p. 1</li></ul> |

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