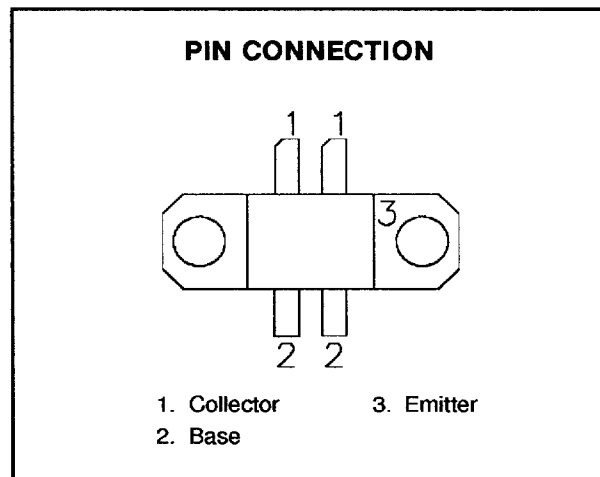
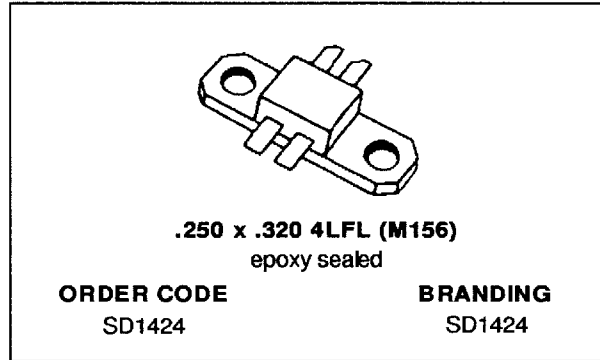


RF & MICROWAVE TRANSISTORS
800-900 MHz BASE STATION APPLICATIONS

- 800 - 900 MHz
- 24 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- CLASS AB LINEAR OPERATION
- P_{OUT} = 30 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_{case} = 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
I _C	Device Current	4	A
P _{DISS}	Power Dissipation	87.5	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	2.0	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

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	—

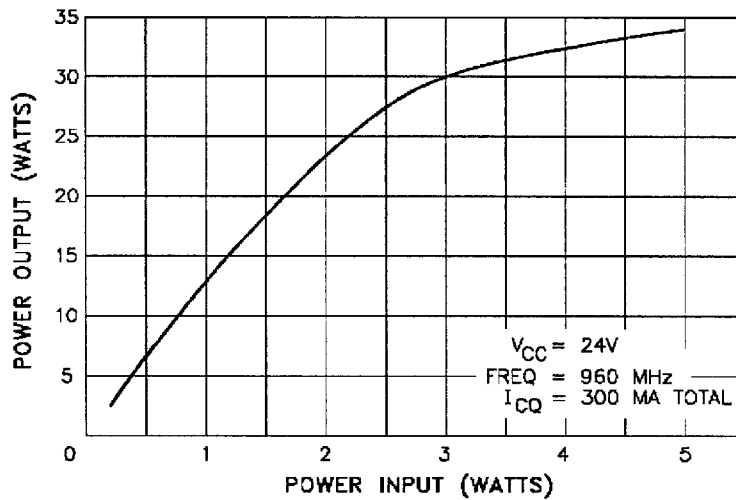
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 960\text{ MHz}$	$P_{IN} = 5.3\text{ W}$	$V_{CC} = 24\text{ V}$	30	—	—	W
G_P	$f = 960\text{ MHz}$	$P_{OUT} = 30\text{ W}$	$V_{CC} = 24\text{ V}$	7.5	—	—	dB
η_c	$f = 960\text{ MHz}$	$P_{OUT} = 30\text{ W}$	$V_{CC} = 24\text{ V}$	45	50	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 24\text{ V}$	(each side)	—	20	24	pF

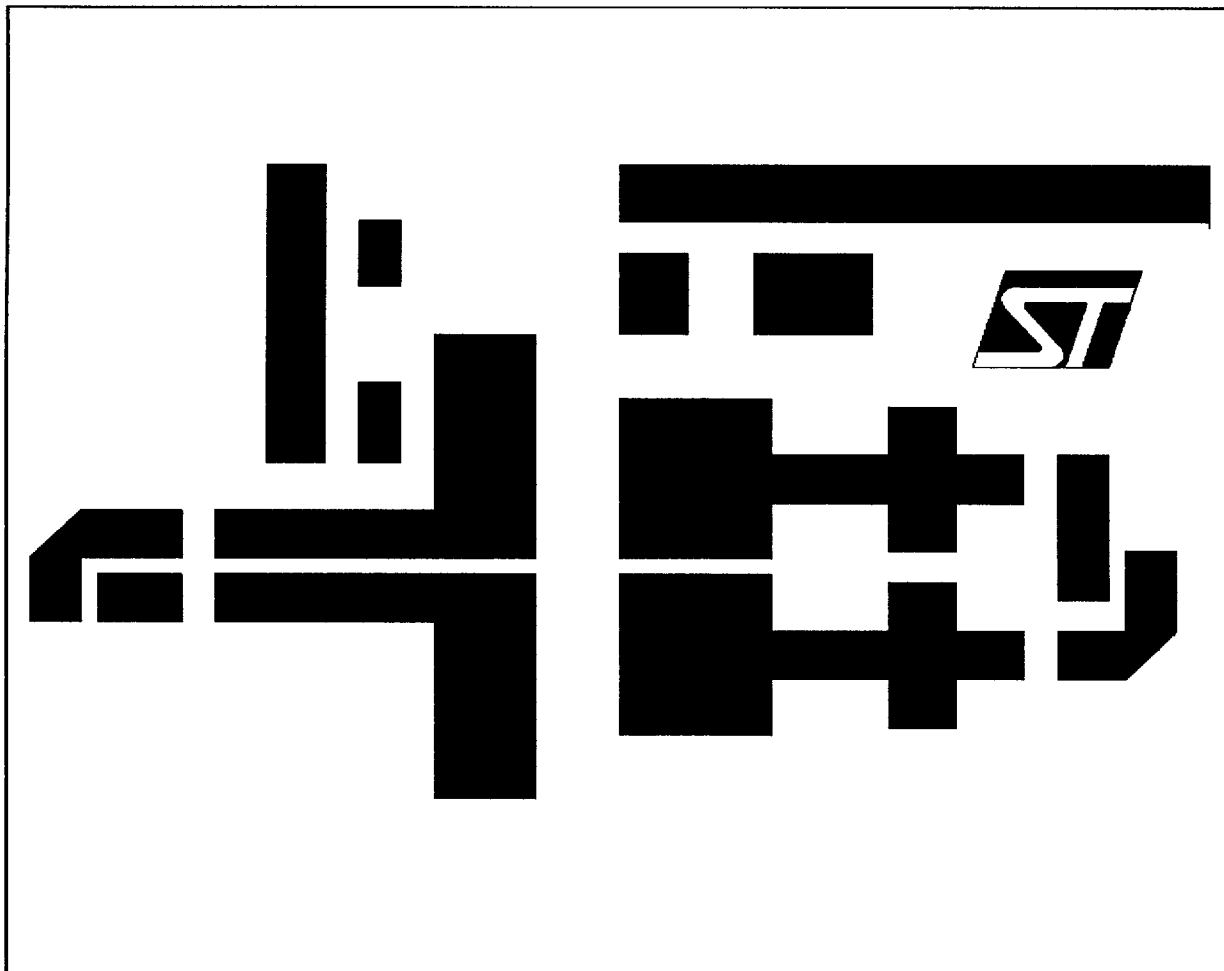
Note: $I_{CQ} = 150mA$

TYPICAL PERFORMANCE

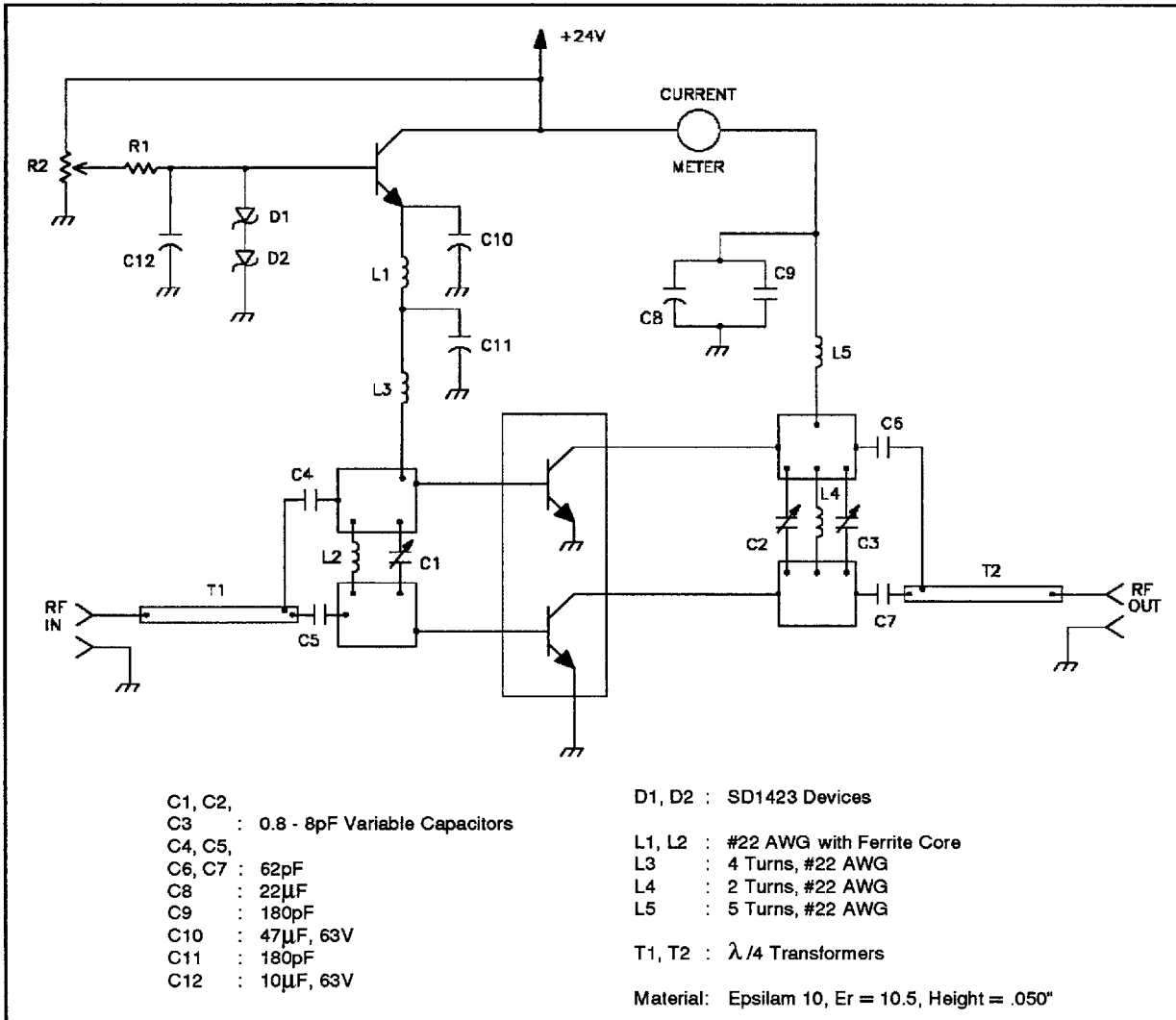
POWER OUTPUT vs POWER INPUT



TEST CIRCUIT LAYOUT

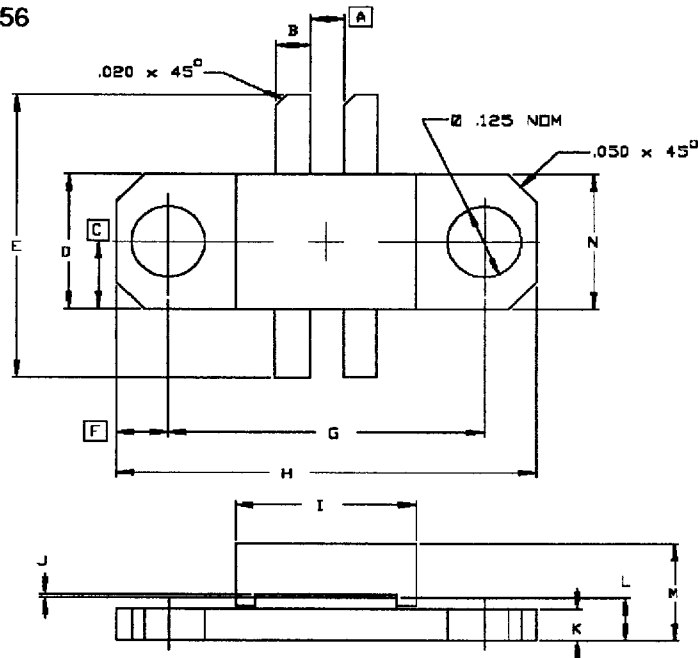


TEST CIRCUIT



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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