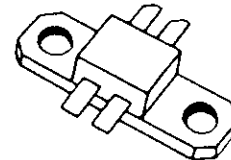


## RF & MICROWAVE TRANSISTORS 800-900 MHz BASE STATION APPLICATIONS

- 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 4FL (M156)**  
epoxy sealed

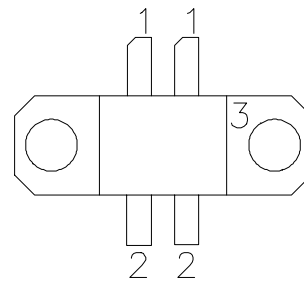
**ORDER CODE**  
SD1424

**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

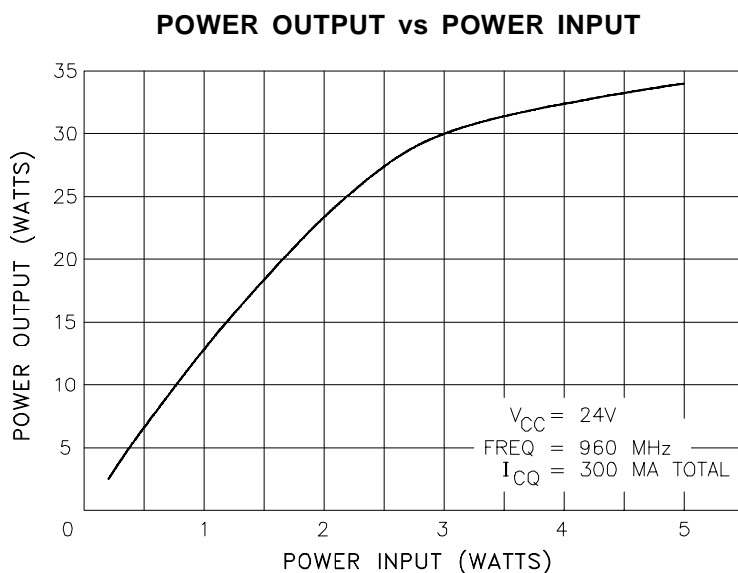
$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2.0	$^{\circ}\text{C/W}$
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**ELECTRICAL SPECIFICATIONS** ( $T_{\text{case}} = 25^{\circ}\text{C}$ )**STATIC**

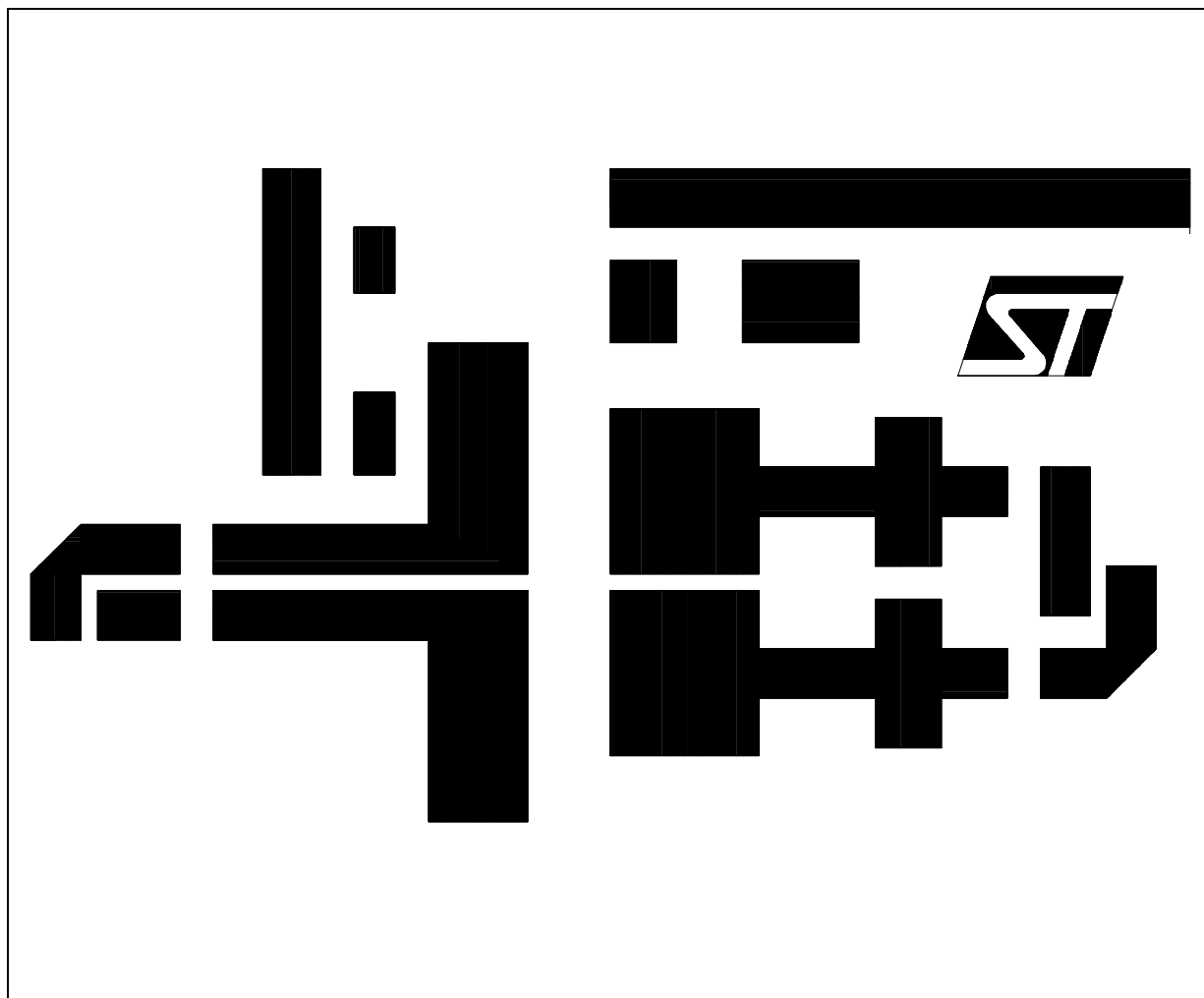
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 50\text{mA}$	$I_{\text{E}} = 0\text{mA}$	48	50	—	V
$BV_{\text{CEO}}$	$I_{\text{C}} = 20\text{mA}$	$I_{\text{B}} = 0\text{mA}$	25	30	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5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

**DYNAMIC**

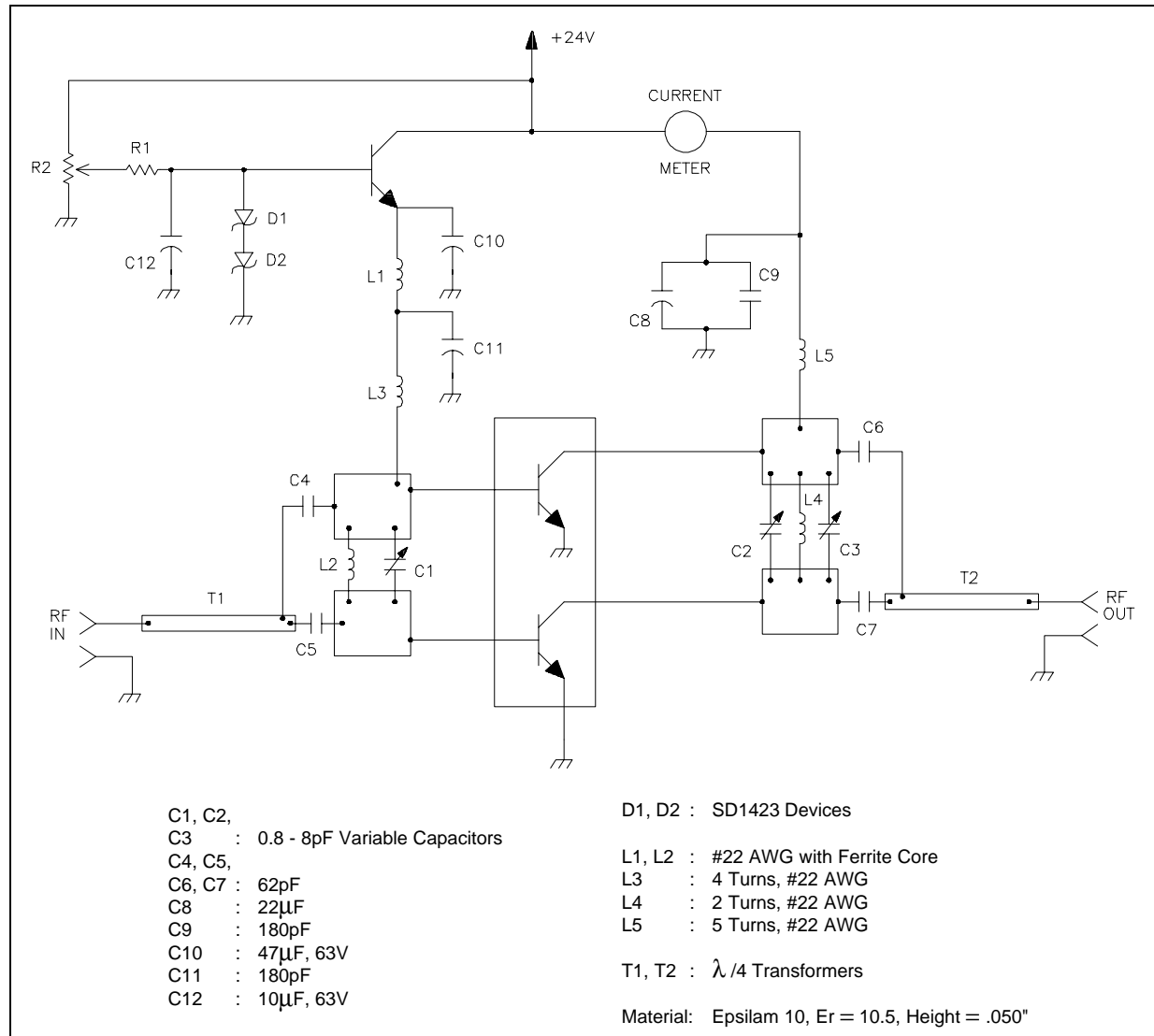
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{\text{OUT}}$	$f = 960\text{ MHz}$	$P_{\text{IN}} = 5.3\text{ W}$	$V_{\text{CC}} = 24\text{ V}$	30	—	—	W
$G_{\text{P}}$	$f = 960\text{ MHz}$	$P_{\text{OUT}} = 30\text{ W}$	$V_{\text{CC}} = 24\text{ V}$	7.5	—	—	dB
$\eta_{\text{c}}$	$f = 960\text{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

Note:  $I_{\text{CQ}} = 150\text{mA}$ **TYPICAL PERFORMANCE**

## TEST CIRCUIT LAYOUT

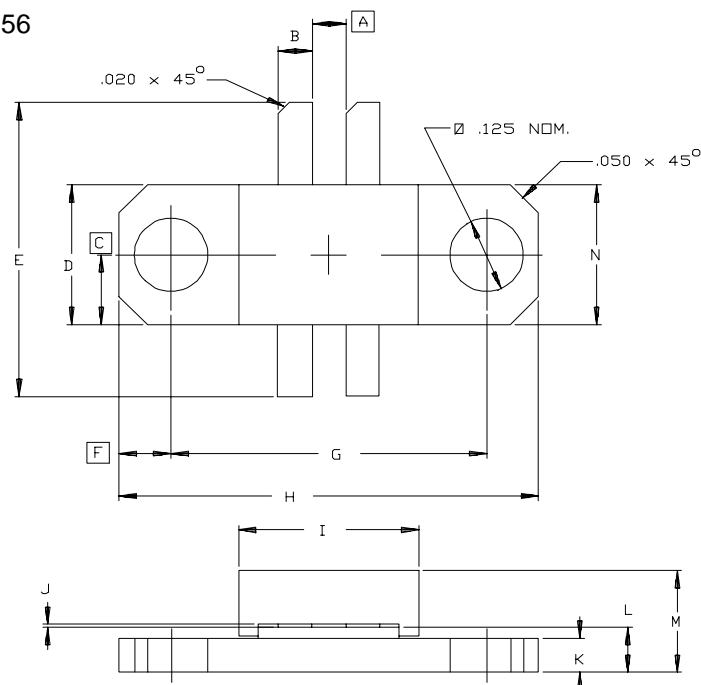


## TEST CIRCUIT



## 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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