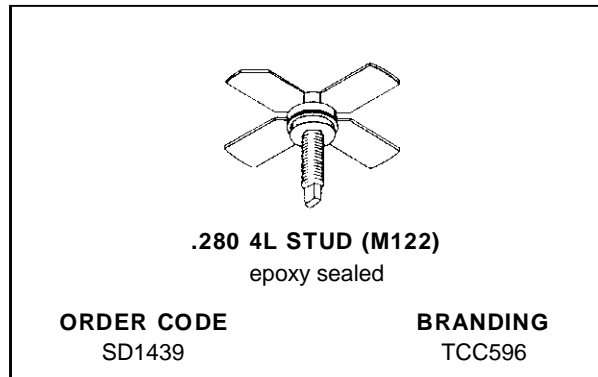


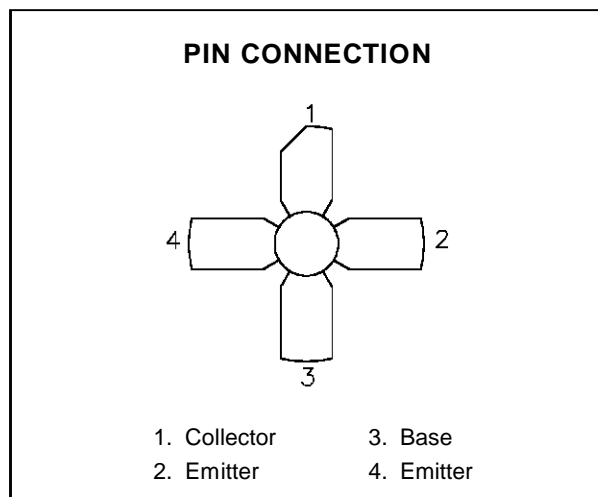
## RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

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

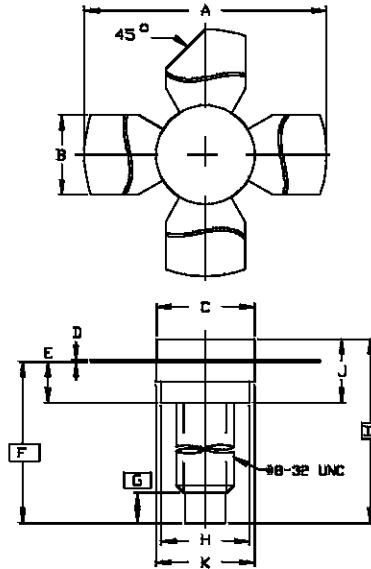
## DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{\text{OUT}}^1$	$f = 860 \text{ MHz}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	0.5	—	—	W
$G_{\text{P}}^2$	$f = 860 \text{ MHz}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	9.5	—	—	dB
$\text{IMD}_3^3$	$P_{\text{SYNC}} = 0.5 \text{ W}$	$V_{\text{CE}} = 20 \text{ V}$	$I_{\text{C}} = 220 \text{ mA}$	—	—	-58	dBc
$C_{\text{OB}}$	$f = 1 \text{ MHz}$	$V_{\text{CB}} = 28 \text{ V}$		—	—	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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