ADVANCED POWER TECHNOLOGY RF®

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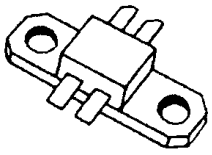
MS1452

RF & MICROWAVE TRANSISTORS
800-900 MHz BASE STATION APPLICATIONS



.250 x .320 4LFL (M156)
epoxy sealed

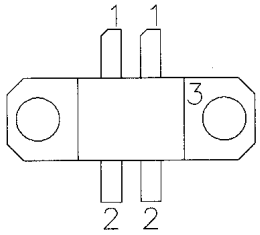
Features

- 800-900 MHz
- 24 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- CLASS AB LINEAR OPERATION
- P_{OUT} = 30 W MINIMUM
- G_P = 7.5 dB

DESCRIPTION:

The MS1452 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in cellular base station application.

PIN CONNECTION



1. Collector
2. Base
3. Emitter

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	48	V
V_{CES}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	4.0	V
P_{DISS}	Power Dissipation	43	W
I_C	Device Current	5	A
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	3.0	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

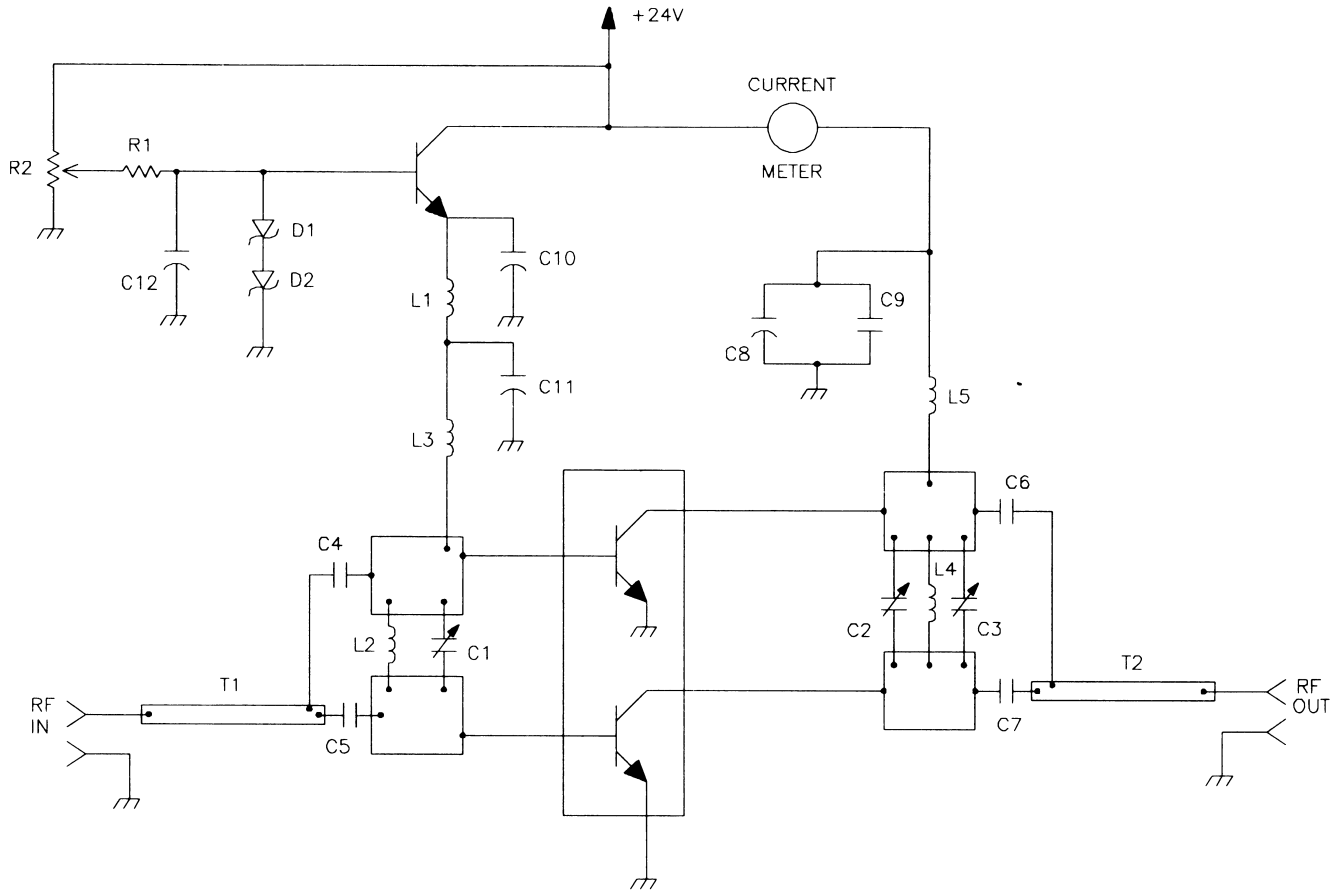
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 50 mA	I_E = 0 mA	48	50	---	V
BV_{CEO}	I_C = 20 mA	I_B =0 mA	25	30	---	V
BV_{EBO}	I_E = 5 mA	I_C = 0 mA	3.5	4.0	---	V
I_{CBO}	V_{CB} = 24 V	I_E = 0 mA	---	---	1.0	mA
HFE	V_{CE} = 5 V	I_C = 100mA	20	---	100	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 960 MHz	P_{IN} = 5.3 W	V_{CC} =24V	30	---	---	W
G_P	f = 960 MHz	P_{IN} = 5.3 W	V_{CC} =24V	7.5	---	---	dB
η_C	f = 960 MHz	P_{IN} = 5.3 W	V_{CC} =24V	45	50	---	%
C_{OB}	f =1 MHz	V_{CB} =24V		---	20	24	pF

Conditions: I_{CQ} = 150 mA

TEST CIRCUIT



C1, C2, C3 : 0.8 - 8pF Variable Capacitors
C4, C5, C6, C7 : 62pF
C8 : 22µF
C9 : 180pF
C10 : 47µF, 63V
C11 : 180pF
C12 : 10µF, 63V

D1, D2 : SD1423 Devices

L1, L2 : #22 AWG with Ferrite Core
L3 : 4 Turns, #22 AWG
L4 : 2 Turns, #22 AWG
L5 : 5 Turns, #22 AWG

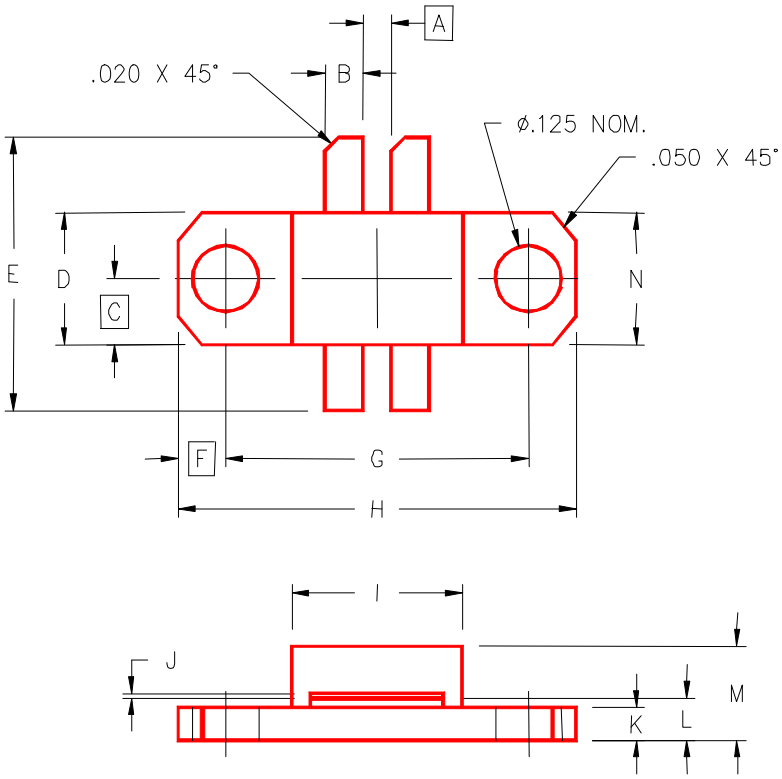
T1, T2 : λ /4 Transformers

Material: Epsilam 10, Er = 10.5, Height = .050"

MS1452

PACKAGE MECHANICAL DATA

PACKAGE STYLE M156



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.060/1,52		I	.315/8,00	.325/8,26
B	.055/1,40	.065/1,65	J	.002/0,05	.006/0,15
C	.124/3,15		K	.055/1,40	.065/1,65
D	.243/6,17	.253/6,43	L	.075/1,91	.095/2,41
E	.635/16,13	.665/16,89	M		.190/4,83
F	.092/2,34		N	.245/6,22	.255/6,48
G	.555/14,10	.565/14,35			
H	.739/18,77	.749/19,02			