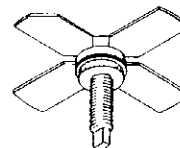


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 470 MHz
- 12.5 VOLTS
- EFFICIENCY 60%
- COMMON EMITTER
- $P_{OUT} = 5.0 \text{ W MIN. WITH } 8.5 \text{ dB GAIN}$

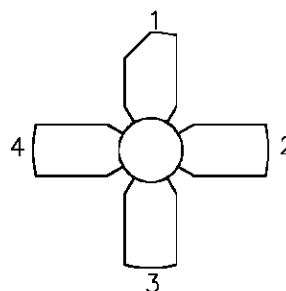


.280 2L STUD (M122)
epoxy sealed

ORDER CODE
SD1135

BRANDING
SD1135

PIN CONNECTION



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

DESCRIPTION

The SD1135 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for UHF communications. This device utilizes improved metallization to achieve infinite VSWR at rated operating conditions.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CER}	Collector-Emitter Voltage	18	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	2.0	A
P_{DISS}	Power Dissipation	37	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	11.6	$^{\circ}\text{C/W}$
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SD1135

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

STATIC

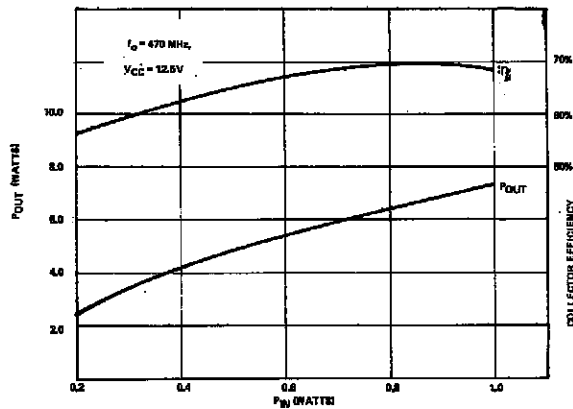
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	$I_{\text{C}} = 10\text{mA}$ $V_{\text{BE}} = 0\text{mA}$	36	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 0\text{mA}$	16	—	—	V
BV_{EBO}	$I_{\text{E}} = 2\text{mA}$ $I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CBO}	$V_{\text{CB}} = 15\text{V}$ $I_{\text{E}} = 0\text{mA}$	—	—	1	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 200\text{mA}$	20	—	—	—

DYNAMIC

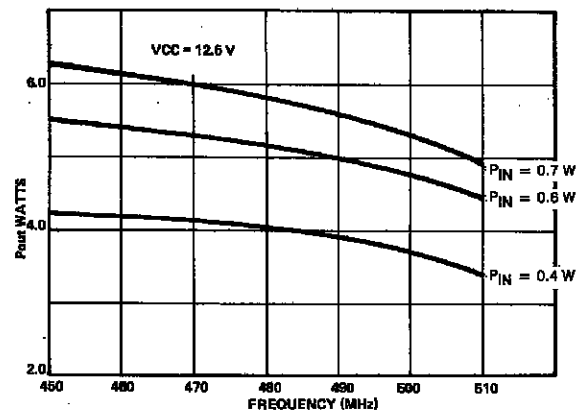
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 470\text{ MHz}$ $P_{\text{IN}} = 0.70\text{ W}$ $V_{\text{CC}} = 12.5\text{ V}$	5.0	—	—	W
G_{P}	$f = 470\text{ MHz}$ $P_{\text{IN}} = 0.70\text{ W}$ $V_{\text{CC}} = 12.5\text{ V}$	8.5	—	—	dB
C_{OB}	$f = 1\text{ MHz}$ $V_{\text{CB}} = 12\text{ V}$	—	19	—	pF

TYPICAL PERFORMANCE

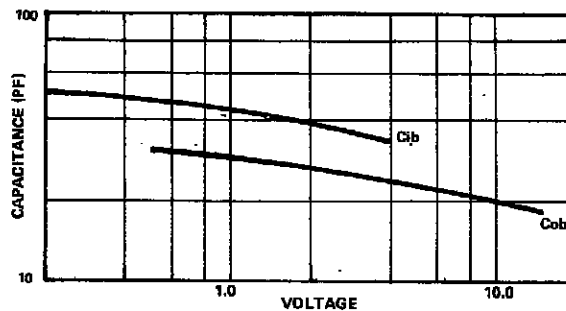
POWER OUTPUT vs POWER INPUT



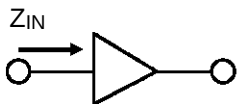
POWER OUTPUT vs FREQUENCY



CAPACITANCE vs VOLTAGE

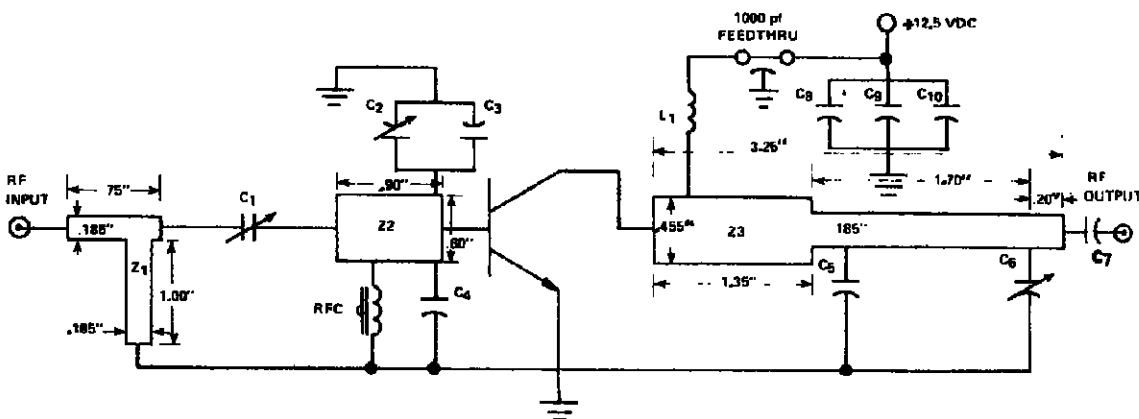
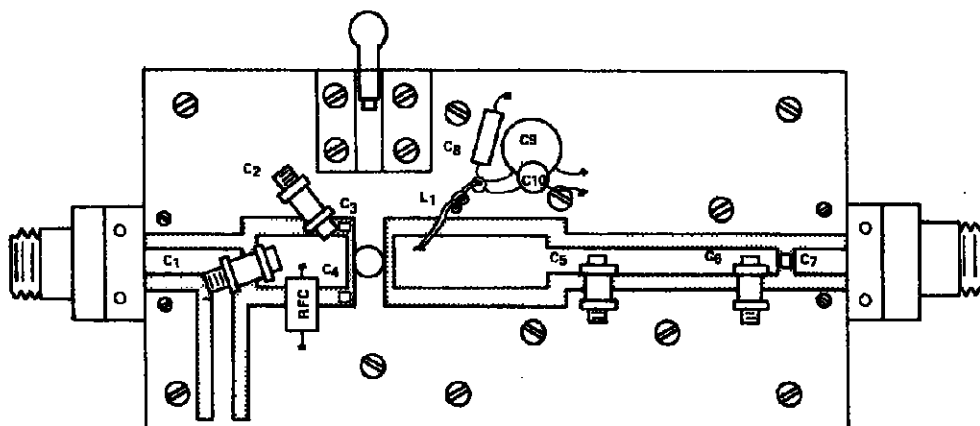


IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
450 MHz	$1.4 + j 2.0$	$10.7 - j 6.9$
470 MHz	$1.4 + j 2.9$	$11.4 - j 5.8$
512 MHz	$1.5 + j 3.4$	$11.9 - j 3.2$

TEST CIRCUIT



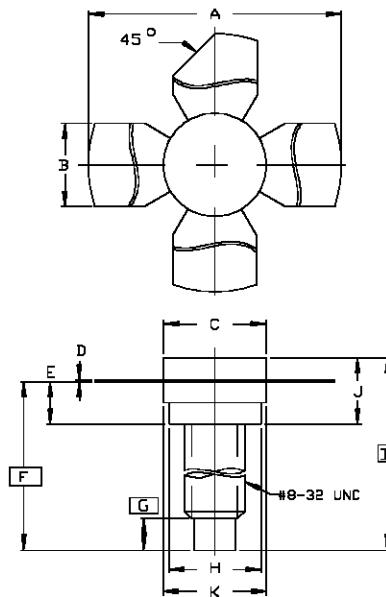
C1, C2,
C5, C6 : 0.8-10pF, Voltronics AJ10
C3, C4 : ATC 100-B, 16pF, Chip Capacitor
C7 : ATC 100-B, 620pF, Chip Capacitor
C8 : 5.6μF, 35V, Electrolytic

C9 : 0.1μF, Disc-Ceramic
C10 : 0.01μF, Disc-Ceramic
L1 : 2 Turns, #22 Enameled, 0.1" I.D.
RFC : 2 Turns in Ferroxcube VK 200/19-4B

Board Material 3M-K-6098, 1/16" Thick

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0122



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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