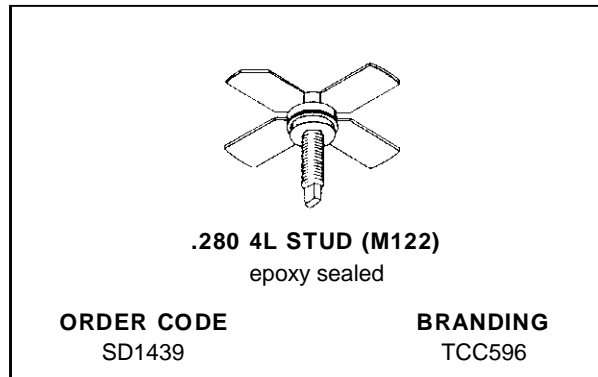


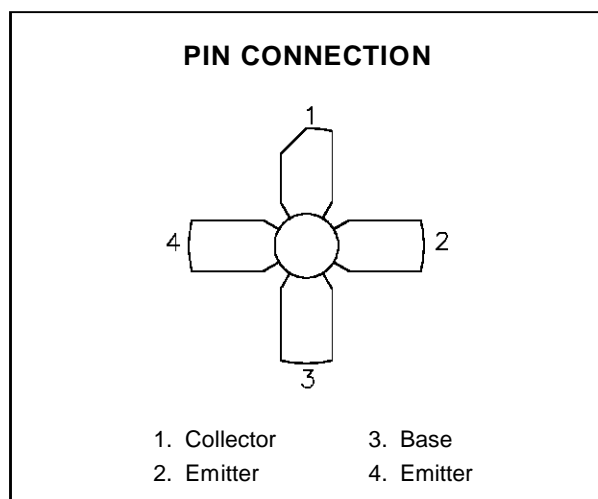
RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

- 860 MHz
- COMMON EMITTER
- GOLD METALLIZATION
- CLASS A LINEAR OPERATION
- $P_{OUT} = 0.5 \text{ W MIN. WITH } 9.5 \text{ dB GAIN}$


DESCRIPTION

The SD1439 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 ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	24	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	0.5	A
P_{DISS}	Power Dissipation	8.75	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	20	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 1 \text{ mA}$	$I_{\text{E}} = 0 \text{ mA}$	45	—	—	V
BV_{CEO}	$I_{\text{C}} = 20 \text{ mA}$	$I_{\text{B}} = 0 \text{ mA}$	24	—	—	V
BV_{EBO}	$I_{\text{E}} = 0.25 \text{ mA}$	$I_{\text{C}} = 0 \text{ mA}$	3.5	—	—	V
I_{CBO}	$V_{\text{CB}} = 28 \text{ V}$	$I_{\text{E}} = 0 \text{ mA}$	—	—	0.45	mA
h_{FE}	$V_{\text{CE}} = 5 \text{ V}$	$I_{\text{C}} = 100 \text{ mA}$	15	—	120	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}^1	$f = 860 \text{ MHz}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	0.5	—	—	W
G_{P}^2	$f = 860 \text{ MHz}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	9.5	—	—	dB
IMD_3^3	$P_{\text{SYNC}} = 0.5 \text{ W}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	—	—	-58	dBc
C_{OB}	$f = 1 \text{ MHz}$	$V_{\text{CB}} = 28 \text{ V}$		—	—	5	pF

Note 1: $P_{\text{IN}} = 56 \text{ mW}$

Note 2: $P_{\text{OUT}} = 0.5 \text{ W}$

Note 3: Levels relative to $P_{\text{SYNC}} = 0.5 \text{ W}$

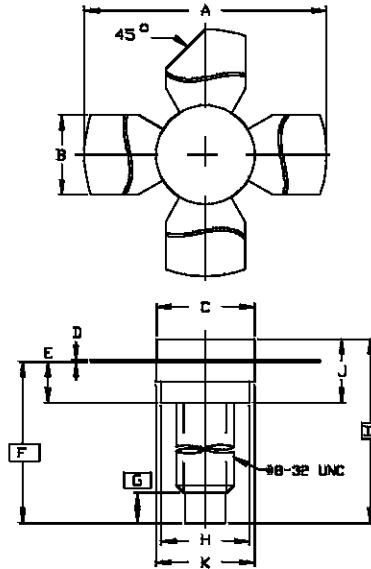
$f_1 = 860.0 \text{ MHz}$ -8dBc

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

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

PACKAGE MECHANICAL DATA

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



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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