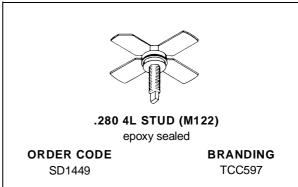


## SD1449 (TCC597)

# RF & MICROWAVE TRANSISTORS UHF TV\LINEAR APPLICATIONS

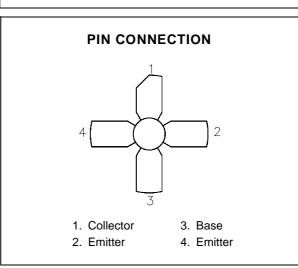
- 860 MHz
- 20 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS A LINEAR OPERATION
- P<sub>OUT</sub> = 1.0 W MIN. WITH 10.0 dB GAIN



### **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** $(T_{case} = 25^{\circ}C)$

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
Ic	Device Current	1.2	Α
P <sub>DISS</sub>	Power Dissipation	19.4	W
TJ	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	9.0	°C/W
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July 27, 1994

### **ELECTRICAL SPECIFICATIONS** (T<sub>case</sub> = 25°C)

### **STATIC**

Symbol	Test Conditions	Value			Unit		
Symbol		rest conditions		Min.	Тур.	Max.	Ollit
ВУсво	I <sub>C</sub> = 2 mA	$I_E = 0 \text{ mA}$		45			V
BVCER	I <sub>C</sub> = 40 mA	$R_{BE} = 10 \Omega$		50			٧
BVCEO	I <sub>C</sub> = 40 mA	$I_B = 0 \text{ mA}$		24	_	_	V
BV <sub>EBO</sub>	I <sub>E</sub> = .5 mA	$I_C = 0 \text{ mA}$		3.5			٧
I <sub>CBO</sub>	V <sub>CB</sub> = 28 V	$I_E = 0 \text{ mA}$		_		0.45	mA
hfE	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 200 mA		20	_	120	_

### **DYNAMIC**

Symbol	Test Conditions		Value			Unit	
Symbol		rest Conditions		Min.	Тур.	Max.	Unit
P <sub>OUT</sub> <sup>1</sup>	f = 860 MHz	$V_{CE} = 20 \text{ V}$	$I_C = 440 \text{ mA}$	1	_	_	W
$PG^2$	f = 860 MHz	$V_{CE} = 20 V$	$I_C = 440 \text{ mA}$	10	_	_	dB
IMD <sub>3</sub> <sup>3</sup>	P <sub>SYNC</sub> = 1 W	V <sub>CE</sub> = 20 V	I <sub>C</sub> = 440 mA	_	_	-58	dBc
IMD <sub>3</sub> <sup>3</sup>	P <sub>SYNC</sub> = 2 W	V <sub>CE</sub> = 20 V	I <sub>C</sub> = 440 mA	_	_	-51	dBc
Сов	f = 1 MHzV <sub>CB</sub> = 20V			_	_	7	pF

Note 1:  $P_{IN} = 0.1W$ Note 2:  $P_{OUT} = 1 W$ 

Note 3: Levels relative to P<sub>SYNC</sub>

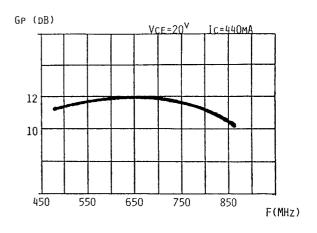
 $f_1 = 860.0 \text{ MHz} - 8dBc$   $f_2 = 863.5 \text{ MHz} - 16dBc$  $f_3 = 864.5 \text{ MHz} - 7dBc$ 

### TYPICAL PERFORMANCE

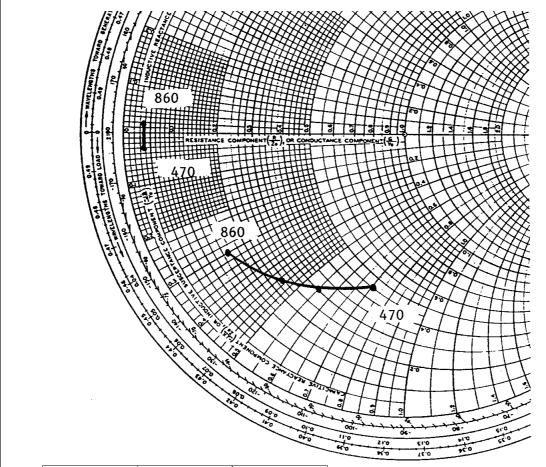
### POWER OUTPUT vs INPUT POWER

# POUT (W) VCE=20<sup>V</sup> IC=440MA F=860MH7 1.5 1.0 .5 PIN(MW)

### **BROADBAND POWER GAIN vs FREQUENCY**



### **IMPEDANCE DATA**

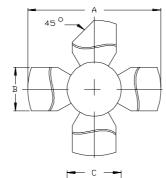


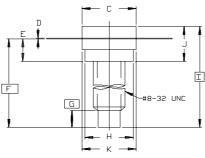
FREQ.	Z <sub>IN</sub> (Ω)	$Z_{OUT}$ ( $\Omega$ )		
860 MHz	1.8 + j 0.8	8.0 – j 15.0		
650 MHz	1.9 – j 0.5	15.0 – j 27.0		
470 MHz	2.0 – j 1.5	23.0 – j 35.0		

 $V_{CC} = 20 \text{ V}$   $I_{C} = 440 \text{ mA}$ 

### **PACKAGE MECHANICAL DATA**

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





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	MINIMUM MAXIMUI Inches/mm Inches/r				
А	1.010/25,65	1.055/26,80			
В	.220/5,59	.230/5,84			
O	.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				
I	.245/6,22	.255/6,48			
I	.640/16,26				
7	.175/4,45	.217/5,51			
К	.275/6,99	.285/7,24			

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