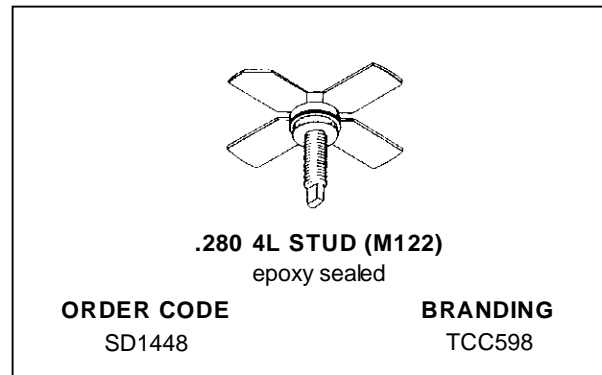


RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

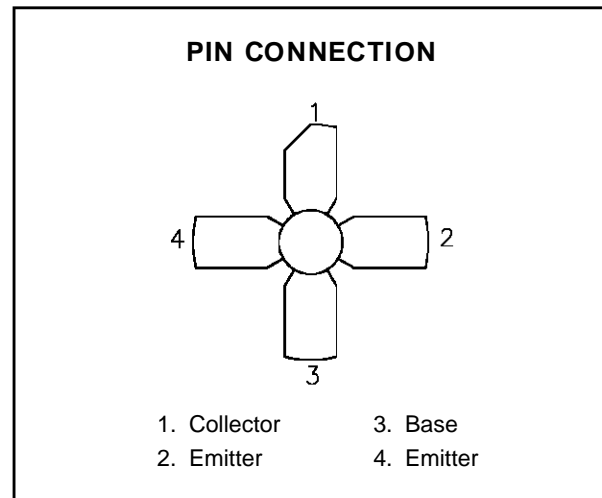
- 860 MHz
- 25 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS A LINEAR OPERATION
- P_{OUT} = 4.0 W MIN. WITH 7.0 dB GAIN



DESCRIPTION

The SD1448 is a silicon NPN bipolar device specifically designed for high linearity applications in the UHF frequency range including TV Bands IV and V.

Gold metallization and emitter ballasting assure high reliability under Class A linear amplifier operation.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	45	V
V _{CEO}	Collector-Emitter Voltage	25	V
V _{EBO}	Emitter-Base Voltage	4	V
I _C	Device Current	1.6	A
P _{DISS}	Power Dissipation	31.8	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	5.5	°C/W
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SD1448 (TCC598)

ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 10\text{mA}$	$I_{\text{E}} = 0\text{mA}$	45	—	—	V
BV_{CEO}	$I_{\text{C}} = 20\text{mA}$	$I_{\text{B}} = 0\text{mA}$	25	—	—	V
BV_{EBO}	$I_{\text{E}} = 2.5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.0	—	—	V
I_{CBO}	$V_{\text{CB}} = 28\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	0.9	mA
h_{FE}	$V_{\text{CE}} = 20\text{V}$	$I_{\text{C}} = 500\text{mA}$	10	—	—	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}^1	$f = 860\text{ MHz}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{C}} = 850\text{ mA}$	4.0	—	—	W
G_{P}^2	$f = 860\text{ MHz}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{C}} = 850\text{ mA}$	7.0	—	—	dB
IMD_3^3	$P_{\text{SYNC}} = 4\text{ W}$	$V_{\text{CE}} = 25\text{ V}$	$I_{\text{C}} = 850\text{ mA}$	—	—	-60	dBc
COB	$f = 1\text{ MHz}$	$V_{\text{CB}} = 25\text{ V}$		—	—	20	pF

Note 1: $P_{\text{IN}} = 0.8\text{W}$

Note 2: $P_{\text{OUT}} = 4\text{ W}$

Note 3: Levels relative to $P_{\text{SYNC}} = 4\text{ W}$

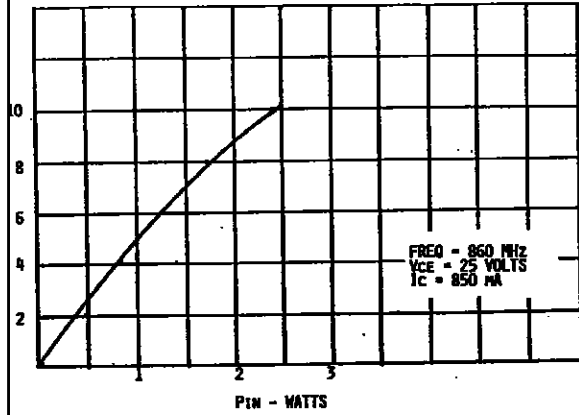
$f_1 = 860.0\text{ MHz}$ -8dBc

$f_2 = 863.5\text{ MHz}$ -16dBc

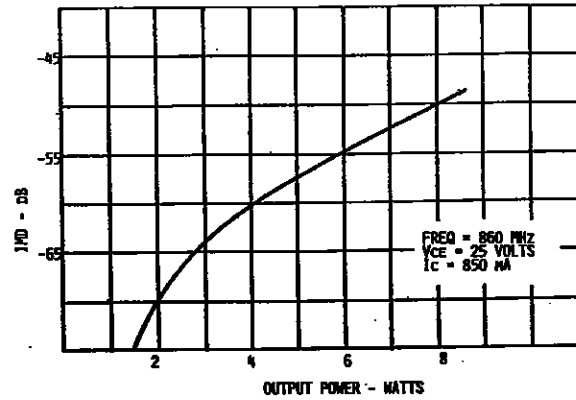
$f_3 = 864.5\text{ MHz}$ -7dBc

TYPICAL PERFORMANCE

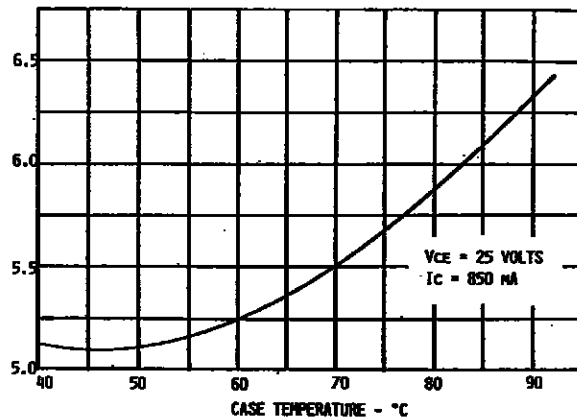
POWER OUTPUT vs POWER INPUT



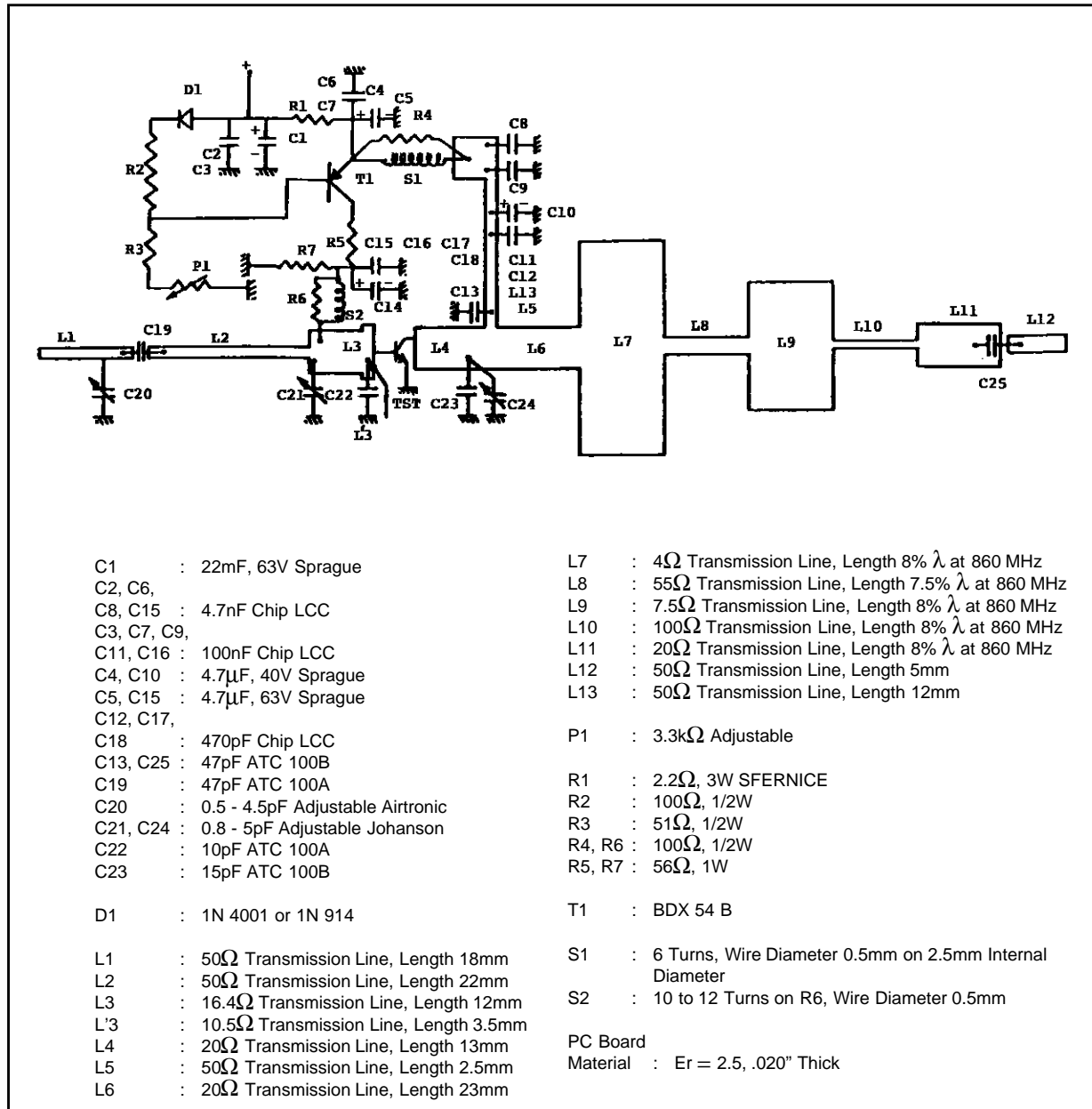
INTERMODULATION DISTORTION vs POWER OUTPUT



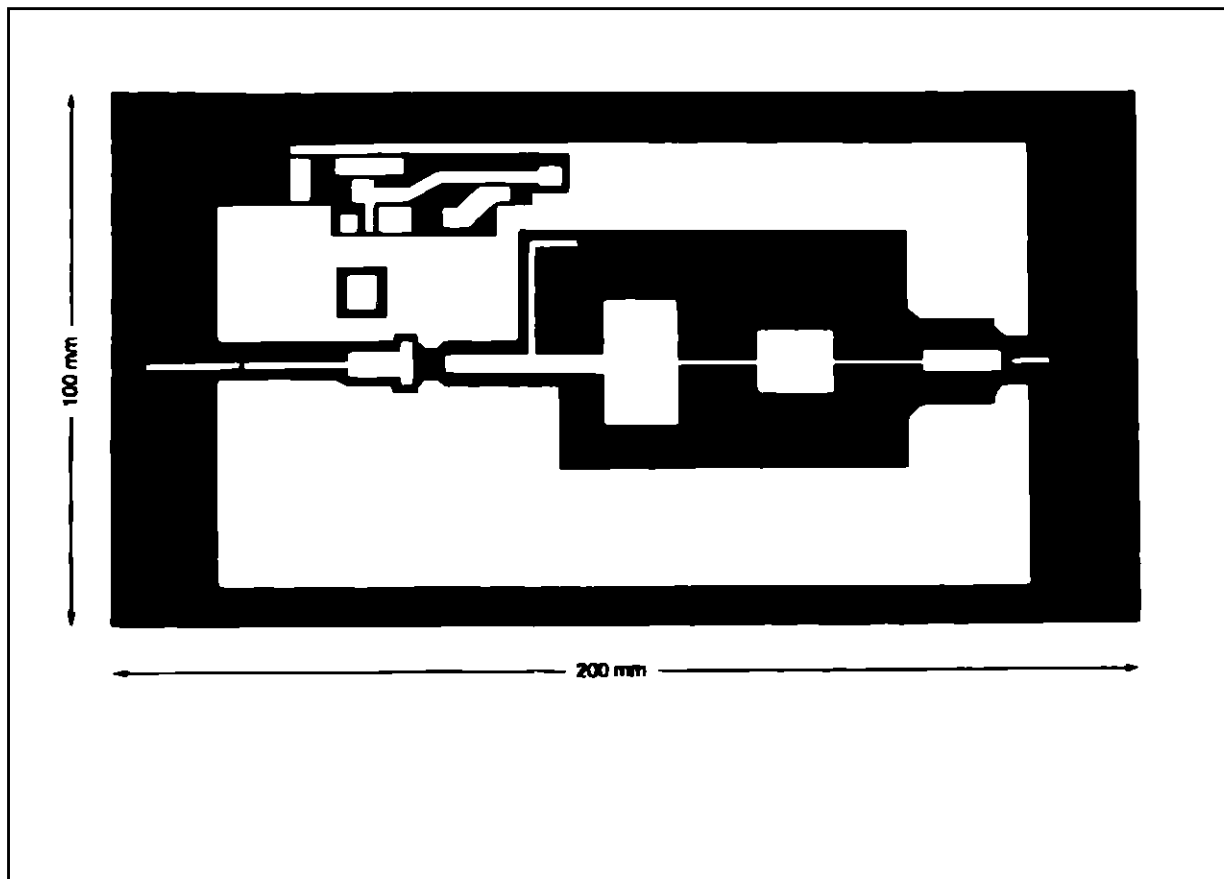
THERMAL RESISTANCE vs CASE TEMPERATURE



TEST CIRCUIT



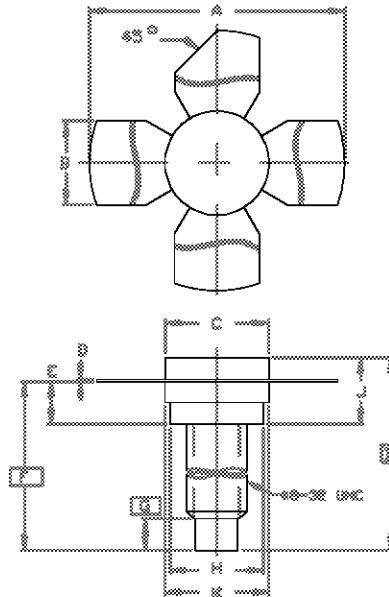
TEST CIRCUIT LAYOUT



SD1448 (TCC598)

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0122



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	1.018/25.63	1.035/26.00
B	.220/5.59	.230/5.84
C	.270/6.86	.285/7.24
D	.303/7.69	.317/8.18
E	.117/2.97	.127/3.48
F	.578/14.53	
G	.130/3.30	
H	.245/6.22	.255/6.48
I	.640/16.26	
J	.175/4.43	.217/5.51
K	.275/6.99	.285/7.24

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