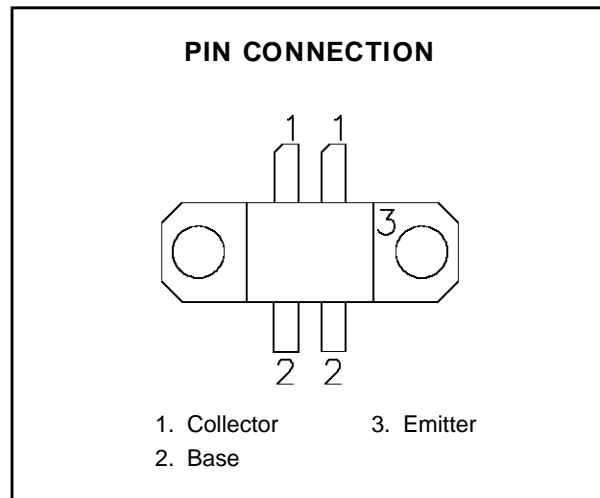
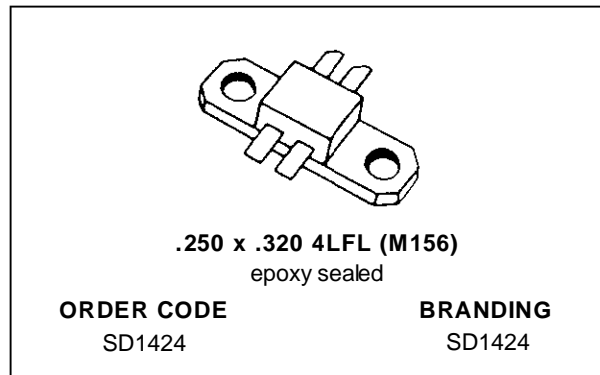


RF & MICROWAVE TRANSISTORS 800-900 MHz BASE STATION APPLICATIONS

- 800 - 900 MHz
- 24 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- CLASS AB LINEAR OPERATION
- $P_{OUT} = 30 \text{ W MIN. WITH } 7.5 \text{ dB GAIN}$


DESCRIPTION

The SD1424 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.

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

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
I_C	Device Current	4	A
P_{DISS}	Power Dissipation	87.5	W
T_J	Junction Temperature	+200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

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THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2.0	$^{\circ}\text{C/W}$
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SD1424

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 50mA	I _E = 0mA	48	50	—	V
BV _{CEO}	I _C = 20mA	I _B = 0mA	25	30	—	V
BV _{EBO}	I _E = 5mA	I _C = 0mA	3.5	4.0	—	V
I _{CBO}	V _{CB} = 24V	I _E = 0mA	—	—	1.0	mA
h _{FE}	V _{CE} = 10V	I _C = 100mA	20	—	100	—

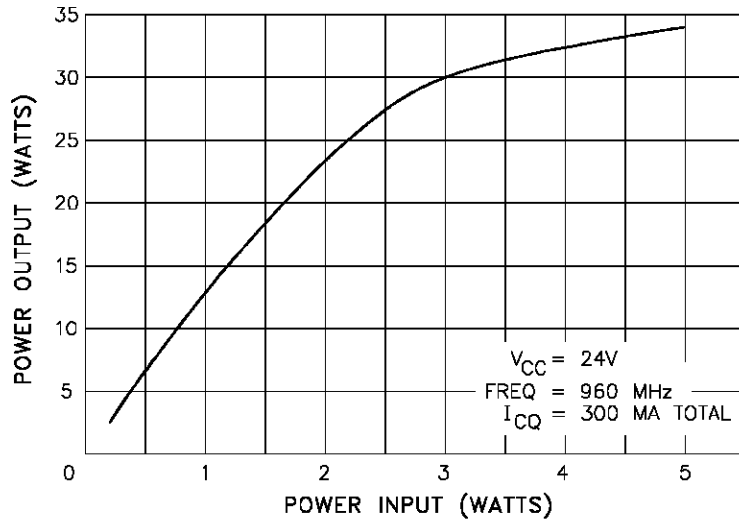
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 960 MHz	P _{IN} = 5.3 W	V _{CC} = 24 V	30	—	—	W
G _P	f = 960 MHz	P _{OUT} = 30 W	V _{CC} = 24 V	7.5	—	—	dB
η _c	f = 960 MHz	P _{OUT} = 30 W	V _{CC} = 24 V	45	50	—	%
C _{OB}	f = 1 MHz	V _{CB} = 24 V	(each side)	—	20	24	pF

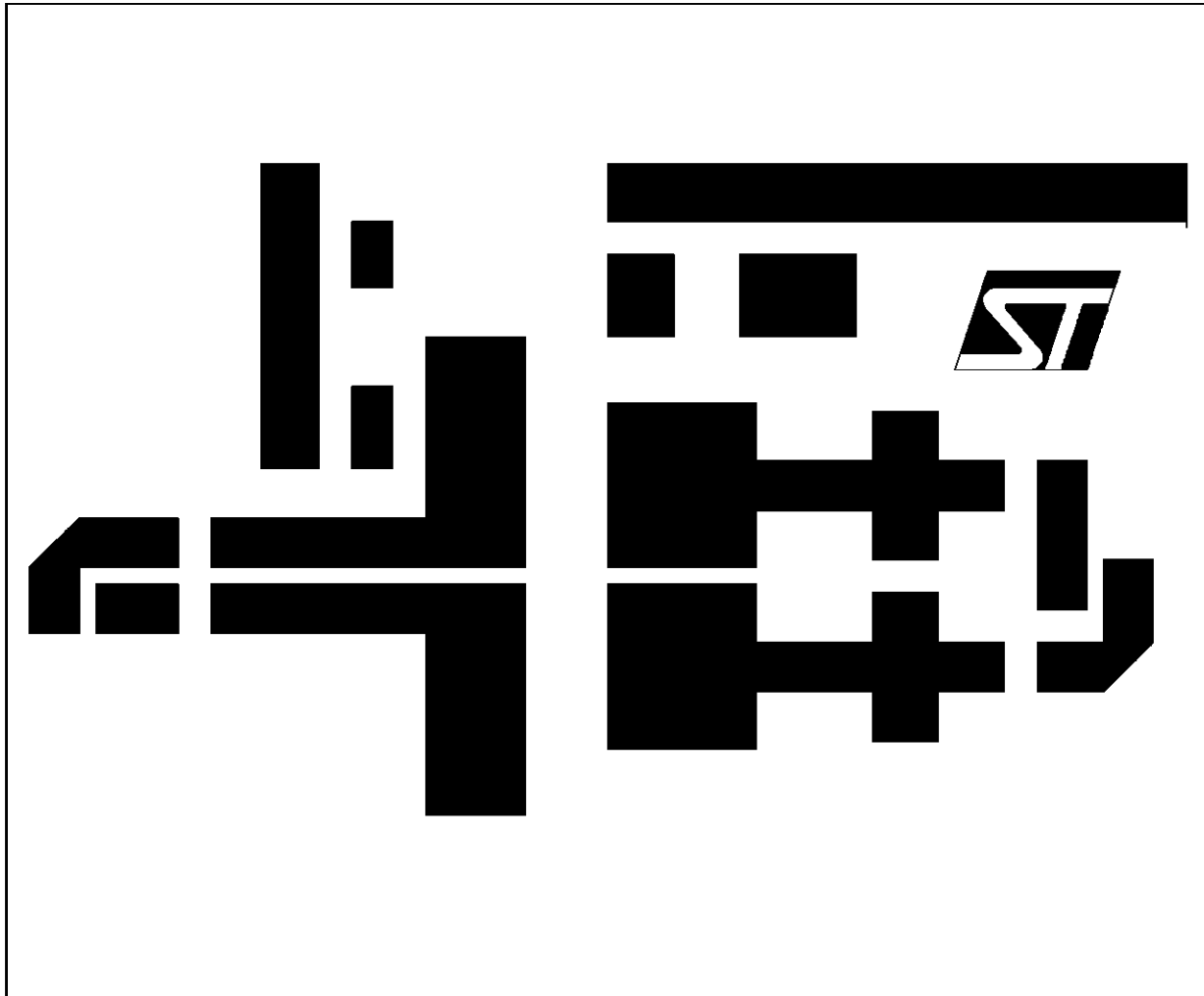
Note: I_{CQ} = 150mA

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT

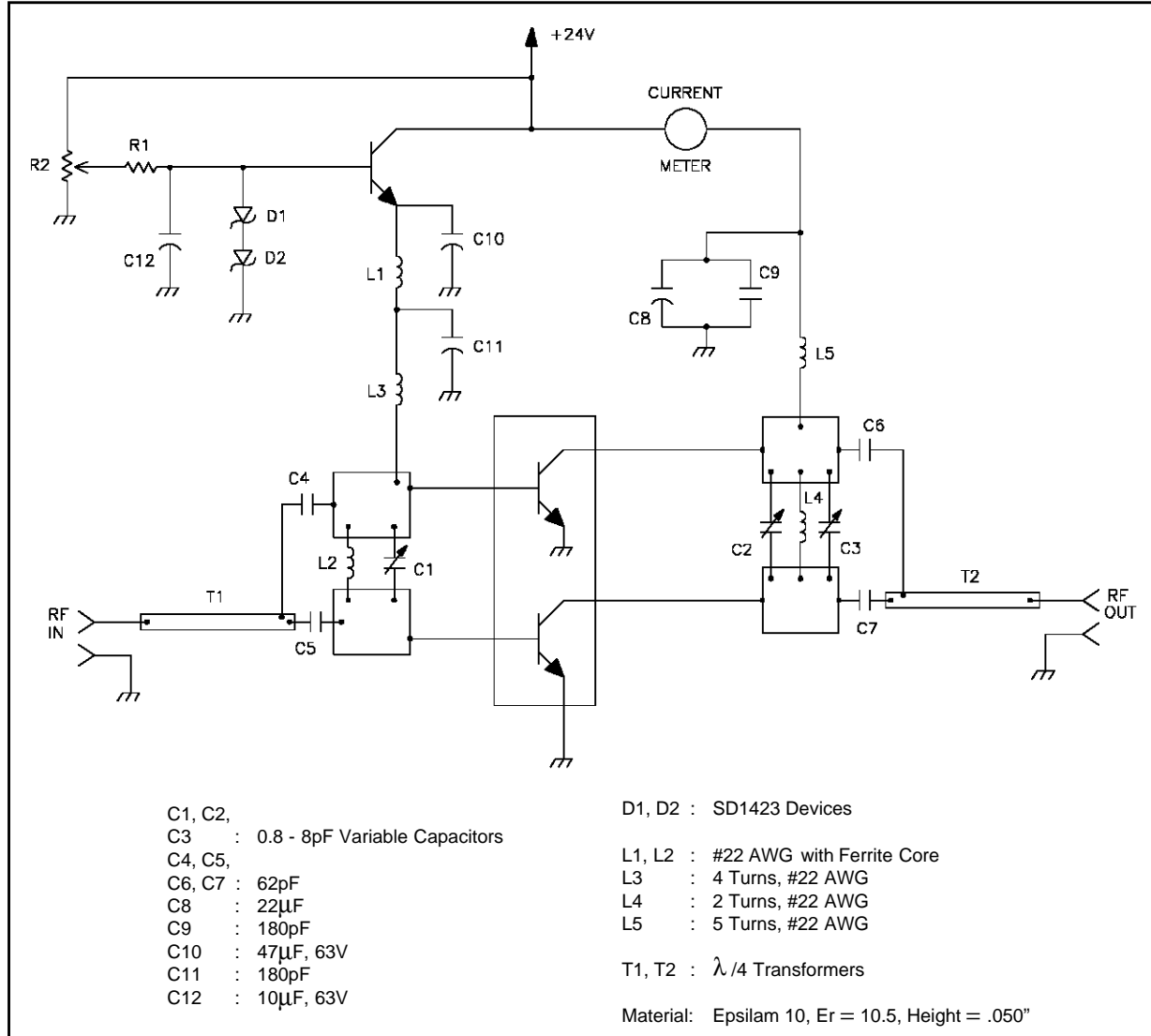


TEST CIRCUIT LAYOUT



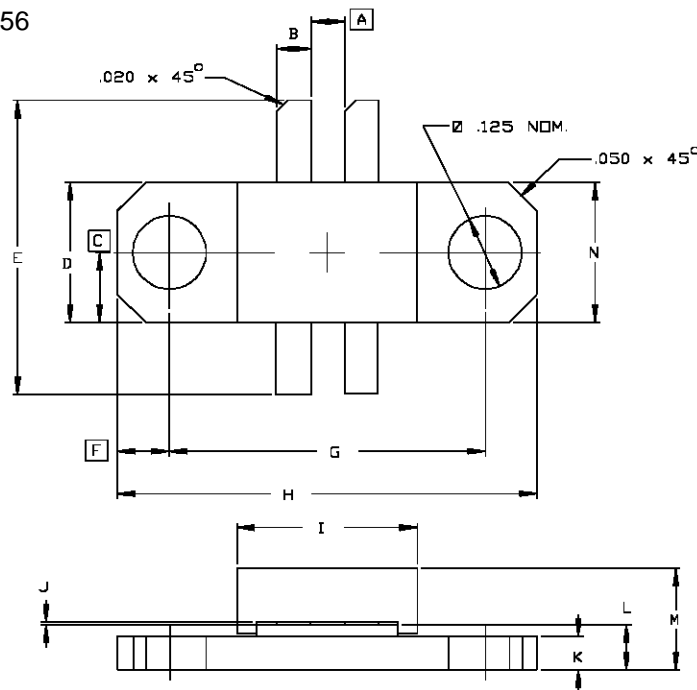
SD1424

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0156



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.060/1,52		K	.055/1,40	.065/1,65
B	.055/1,40	.065/1,65	L	.075/1,91	.095/2,41
C	.124/3,15		M	.190/4,83	
D	.243/6,17	.253/6,43	N	.245/6,22	.257/6,53
E	.635/16,13	.665/16,89			
F	.092/2,34				
G	.555/14,10	.565/14,35			
H	.739/18,77	.749/19,02			
I	.315/8,00	.327/8,31			
J	.002/0,05	.006/0,15			

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