Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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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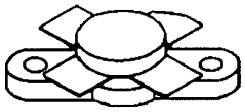
MS1051

RF & MICROWAVE TRANSISTORS
HF SSB APLICATIONS

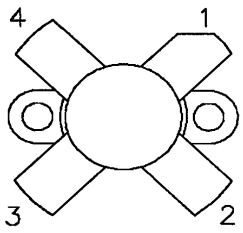
Features

- **30 MHz**
- **12.5 VOLTS**
- **P_{OUT} = 100 WATTS**
- **G_{PE} = 12.0 dB MINIMUM**
- **IMD = –30 dBc**
- **GOLD METALLIZATION**
- **COMMON EMITTER CONFIGURATION**



.500 4LFL (M174)
epoxy sealed

PIN CONNECTION



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

DESCRIPTION:

The MS1051 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for HF communications. This device utilizes state-of-the-art diffused emitter ballasting to achieve extreme ruggedness under severe operating conditions.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25 °C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	20	A
P_{DISS}	Power Dissipation	290	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage TEmperature	-65 to +150	°C

THERMAL DATA

$R_{TH(J-C)}$	Thermal Resistance Junction-case	0.6	°C/W

Revision B, January 2010

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 100mA	I_E = 0mA	36	---	---	V
BV_{CES}	I_C = 100mA	V_{BE} = 0V	36	---	---	V
BV_{CEO}	I_C = 100mA	I_B = 0mA	18	---	---	V
BV_{EBO}	I_E = 20mA	I_C = 0mA	4.0	---	---	V
I_{CES}	V_{CE} = 15V	I_C = 0mA	---	---	20	mA
h_{FE}	V_{CE} = 5V	I_C = 5mA	10	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 30 MHz	V_{CE} = 12.5 V	I_{CQ} = 150mA	100	---	---	W
G_P	f = 30 MHz	V_{CE} = 12.5 V	I_{CQ} = 150mA	11	13	---	dB
IMD_3*	P_{OUT} = 100 W PEP	V_{CE} = 12.5 V	I_{CQ} = 150mA	---	---	-30	dBc
C_{OB}	f = 1 MHz	V_{CB} = 12.5 V		---	400	---	pf

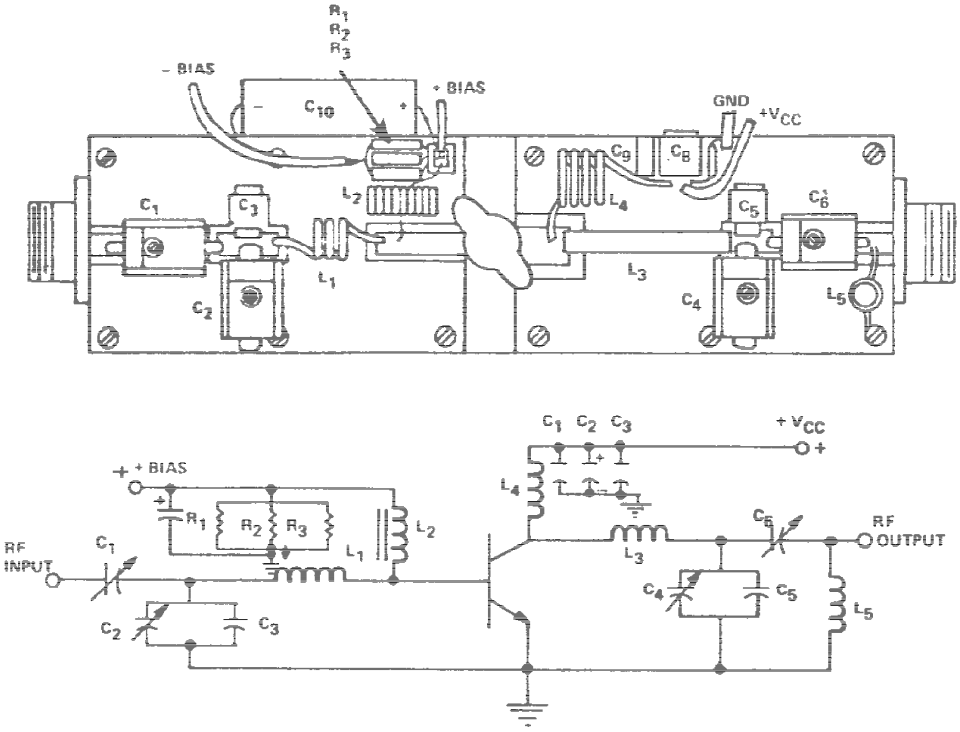
Conditions: f1 = 30.000MHz f2 = 30.001MHz

IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
30 MHz	0.57 + j 0.78	0.80 + j 0.43

P_{OUT} = 100 WPEP, V_{CE} = 12.5 V

TEST CIRCUIT



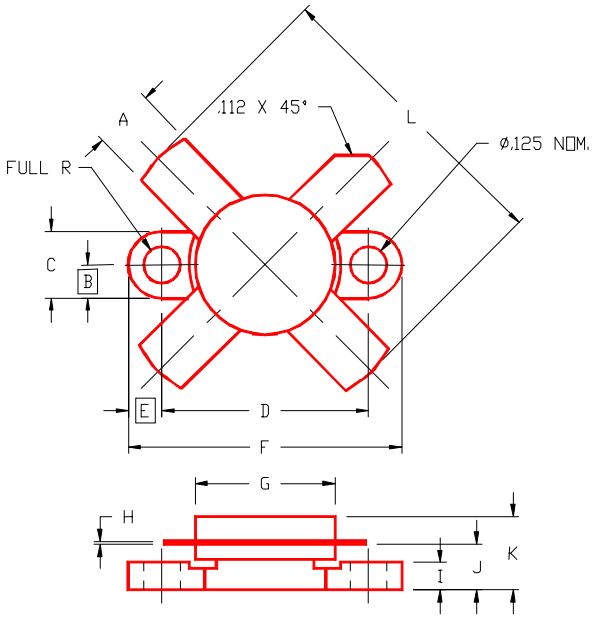
C1 : 9 - 180pF Arco 463
C2 : 5 - 380pF Arco 465
C3 : 200pF Arco 465
C4, C6 : 170pF Arco 469
C7 : 0.1µF Ceramic Disc
C5, C8 : 1000pF Unelco
C9 : 10µF Electrolytic, 35Vdc
C10 : 1000µF Electrolytic, 35Vdc

L1 : 2 1/2 Turns, #14 AWG, I.D. Loose Wound
L2 : 16 Turns, #16 AWG, Enameled Wire on Micrometals Torroid #T-94
L3 : Copper Strap 1/4" Widht, Length 1 1/2", Height 1/2"
L4 : 4 Turns, #16 AWG, Enameled Wire 3/8" I.D.
L5 : 5 Turns, #18 AWG on 1/4" I.D. Coil Form Length 1/2", Ferrite Slug

R1, R2, R3 : 1.5 Ohm, 1 Watt Carbon

MS1051

PACKAGE MECHANICAL DATA



PACKAGE STYLE M174

	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.090/2,29	.110/2,79
B	.125/3,18		J	.160/4,06	.175/4,45
C	.245/6,22	.255/6,48	K		.280/7,11
D	.720/18,28	.730/18,54	L		1.050/26,67
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			