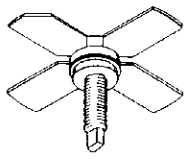
SGS-THOMSON MICROELECTRONICS

SD1449 (TCC597)

RF & MICROWAVE TRANSISTORS UHF TV\LINEAR APPLICATIONS

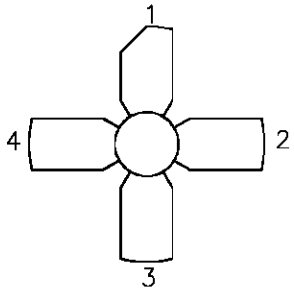
- 860 MHz
- 20 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS A LINEAR OPERATION
- P_{OUT} = 1.0 W MIN. WITH 10.0 dB GAIN



.280 4L STUD (M122)
epoxy sealed

ORDER CODE	BRANDING
SD1449	TCC597

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

DESCRIPTION

The SD1449 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	3.5	V
I_C	Device Current	1.2	A
P_{DISS}	Power Dissipation	19.4	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	9.0	°C/W

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 2 mA	I_E = 0 mA	45	—	—	V
BV_{CER}	I_C = 40 mA	R_{BE} = 10 Ω	50	—	—	V
BV_{CEO}	I_C = 40 mA	I_B = 0 mA	24	—	—	V
BV_{EBO}	I_E = .5 mA	I_C = 0 mA	3.5	—	—	V
I_{CBO}	V_{CB} = 28 V	I_E = 0 mA	—	—	0.45	mA
h_{FE}	V_{CE} = 5 V	I_C = 200 mA	20	—	120	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}[1]	f = 860 MHz	V_{CE} = 20 V	I_C = 440 mA	1	—	—	W
P_G[2]	f = 860 MHz	V_{CE} = 20 V	I_C = 440 mA	10	—	—	dB
IMD_3[3]	P_{SYNC} = 1 W	V_{CE} = 20 V	I_C = 440 mA	—	—	–58	dBc
IMD_3[3]	P_{SYNC} = 2 W	V_{CE} = 20 V	I_C = 440 mA	—	—	–51	dBc
C_{OB}	f = 1 MHzV_{CB} = 20V			—	—	7	pF

Note 1: P_{IN} = 0.1W

Note 2: P_{OUT} = 1 W

Note 3: Levels relative to P_{SYNC}

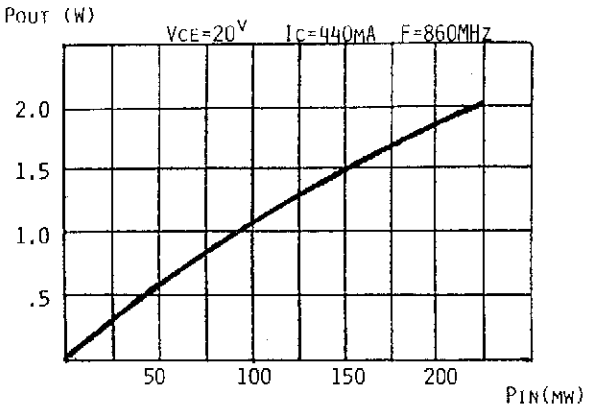
f_1 = 860.0 MHz −8dBc

f_2 = 863.5 MHz −16dBc

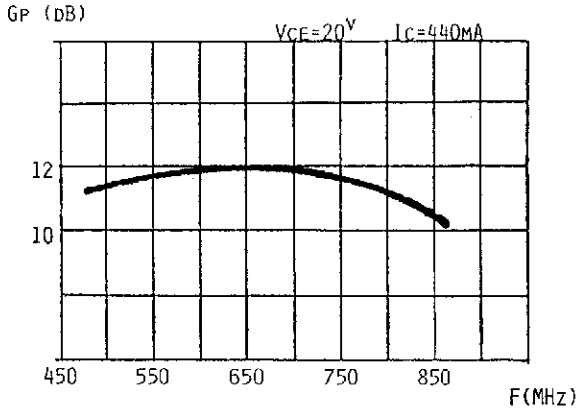
f_3 = 864.5 MHz −7dBc

TYPICAL PERFORMANCE

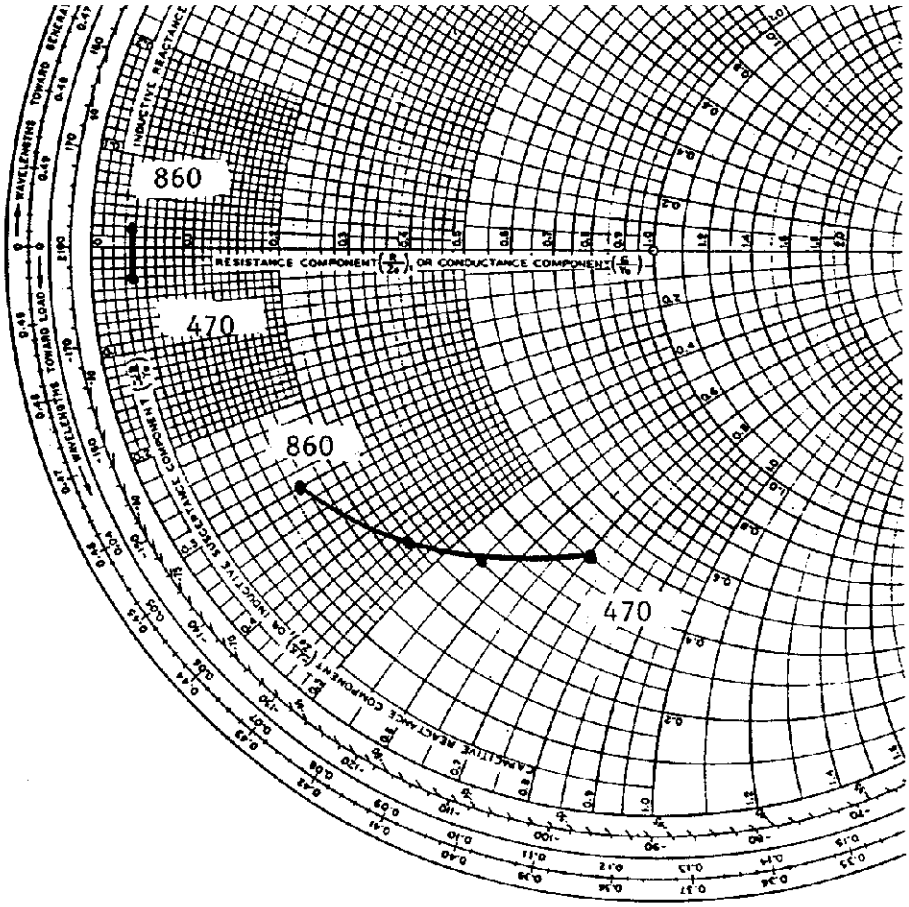
POWER OUTPUT vs INPUT POWER



BROADBAND POWER GAIN vs FREQUENCY



IMPEDANCE DATA

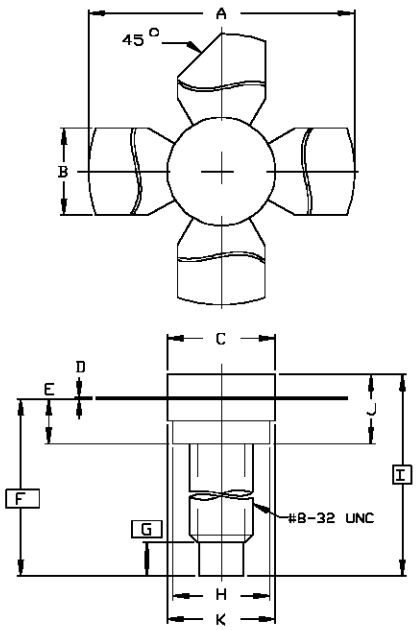


FREQ.	Z_{IN} (Ω)	Z_{OUT} (Ω)
860 MHz	1.8 + j 0.8	8.0 – j 15.0
650 MHz	1.9 – j 0.5	15.0 – j 27.0
470 MHz	2.0 – j 1.5	23.0 – j 35.0

V_{CC} = 20 V
I_C = 440 mA

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0122 rev. B



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