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The RF Line

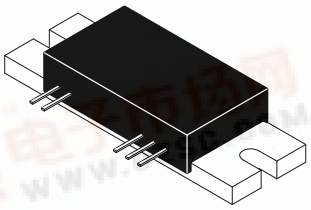
UHF Silicon FET Power Amplifier

Designed specifically for the Pan European Digital Extended EGSM base station applications at 925 – 960 MHz. The MHW930 operates from a 26 volt supply and requires 60 mW of RF input power.

- Specified 26 Volt and 25 °C Characteristics:
  RF Input Power: 60 mW Max
  RF Power Gain: 27 dB Min at 30 W Output Power
  RF Output: 30 Watts Min at 1.0 dB Compression Point
  Efficiency: 44% Min at 30 Watts Output Power
- 50 Ohm Input/Output Impedances

MHW930

30 W
925 – 960 MHz
RF POWER AMPLIFIER



CASE 301AB–02, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_S	28	Vdc
DC Bias Voltage	V_B	28	Vdc
RF Input Power	P_{in}	22	dBm
RF Output Power	P_{out}	50	W
Operating Case Temperature Range	T_C	–10 to +100	°C
Storage Temperature Range	T_{stg}	–30 to +100	°C

ELECTRICAL CHARACTERISTICS (V_S = 26 Vdc; V_{BIAS} = 26 Vdc; T_C = +25°C; 50 Ω system)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	925	—	960	MHz
V_{S1} Quiescent Current (P_{in} = 0 mW)	Iqs1	—	65	—	mA
V_{S2} Quiescent Current (P_{in} = 0 mW)	Iqs2	—	130	—	mA
Power Gain (P_{out} = 30 W) (1)	G_p	27	—	31	dB
Output Power at 1 dB Compression	P1dB	30	35	—	Watts
EFficiency (P_{out} = 30 W) (1)	η	44	49	—	%
Input VSWR	$VSWR_{IN}$	—	—	2:1	
Harmonic 2 f_o (P_{out} = 30 W) (1)	H_2	—	—	–35	dBc
Harmonic 3 f_o (P_{out} = 30 W) (1)	H_3	—	—	–45	dBc
Reverse Intermodulation Distortion ($P_{carrier}$ = 30 W; $P_{interferer}$ at –70 dBc; fi = fc ±600 kHz) (1)	IMR	—	—	–80	dBc
Load Mismatch Stress (P_{out} = 30 W; Load VSWR = 10:1; All Phase Angles)	ψ	No Degradation in Output Power			
Stability (P_{out} = 10 mW – 30 W; Load VSWR = 3:1; All Phase Angles; T_C = –10°C to 85°C)		All Spurious Outputs More than 70 dB Below Desired Signal			

(1) Adjust P_{in} for specified P_{out}.

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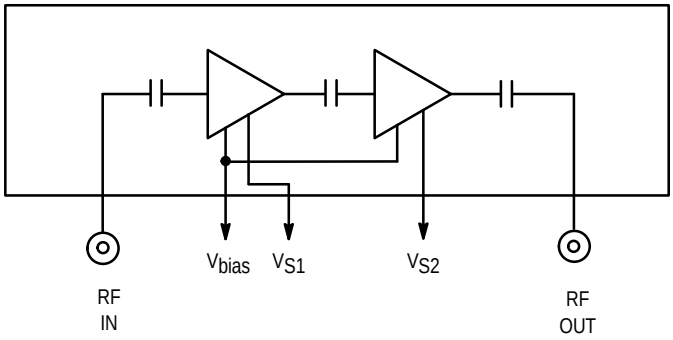
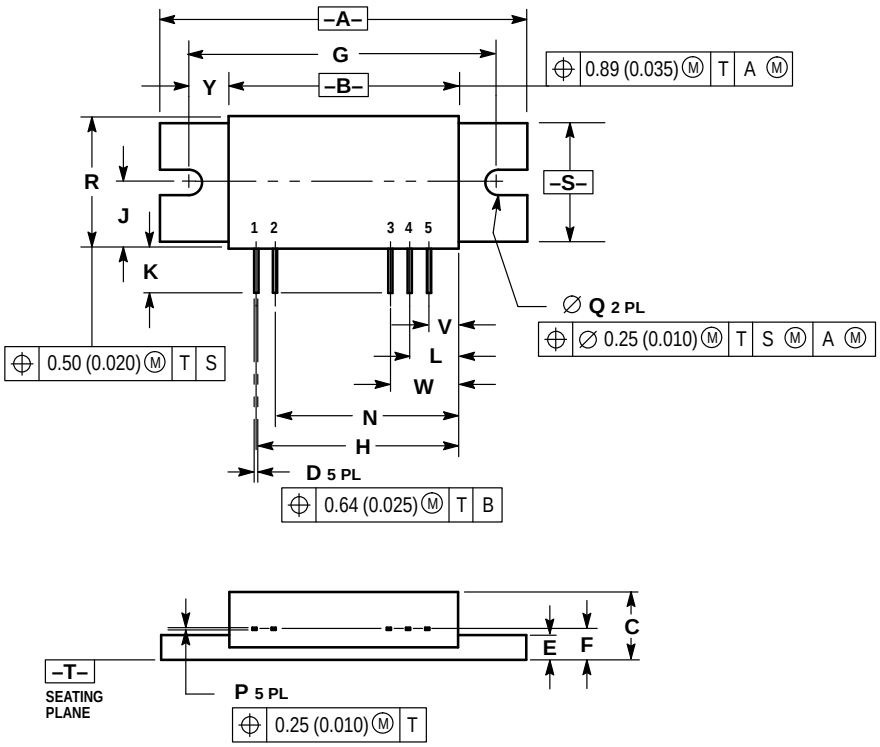


Figure 1. MHW930 Internal Diagram

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION F TO CENTER OF LEADS.
4. REF INDICATES NON–CONTROLLED DIMENSION FOR REFERENCE USE ONLY.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	1.890	1.910	48.01	48.51
B	1.170	1.190	29.72	30.23
C	0.350	0.376	8.89	9.55
D	0.018	0.022	0.46	0.56
E	0.120	0.135	3.05	3.43
F	0.165 BSC		4.19 BSC	
G	1.600 BSC		40.64 BSC	
H	1.055 BSC		26.80 BSC	
J	0.336	0.360	8.53	9.14
K	0.225	—	5.72	—
L	0.255 BSC		6.48 BSC	
N	0.955 BSC		24.26 BSC	
P	0.008	0.012	0.20	0.31
Q	0.151	0.161	3.84	4.09
R	0.685	0.705	17.40	17.91
S	0.598	0.612	15.19	15.55
V	0.155 BSC		3.94 BSC	
W	0.355 BSC		9.02 BSC	
Y	0.210 REF		5.33 REF	

STYLE 1:
PIN 1. RF INPUT
2. +DC (BIAS)
3. +DC (SUPPLY)
4. +DC (SUPPLY)
5. RF OUTPUT
CASE: GROUND

CASE 301AB–02
ISSUE H

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