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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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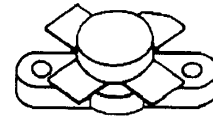
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**MS1076**
**RF & MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**
**Features**

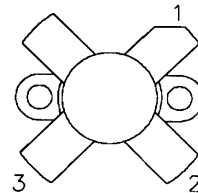
- 30 MHz
- 28 VOLTS
- GOLD METALLIZATION
- $P_{OUT} = 220$  W PEP
- $G_P = 12$  dB GAIN MINIMUM
- COMMON EMITTER CONFIGURATION



.500 4LFL (M174)  
epoxy sealed

**DESCRIPTION:**

The MS1076 is a 28 volt epitaxial NPN silicon planar transistor designed primarily for SSB and VHF communications. This device utilizes an emitter ballasted die geometry for maximum ruggedness and reliability.

**PIN CONNECTION**


1. Collector      3. Base  
2. Emitter      4. Emitter

**ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ )**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector - Base Voltage	70	V
$V_{CEO}$	Collector - Emitter Voltage	35	V
$V_{EBO}$	Emitter - Base Voltage	4.0	V
$I_C$	Device Current	16	A
$P_{DISS}$	Power Dissipation	250	W
$T_J$	Junction Temperature	+200	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}C$

**Thermal Data**

$R_{TH(J-C)}$	Junction - Case Thermal Resistance	0.7	$^{\circ}C/W$
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Rev A: October 2009

**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>70</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	<b>35</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 20 mA</b>	<b>4.0</b>	---	---	<b>V</b>
<b>I<sub>CEO</sub></b>	<b>V<sub>CE</sub> = 30 V</b>	---	---	<b>5</b>	<b>mA</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 35 V</b>	---	---	<b>5</b>	<b>mA</b>
<b>H<sub>F</sub>E</b>	<b>V<sub>CE</sub> = 5 V, I<sub>C</sub> = 7 A</b>	<b>15</b>	---	<b>60</b>	---

**DYNAMIC**

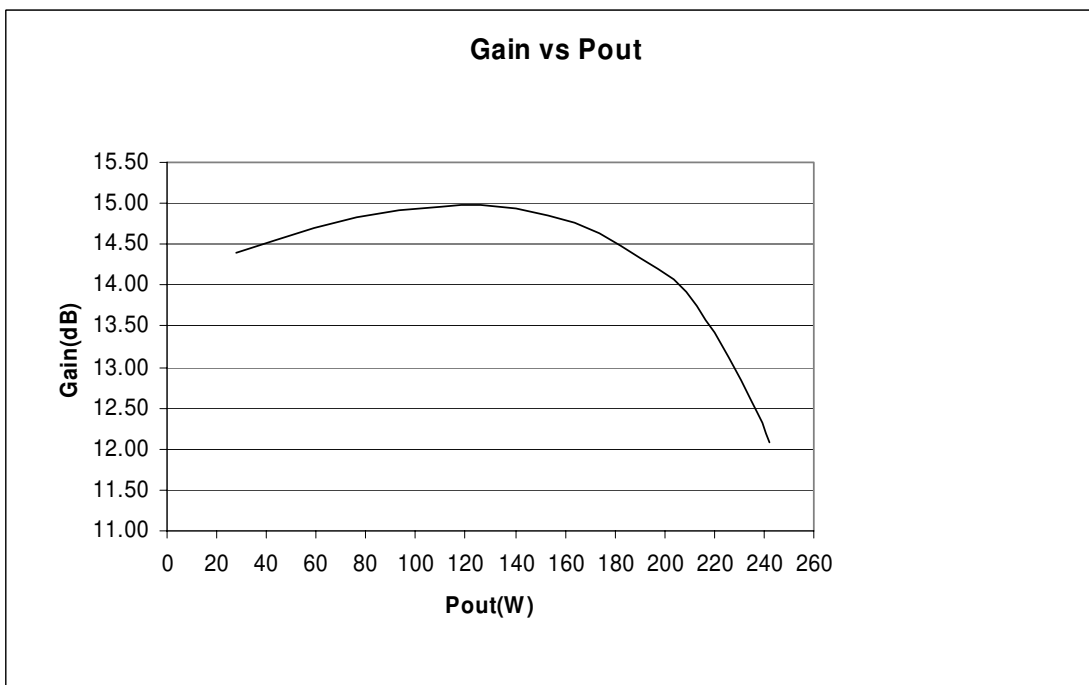
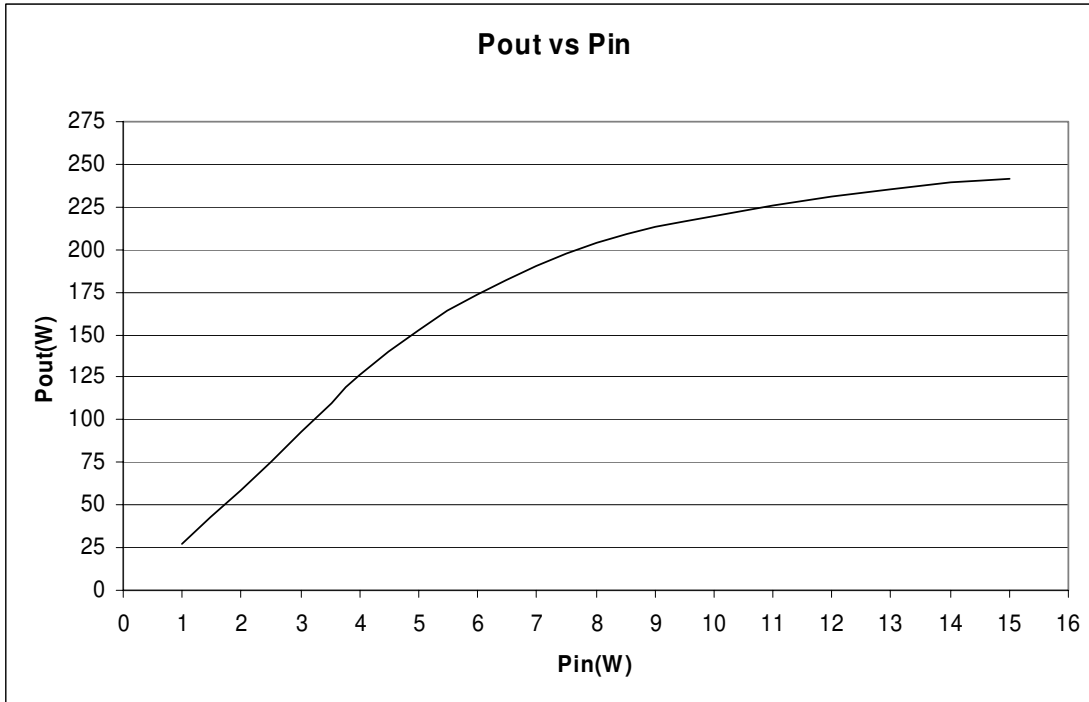
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 30 MHz</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>I<sub>CQ</sub> = 750 mA</b>	<b>220</b>	---	---	<b>WPEP</b>
<b>G<sub>P</sub></b>	<b>f = 30 MHz</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>I<sub>CQ</sub> = 750 mA</b>	<b>12</b>	---	---	<b>dB</b>
<b>η<sub>C</sub></b>	<b>f = 30 MHz</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>I<sub>CQ</sub> = 750 mA</b>	<b>40</b>	---	---	<b>%</b>
<b>IMD</b>	<b>f = 30 MHz</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>I<sub>CQ</sub> = 750 mA</b>	---	---	<b>-30</b>	<b>dBc</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 28 V</b>		---	<b>450</b>	---	<b>pf</b>
<b>Conditions</b>	<b>f1 = 30.000 MHz</b>	<b>f2 = 30.001 MHz</b>					

**HFE BINNING (marked on lid with appropriate letter):**

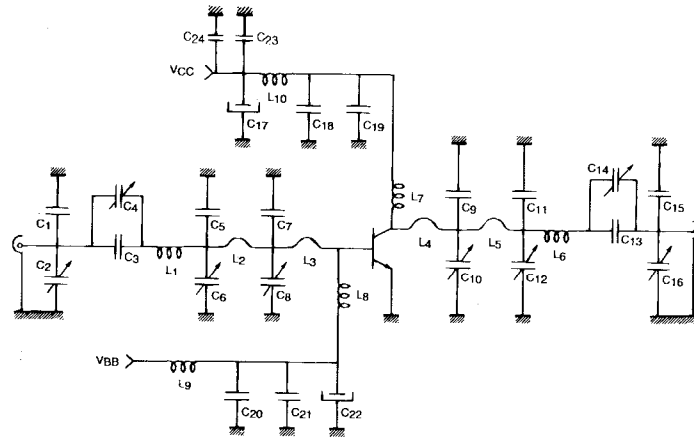
<b>A = 15-19</b>	<b>D = 27-32</b>	<b>G = 45-50</b>
<b>B = 19-22.5</b>	<b>E = 32-38</b>	<b>H = 50-55</b>
<b>C = 22.5-27</b>	<b>F = 38-45</b>	<b>I = 55-60</b>

**IMPEDANCE DATA**

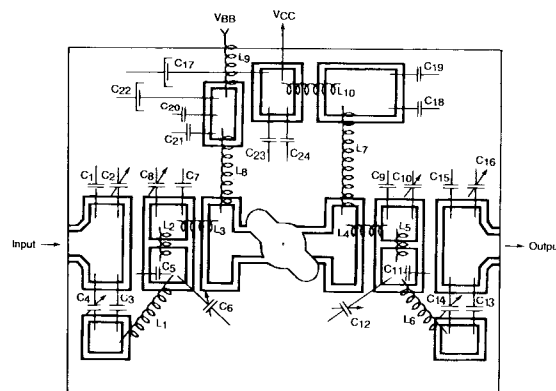
FREQ	Z <sub>IN</sub>	Z <sub>CL</sub>
<b>30 MHz</b>	<b>1.2 + j0.41</b>	<b>1.25 + j1.92</b>

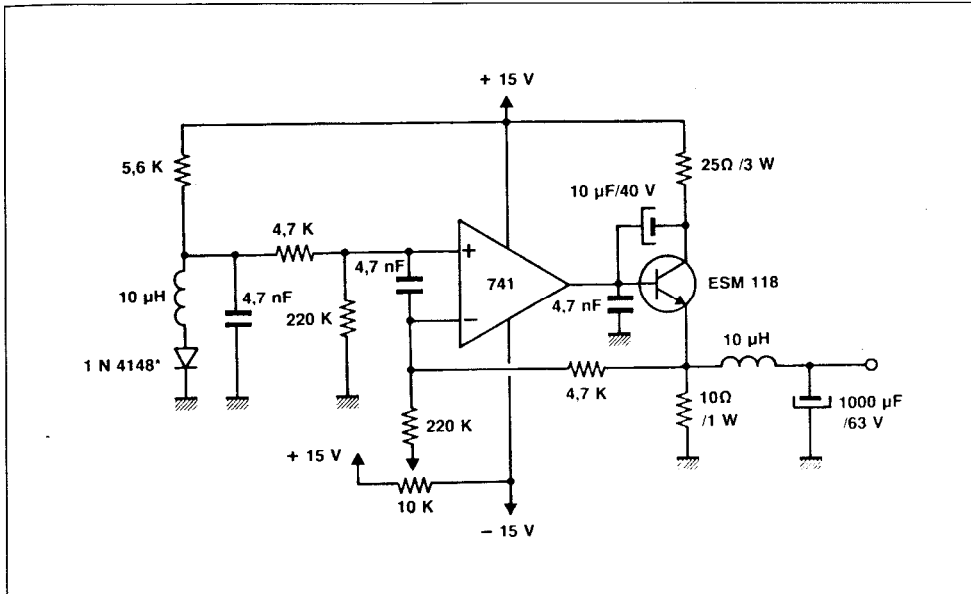
**TYPICAL PERFORMANCE**



**TEST CIRCUIT**
**TEST CIRCUIT**


C1 : 180pF	L1 : 3 Turns, Diameter 10mm, 1.3mm Wire, Length 10mm
C2, C4, C6, C8, C10, C12	L2, L5 : Hair Pin Copper foil 40 x 5mm, 0.2mm Thick
C14, C16 : Arco 428	L3, L4 : Hair Pin Copper Foil 10 x 5mm, 0.2mm Thick
C3 : 820pF	L6 : 5 Turns, Diameter 10mm, 1.3mm Wire, Length 15mm
C5, C13 : 680pF	L7 : 3 Turns, Diameter 10mm, 1.3mm Wire, Length 25mm
C7, C11 : 1.2nF	L8 : Choke
C9 : 1.5nF	L9 : Choke
C17, C22 : 470μF, 40V	L10 : Choke
C18 : 10nF	
C19, C21	
C23 : 1nF	
C20, C24 : 100nF, 63V	



**BIAS CIRCUIT**

**MS1076**
**PACKAGE MECHANICAL DATA**
