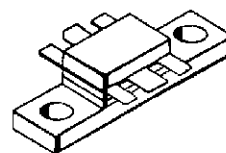


RF & MICROWAVE TRANSISTORS 800-960MHz BASE STATION APPLICATIONS

- 800 - 960 MHz
- 24 VOLTS
- EFFICIENCY 50%
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS AB LINEAR OPERATION
- $P_{OUT} = 15 \text{ W MIN. WITH } 8.0 \text{ dB GAIN}$



.230 6LFL (M118)
epoxy sealed

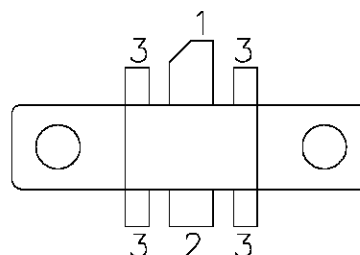
ORDER CODE
SD1423

BRANDING
SD1423

DESCRIPTION

The SD1423 is a gold metallization epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation for cellular base station applications. The SD1423 is designed as a medium power output device or as the driver for the SD1424.

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_{CEO}	Collector-Emitter Voltage	25	V
V_{CES}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	2.5	A
P_{DISS}	Power Dissipation	29	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	6	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

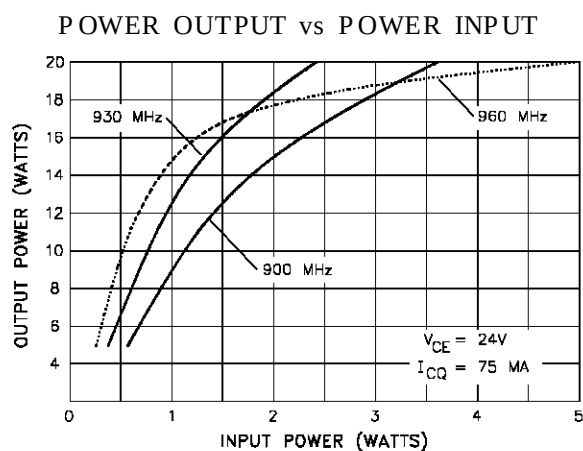
STATIC

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}	$f = 960\text{ MHz}$	$V_{\text{CC}} = 24\text{ V}$	$I_{\text{CQ}} = 75\text{ mA}$	15	—	—	W
P_{G}	$f = 960\text{ MHz}$	$V_{\text{CC}} = 24\text{ V}$	$I_{\text{CQ}} = 75\text{ mA}$	8	—	—	dB
η_{c}	$f = 960\text{ MHz}$	$V_{\text{CC}} = 24\text{ V}$	$I_{\text{CQ}} = 75\text{ mA}$	45	50	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 24\text{V}$		—	20	24	pF

TYPICAL PERFORMANCE

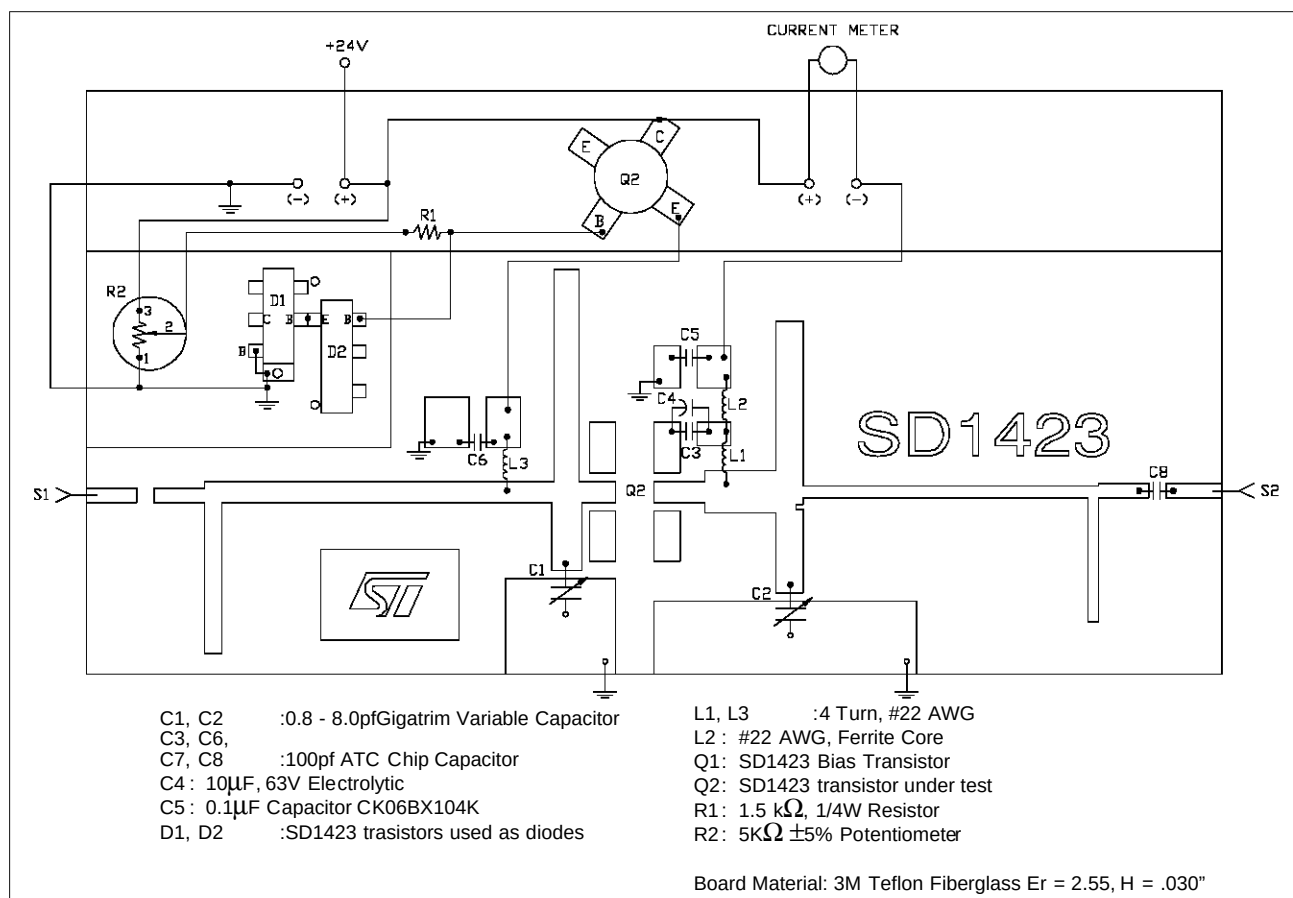


IMPEDANCE DATA

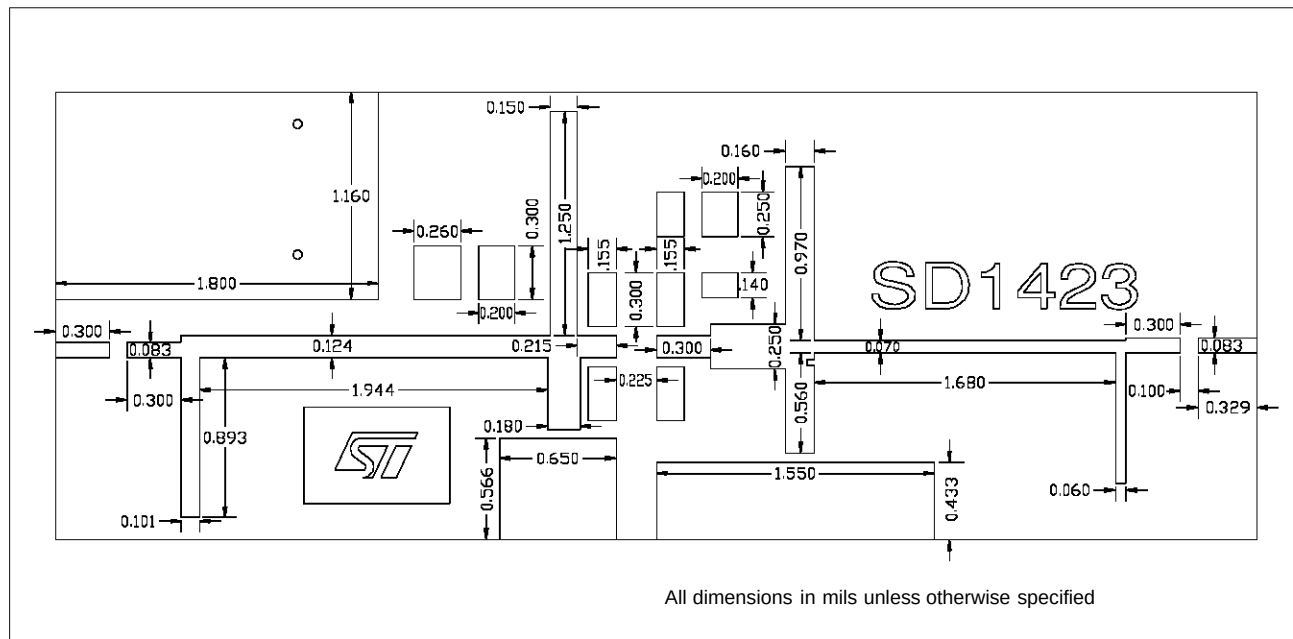
FREQ.	$Z_{\text{IN}} (\Omega)$	$Z_{\text{CL}} (\Omega)$
900 MHz	$1.30 + j 1.98$	$3.99 + j 5.55$
930 MHz	$1.42 + j 2.31$	$3.18 + j 4.97$
960 MHz	$1.45 + j 2.62$	$2.96 + j 4.07$

 $P_{\text{OUT}} = 15\text{ W}$ $V_{\text{CE}} = 75\text{ mA}$ $I_{\text{CQ}} = 24\text{ V}$

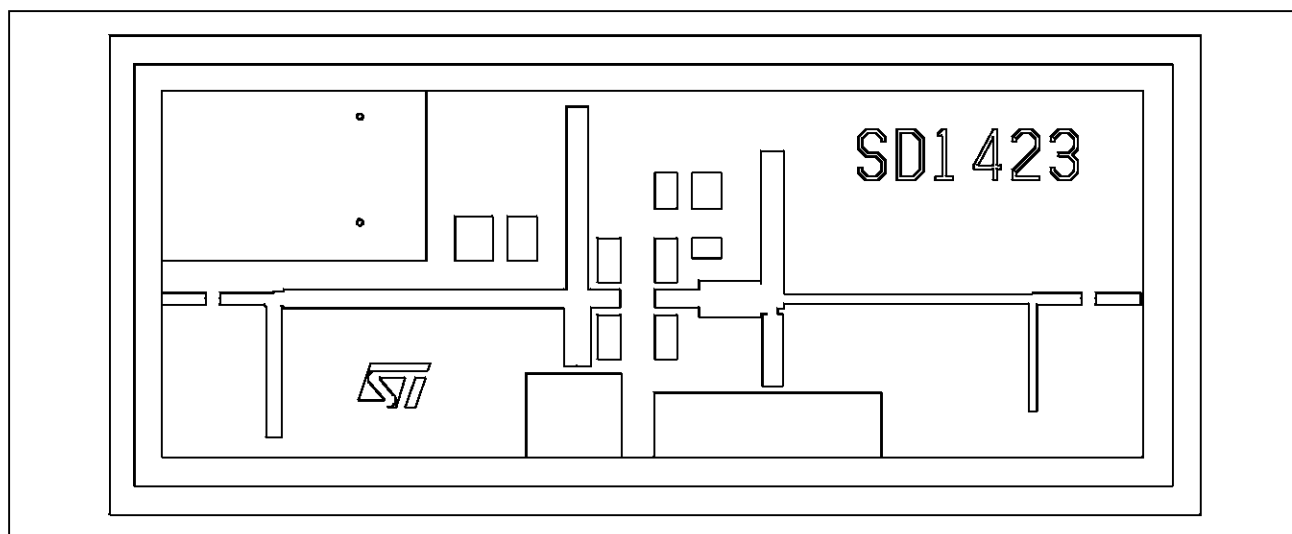
TEST CIRCUIT



TEST CIRCUIT DIMENSIONS

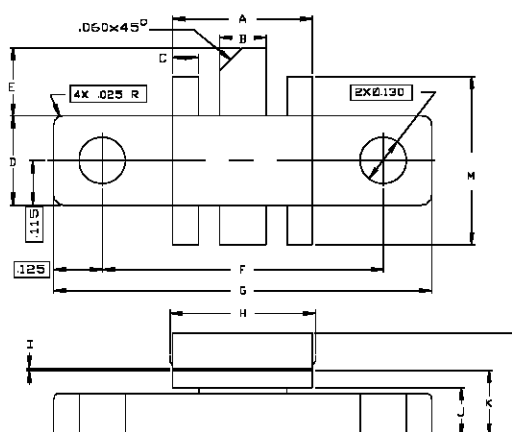


TEST CIRCUIT LAYOUT



PACKAGE MECHANICAL DATA

Ref.: UDCS Doc. No.1010941 rev. B



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.355/9,02	.365/9,27	K	.160/4,06	.180/4,57
B	.115/2,92	.125/3,18	L	.250/6,35	.275/6,99
C	.060/1,52	.070/1,78	M	.420/10,67	.450/11,43
D	.225/5,72	.235/5,97			
E	.150/3,81	.170/4,32			
F	.720/18,29	.730/18,54			
G	.970/24,64	.980/24,89			
H	.355/9,02	.365/9,27			
I	.004/0,10	.006/0,15			
J	.120/3,05	.130/3,30			

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