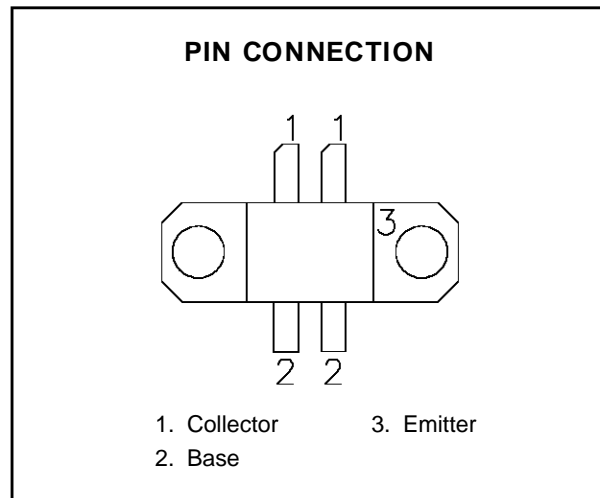
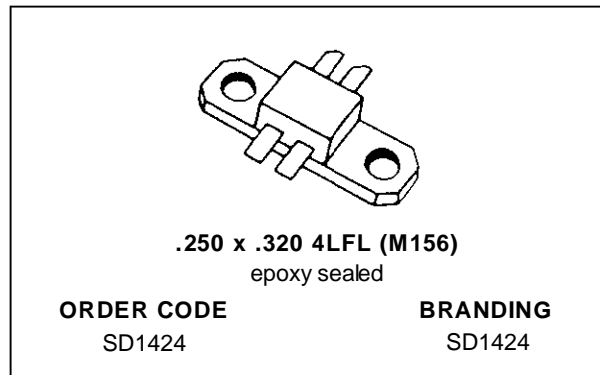


## RF & MICROWAVE TRANSISTORS 800-900 MHz BASE STATION APPLICATIONS

- 800 - 900 MHz
- 24 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- CLASS AB LINEAR OPERATION
- P<sub>OUT</sub> = 30 W MIN. WITH 7.5 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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	48	V
V <sub>CES</sub>	Collector-Emitter Voltage	45	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	4	A
P <sub>DISS</sub>	Power Dissipation	87.5	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	2.0	°C/W
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# SD1424

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

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 50mA	I <sub>E</sub> = 0mA	48	50	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 20mA	I <sub>B</sub> = 0mA	25	30	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5mA	I <sub>C</sub> = 0mA	3.5	4.0	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 24V	I <sub>E</sub> = 0mA	—	—	1.0	mA
h <sub>FE</sub>	V <sub>CE</sub> = 10V	I <sub>C</sub> = 100mA	20	—	100	—

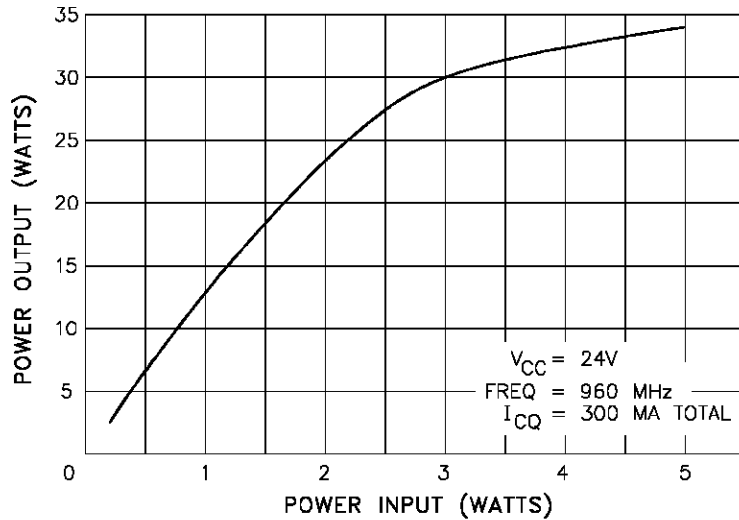
### DYNAMIC

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

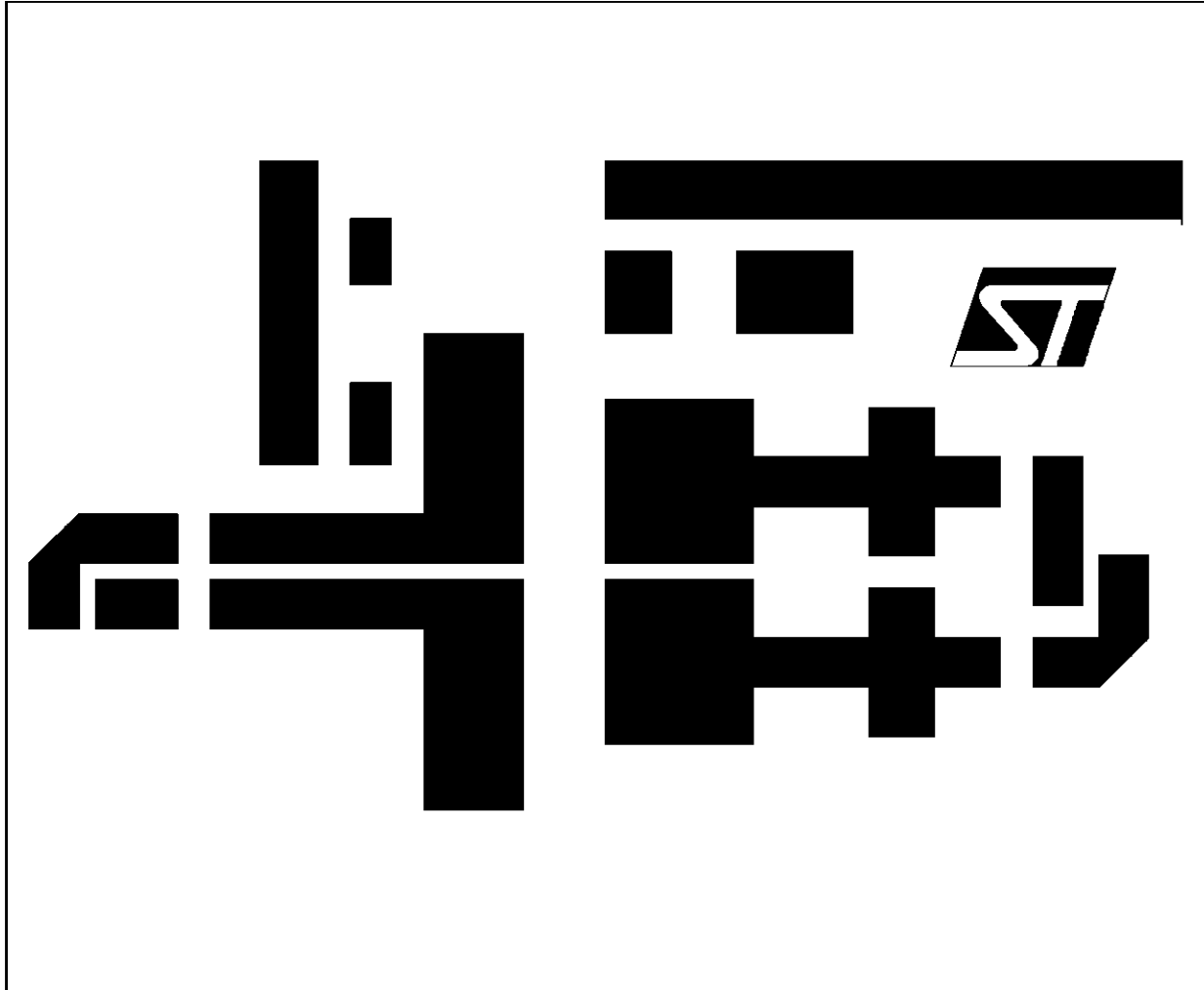
Note: I<sub>CQ</sub> = 150mA

### TYPICAL PERFORMANCE

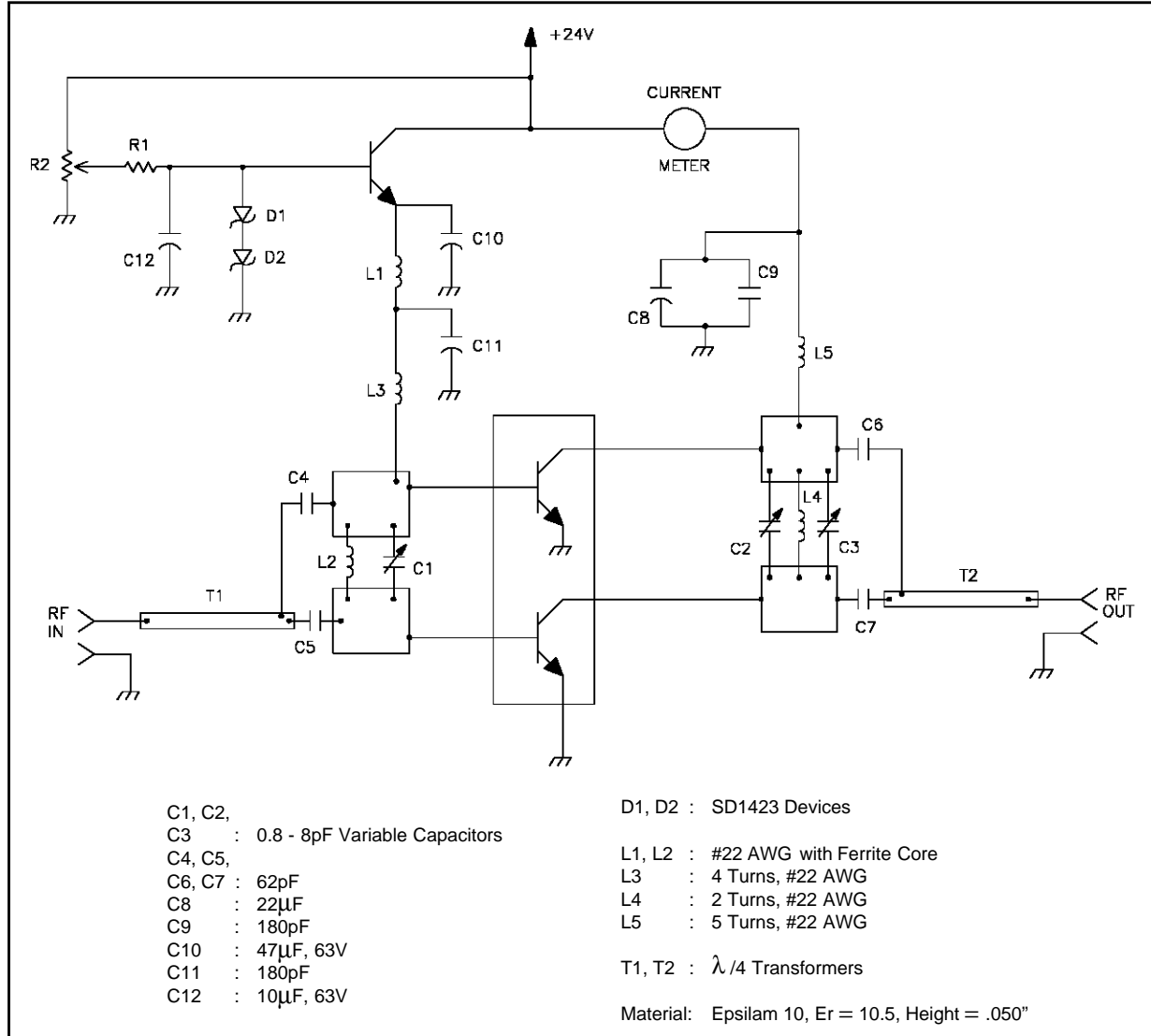
POWER OUTPUT vs POWER INPUT



TEST CIRCUIT LAYOUT

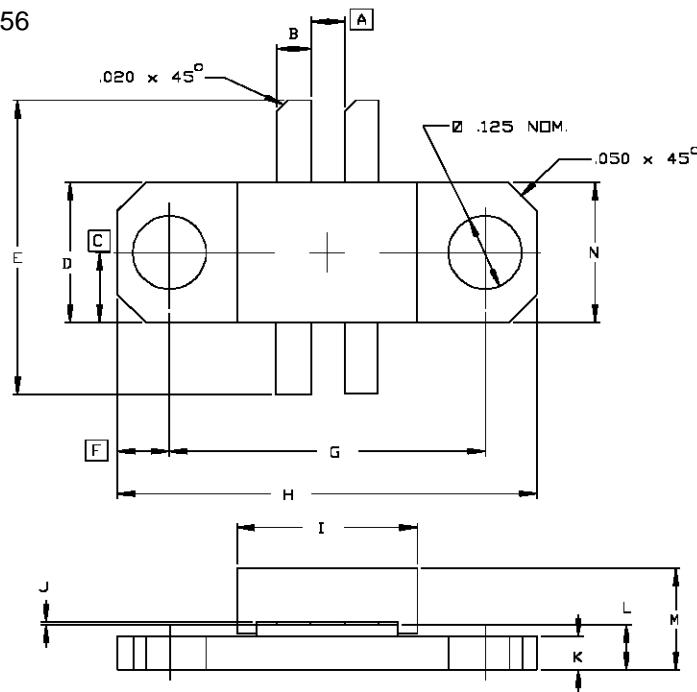


TEST CIRCUIT



## 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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