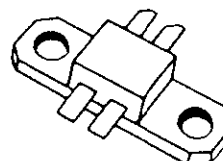


RF & MICROWAVE TRANSISTORS 800-900 MHz BASE STATION APPLICATIONS

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



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

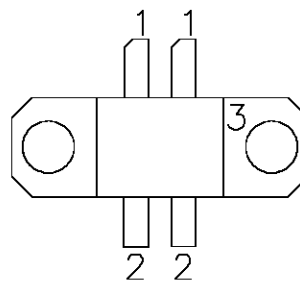
ORDER CODE
SD1424

BRANDING
SD1424

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.

PIN CONNECTION



1. Collector 3. Emitter
2. Base

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	$^{\circ}\text{C}$

THERMAL DATA

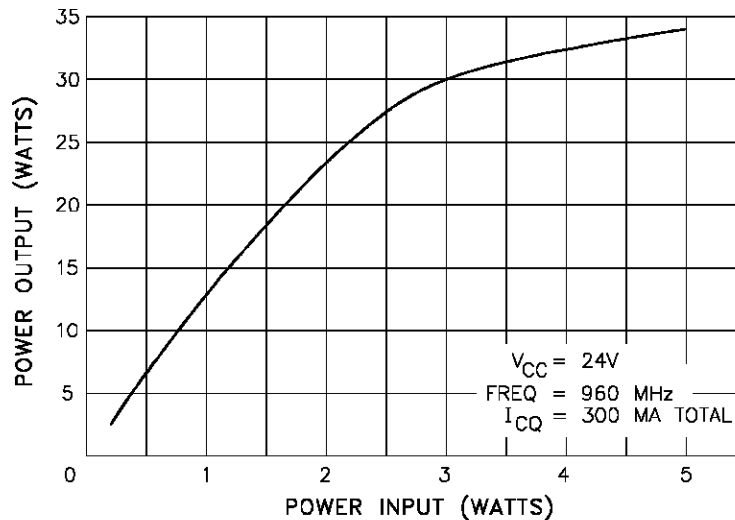
$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2.0	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

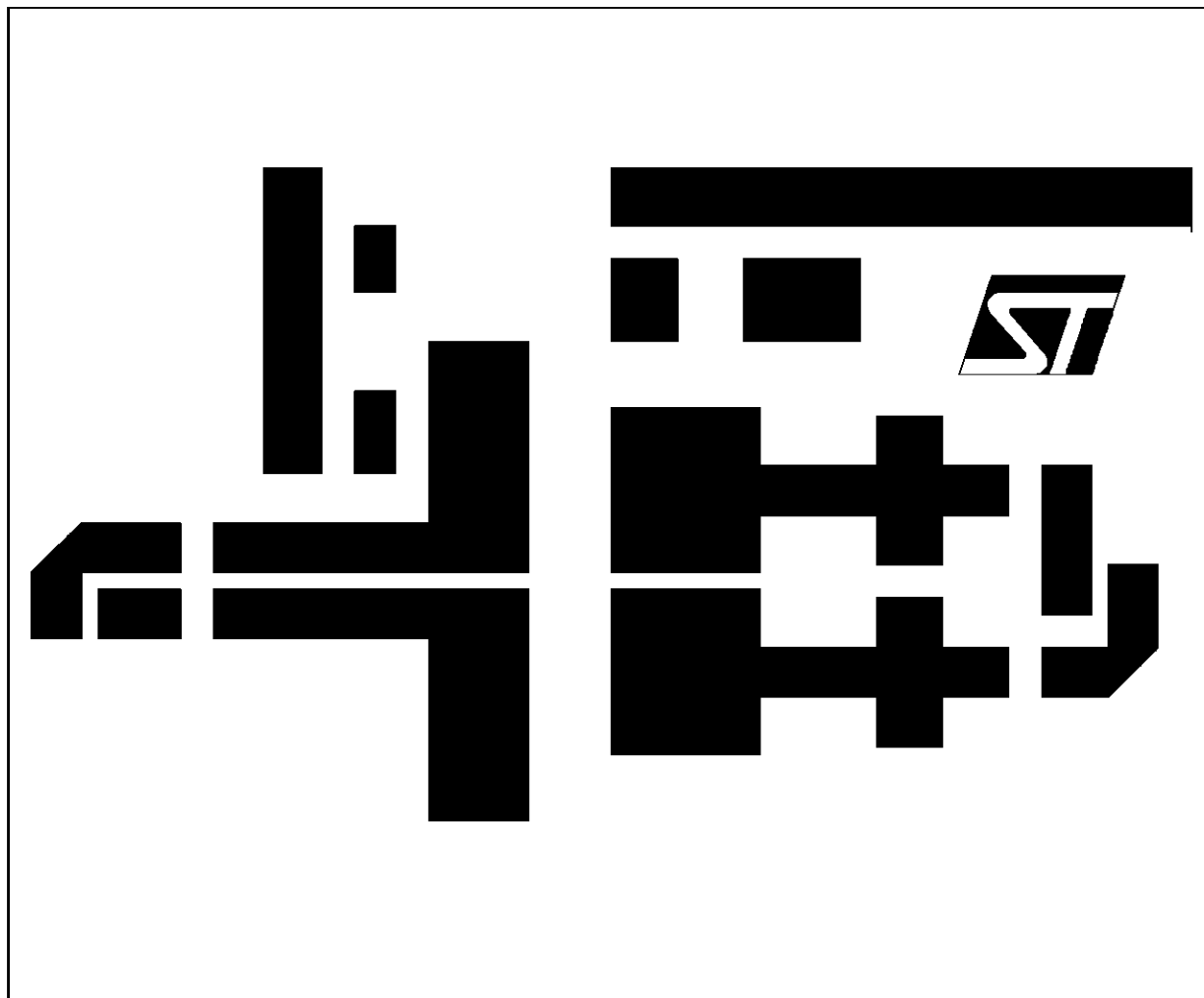
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{E}} = 0\text{mA}$	48	50	—	V
BV_{CEO}	$I_{\text{C}} = 20\text{mA}$	$I_{\text{B}} = 0\text{mA}$	25	30	—	V
BV_{EBO}	$I_{\text{E}} = 5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	4.0	—	V
I_{CBO}	$V_{\text{CB}} = 24\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	1.0	mA
h_{FE}	$V_{\text{CE}} = 10\text{V}$	$I_{\text{C}} = 100\text{mA}$	20	—	100	—

DYNAMIC

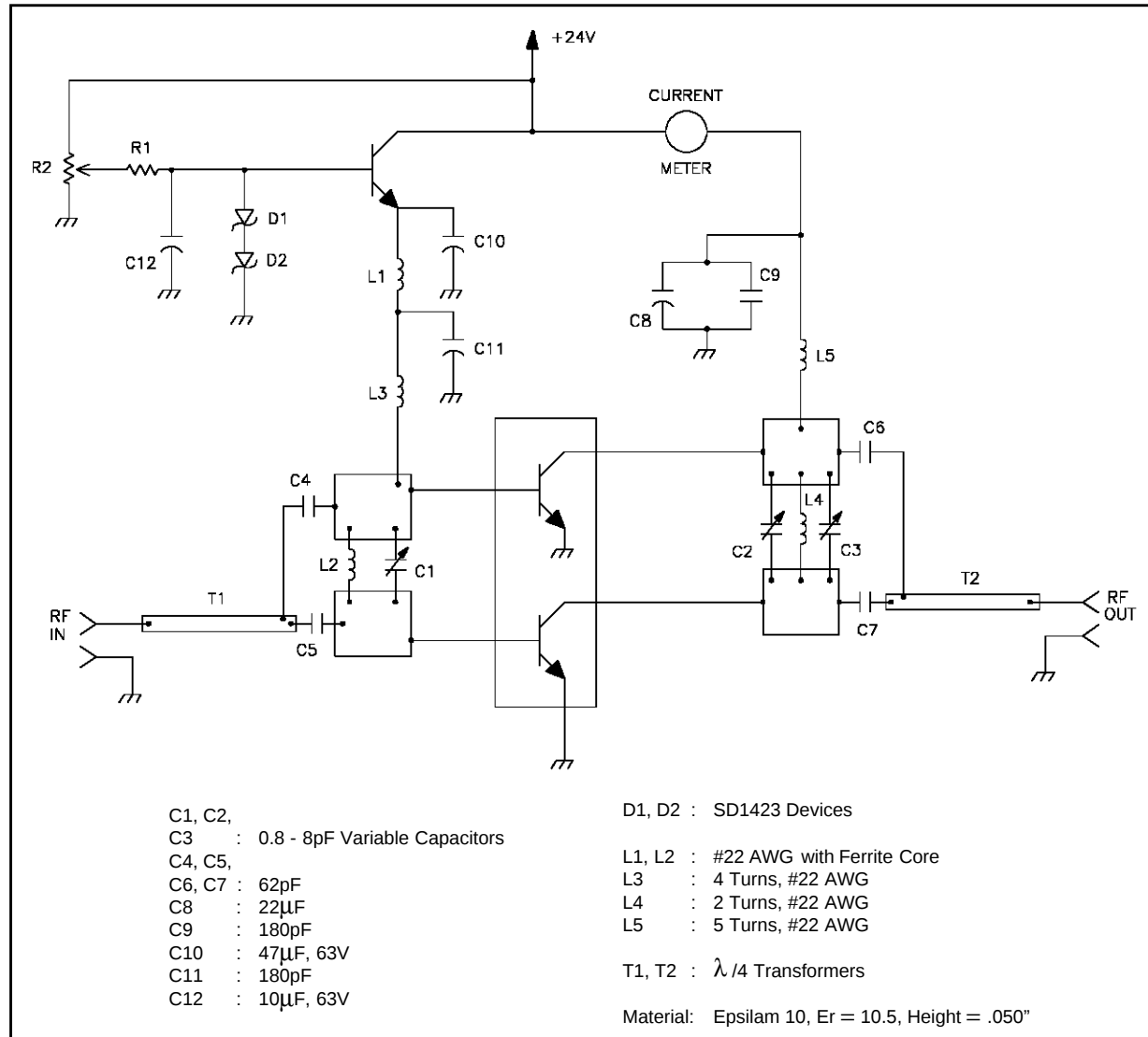
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 960\text{ MHz}$	$P_{\text{IN}} = 5.3\text{ W}$	$V_{\text{CC}} = 24\text{ V}$	30	—	—	W
G_{P}	$f = 960\text{ MHz}$	$P_{\text{OUT}} = 30\text{ W}$	$V_{\text{CC}} = 24\text{ V}$	7.5	—	—	dB
η_{C}	$f = 960\text{ MHz}$	$P_{\text{OUT}} =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

Note: $I_{\text{CQ}} = 150\text{mA}$ **TYPICAL PERFORMANCE****POWER OUTPUT vs POWER INPUT**

TEST CIRCUIT LAYOUT

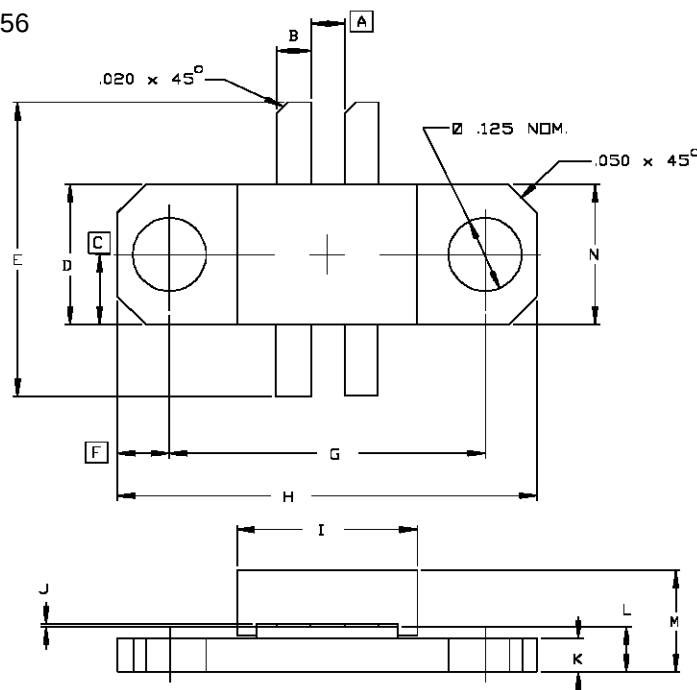


TEST CIRCUIT



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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