

The RF Line

UMTS Band

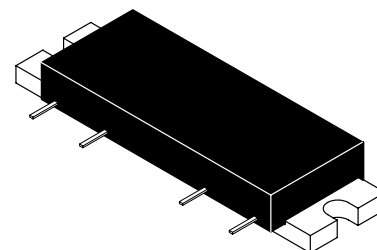
RF Linear LDMOS Amplifier

Designed for Class AB amplifier applications in 50 ohm systems operating in the UMTS frequency band. A silicon FET design provides outstanding linearity and gain. In addition, the excellent group delay and phase linearity characteristics are ideal for digital modulation systems.

- Typical W-CDMA Performance for $V_{DD} = 28$ Volts, $V_{bias} = 8$ Volts, $I_{DQ} = 550$ mA, Channel Bandwidth = 3.84 MHz, Adjacent Channels at ± 5 MHz, ACPR Measured in 3.84 MHz Bandwidth. Peak/Avg. = 8.5 dB @ 0.01% Probability on CCDF, 3GPP Test Model 1, 64 DTCH.
- Adjacent Channel Power: -50 dBc @ 30 dBm, 5 MHz Channel Spacing
- Power Gain: 24 dB Min (@ $f = 2140$ MHz)
- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications

MHPA21010

2110–2170 MHz
10 W, 24 dB
RF HIGH POWER LDMOS AMPLIFIER



CASE 301AP-02, STYLE 3

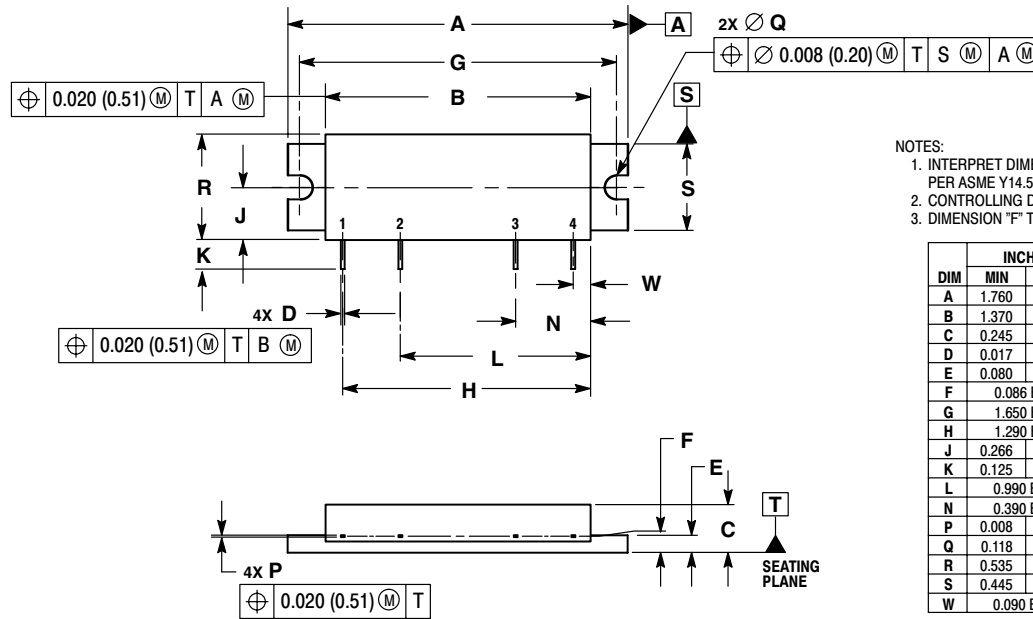
ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

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

ELECTRICAL CHARACTERISTICS ($V_{DD} = 28$ Vdc, $V_{BIAS} \equiv 8$ V Set for Supply Current of 550 mA, $T_C = 25^\circ\text{C}$, 50 Ω System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I_{DD}	—	550	—	mA
Power Gain ($f = 2140$ MHz)	G_p	24	25	—	dB
Gain Flatness ($f = 2110$ – 2170 MHz)	G_F	—	0.2	0.6	dB
Power Output @ 1 dB Comp. ($f = 2140$ MHz)	P_{1dB}	—	41.5	—	dBm
Input VSWR ($f = 2110$ – 2170 MHz)	$VSWR_{in}$	—	1.5:1	2:1	
Noise Figure ($f = 2140$ MHz)	NF	—	—	10	dB
Adjacent Channel Power Rejection @ 30 dBm Avg., 3.84 MHz BW, 5 MHz Channel Spacing	ACPR	—	-55	-50	dBc

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 3:

- PIN 1. RF INPUT
 - VBIAS
 - VDD
 - RF OUTPUT
- CASE: GROUND

CASE 301AP-02 ISSUE C

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