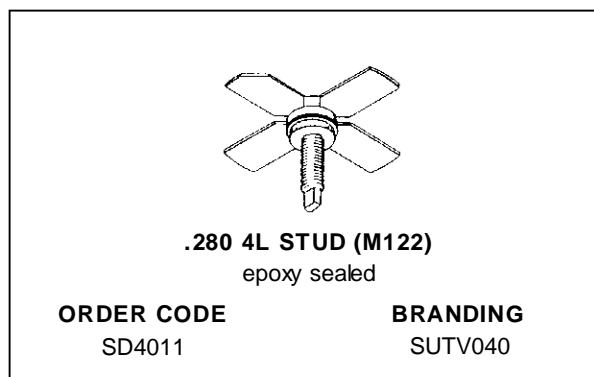


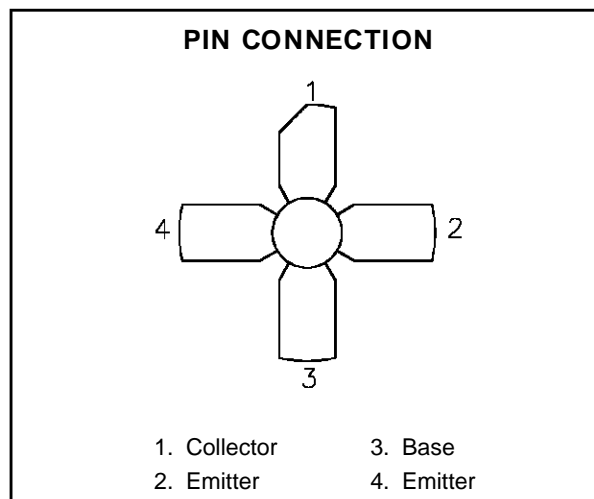
**RF & MICROWAVE TRANSISTORS
UHF TV/LINEAR APPLICATIONS**

- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- COMMON EMITTER
- OVERLAY GEOMETRY
- CLASS A OPERATION
- METAL/CERAMIC PACKAGE
- $P_{OUT} = 4 \text{ W MIN. WITH } 8 \text{ dB GAIN}$


DESCRIPTION

The SD4011 is a gold metallized NPN silicon bipolar device optimized for Class A operation in TV Band IV/V.

Suitable for a variety of other UHF linear applications, SD4011 is supplied in an industry-standard .280 stud package.


ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	1.59	A
P_{DISS}	Power Dissipation	31.8	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	5.5	$^{\circ}\text{C/W}$
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SD4011

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 5mA	I _E = 0mA	65	—	—	V
BV _{EBO}	I _E = 5mA	I _C = 0mA	3.5	—	—	V
BV _{CES}	I _C = 10mA	V _{BE} = 0V	65	—	—	V
BV _{CEO}	I _C = 5mA	I _B = 0mA	20	—	—	V
I _{CBO}	V _{CB} = 40V	I _E = 0mA	—	—	1.0	mA
h _{FE}	V _C = 5V	I _C = 800mA	20	—	200	—

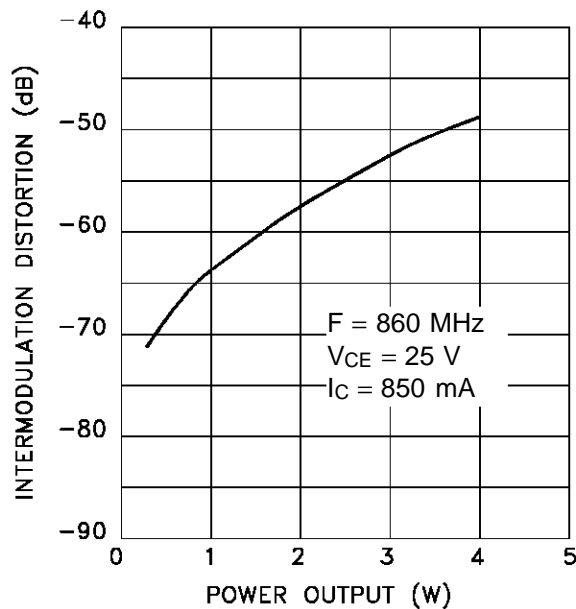
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 860 MHz	V _{CE} = 25 V	I _C = 850 mA	4	—	—	W
G _P	f = 860 MHz	V _{CE} = 25 V	I _C = 850 mA	8.0	—	—	dB
IMD ₃	f = 860 MHz	V _{CE} = 25 V	I _C = 850 mA	-60	—	—	dBc
C _{OB}	f = 1 MHz	V _{CE} = 25 V		—	13	20	pF

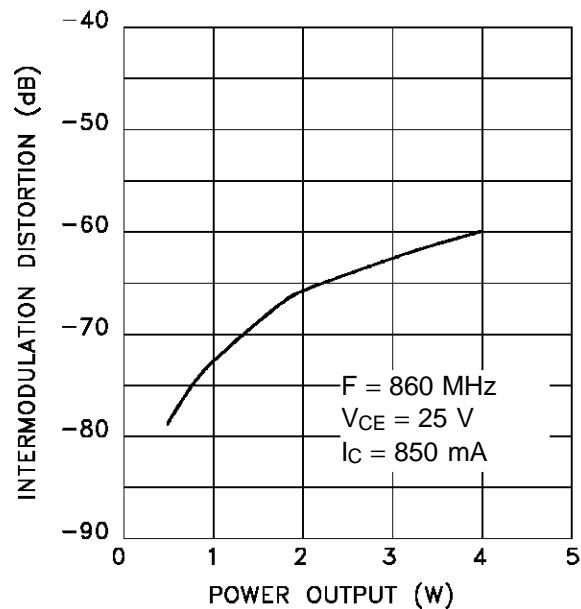
Note: P_{IN} = 0.63

TYPICAL PERFORMANCE

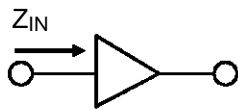
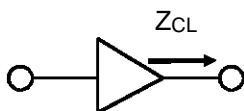
INTERMODULATION DISTORTION vs POWER OUTPUT



INTERMODULATION DISTORTION (3 TONES) vs POWER OUTPUT



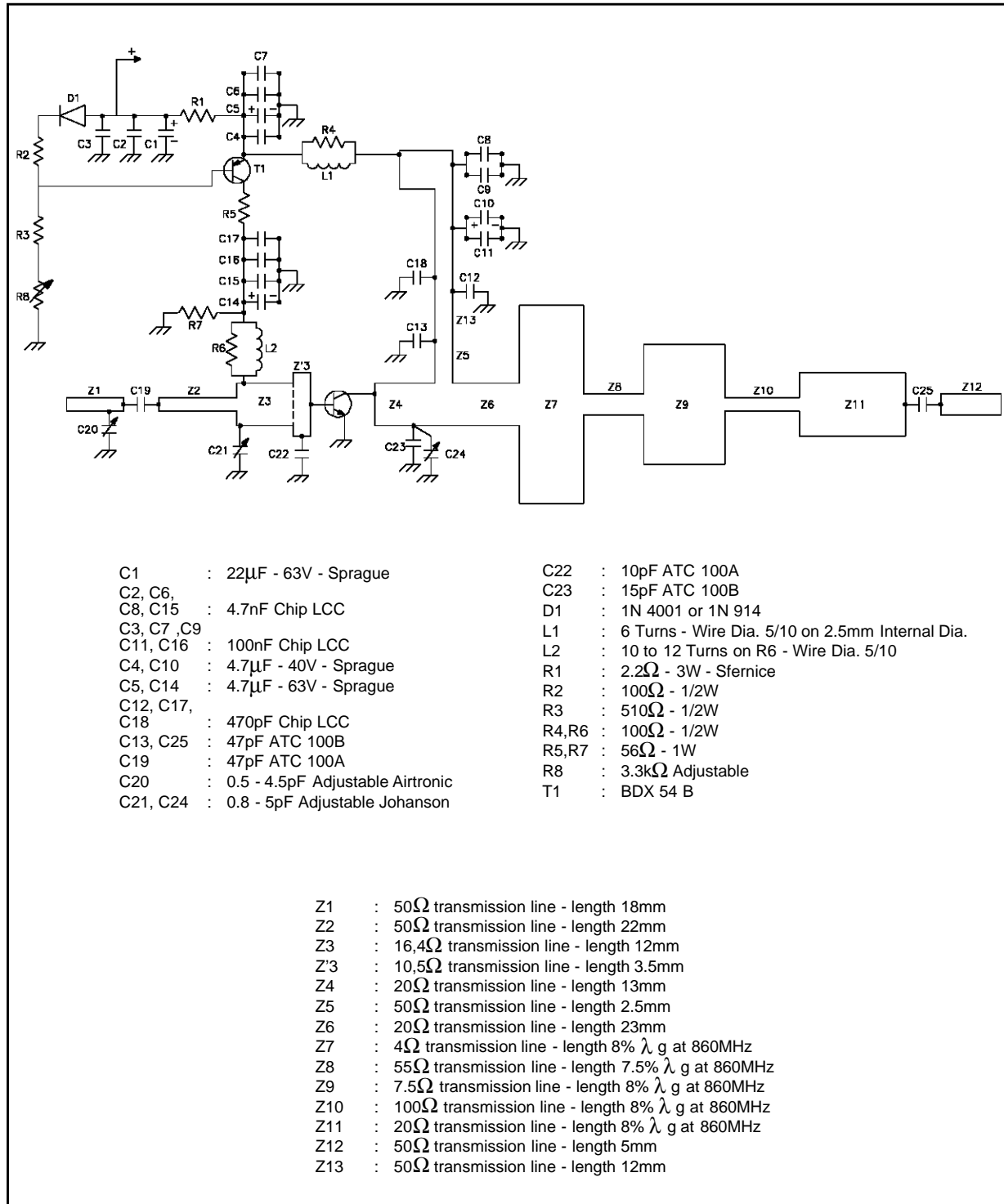
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
470 MHz	$2.26 + j 1.67$	$11.30 + j 5.23$
600 MHz	$1.93 + j 1.96$	$10.65 + j 2.91$
700 MHz	$1.40 + j 2.38$	$8.41 + j 6.07$
860 MHz	$1.19 + j 3.45$	$5.63 + j 4.17$

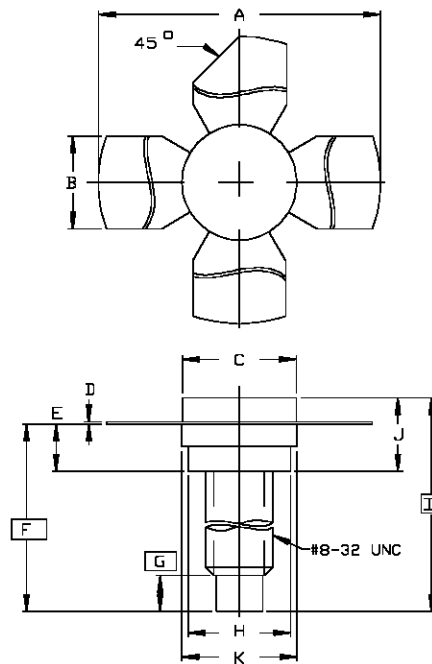
Normalized to 50 ohms

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0122



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	1.010/25,65	1.055/26,80
B	.220/5,59	.230/5,84
C	.270/6,86	.285/7,24
D	.003/0,08	.007/0,18
E	.117/2,97	.137/3,48
F	.572/14,53	
G	.130/3,30	
H	.245/6,22	.255/6,48
I	.640/16,26	
J	.175/4,45	.217/5,51
K	.275/6,99	.285/7,24

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