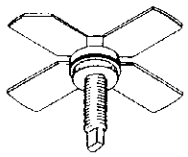
SGS-THOMSON MICROELECTRONICS

SD1135

RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

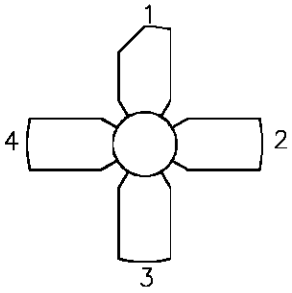
- 470 MHz
- 12.5 VOLTS
- EFFICIENCY 60%
- COMMON EMITTER
- P_{OUT} = 5.0 W MIN. WITH 8.5 dB GAIN



.280 2L STUD (M122)
epoxy sealed

ORDER CODE	BRANDING
SD1135	SD1135

PIN CONNECTION



1. Collector
2. Emitter
3. Base
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°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	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	11.6	°C/W

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

STATIC

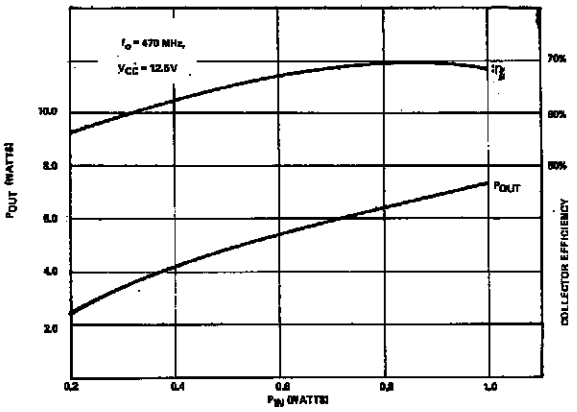
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 10mA	V_{BE} = 0mA	36	—	—	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	16	—	—	V
BV_{EBO}	I_E = 2mA	I_C = 0mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15V	I_E = 0mA	—	—	1	mA
h_{FE}	V_{CE} = 5V	I_C = 200mA	20	—	—	—

DYNAMIC

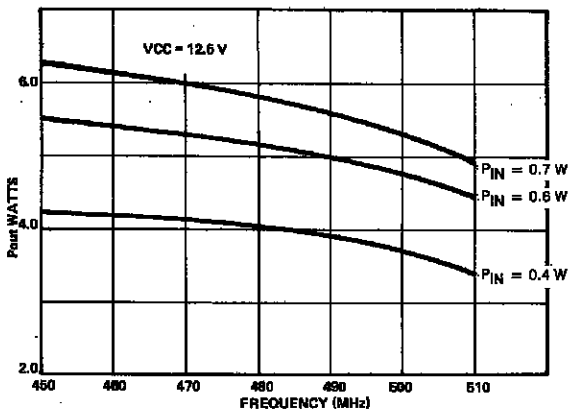
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz	P_{IN} = 0.70 W	V_{CC} = 12.5 V	5.0	—	—	W
G_P	f = 470 MHz	P_{IN} = 0.70 W	V_{CC} = 12.5 V	8.5	—	—	dB
C_{OB}	f = 1 MHz	V_{CB} = 12 V		—	19	—	pF

TYPICAL PERFORMANCE

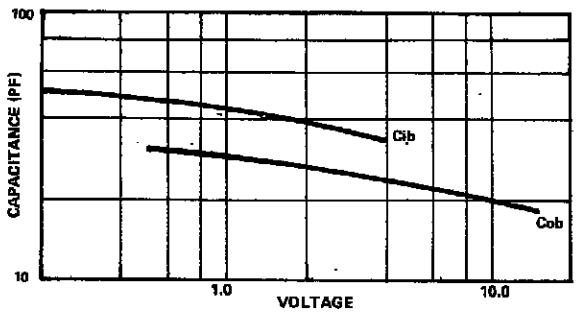
POWER OUTPUT vs POWER INPUT



POWER OUTPUT vs FREQUENCY



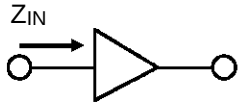
CAPACITANCE vs VOLTAGE



IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

Z_{IN}



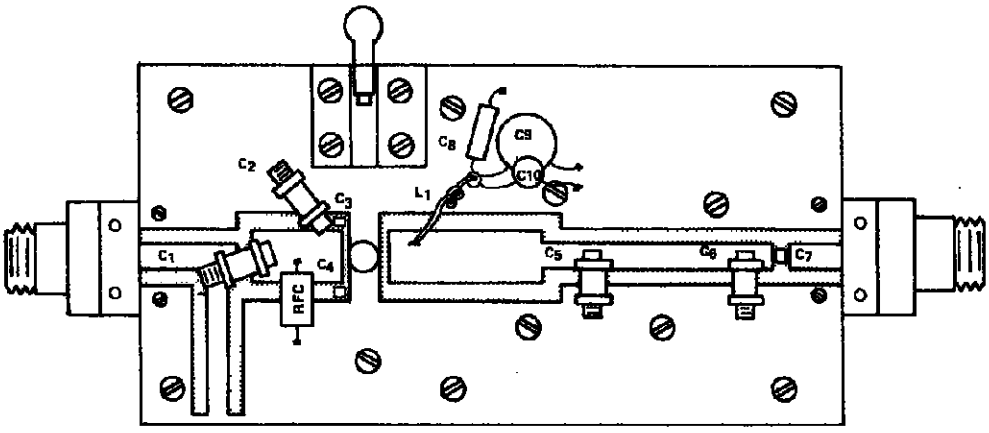
TYPICAL COLLECTOR LOAD IMPEDANCE

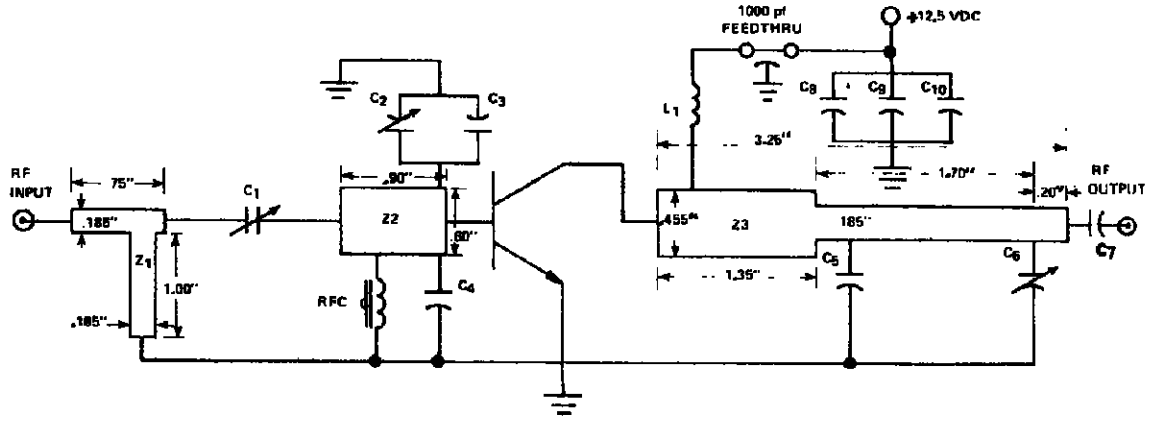
Z_{CL}



FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
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





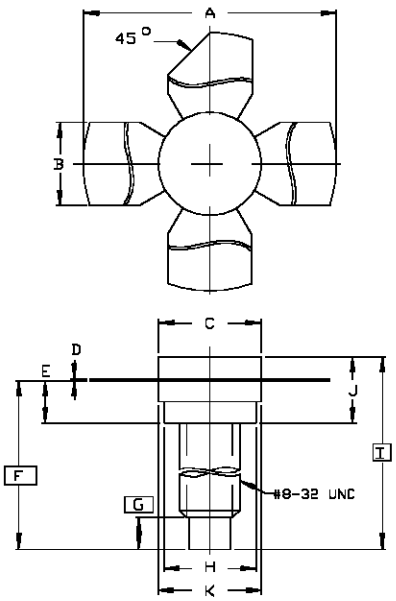
C1,C2, C5,C6 : 0.8-10pF, Voltronics AJ10
C3,C4 : ATC 100-B, 16pF, Chip Capacitor
C7 : ATC 100-B, 620pF, Chip Capacitor
C8 : 5.6µF, 35V, Electrolytic

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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