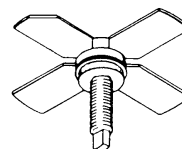


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 450 - 512 MHz
- 12.5 VOLTS
- EFFICIENCY 55%
- COMMON EMITTER
- $P_{OUT} = 2.0 \text{ W MIN. WITH } 10.0 \text{ dB GAIN}$

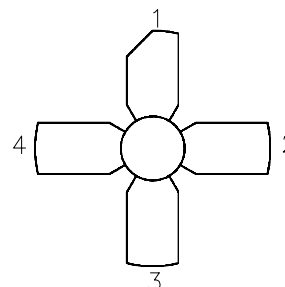


.280 4L STUD (M122)
epoxy sealed

ORDER CODE
SD1134

BRANDING
SD1134

PIN CONNECTION



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

DESCRIPTION

The SD1134 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_{CEO}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	0.75	A
P_{DISS}	Power Dissipation	5	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	35	$^{\circ}\text{C/W}$
---------------	----------------------------------	----	----------------------

SD1134

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

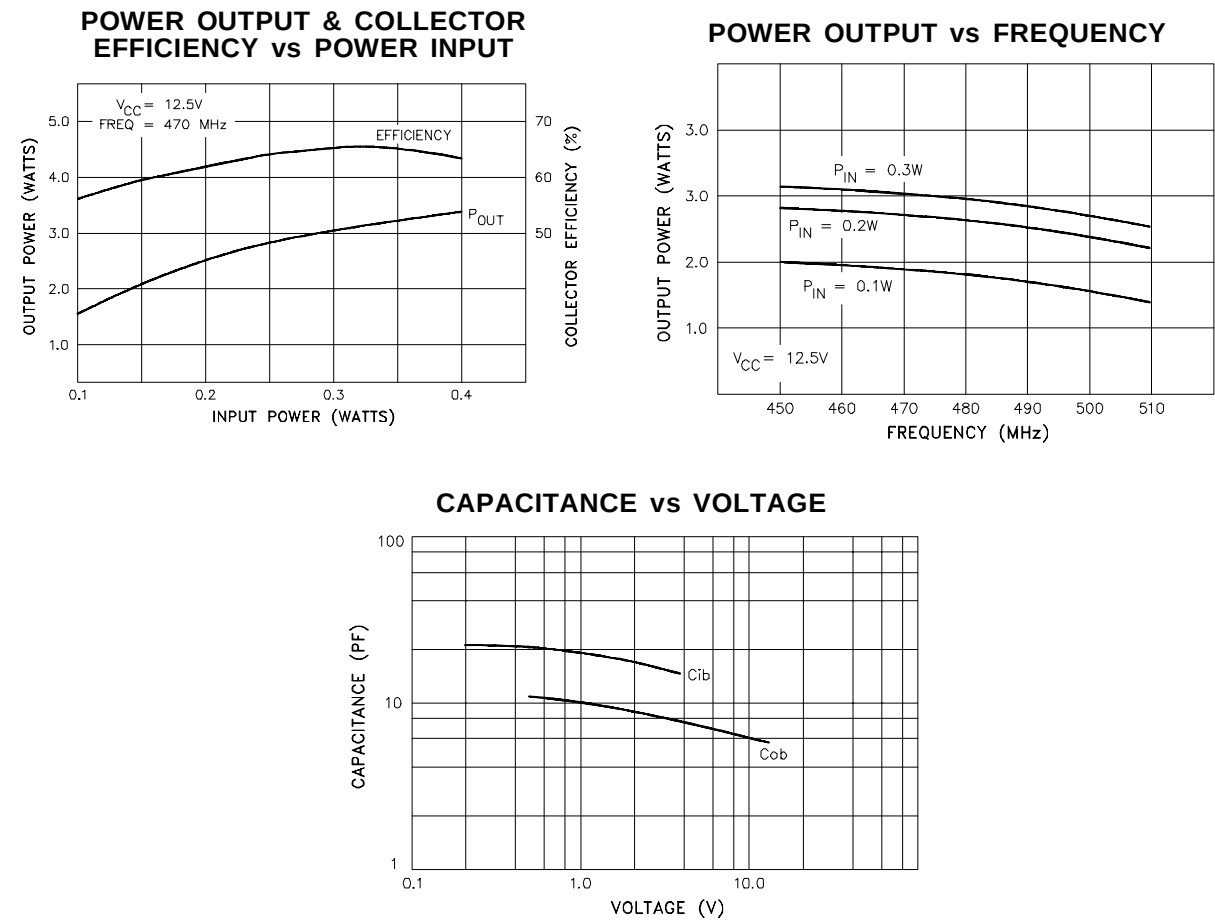
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 5\text{mA}$	$V_{BE} = 0\text{V}$	36	—	—	V
BV_{CEO}	$I_C = 25\text{mA}$	$I_B = 0\text{mA}$	16	—	—	V
BV_{EBO}	$I_E = 1\text{mA}$	$I_C = 0\text{mA}$	4.0	—	—	V
I_{CBO}	$V_{CB} = 15\text{V}$	$I_E = 0\text{mA}$	—	—	1	mA
h_{FE}	$V_{CE} = 5\text{V}$	$I_C = 100\text{mA}$	20	—	—	—

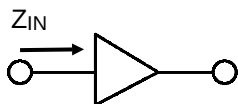
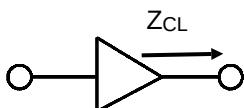
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 470\text{ MHz}$	$P_{IN} = 0.20\text{ W}$	$V_{CC} = 12.5\text{ V}$	2.0	—	—	W
G_P	$f = 470\text{ MHz}$	$P_{IN} = 0.20\text{ W}$	$V_{CC} = 12.5\text{ V}$	10.0	—	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 12\text{ V}$		—	6	—	pF

TYPICAL PERFORMANCE

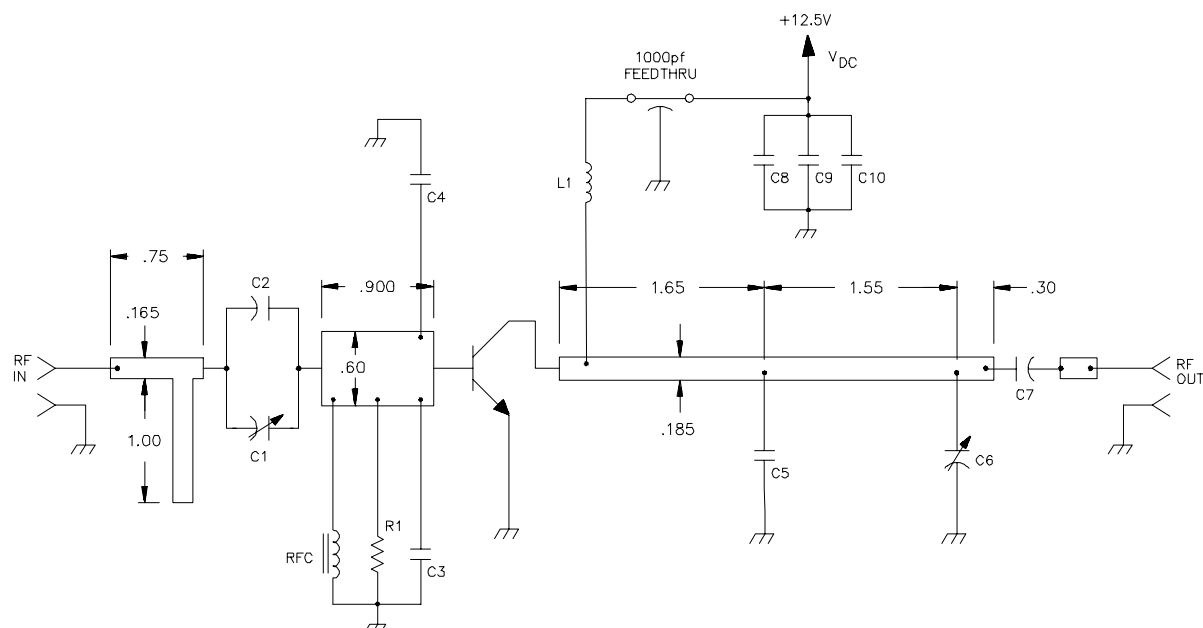


IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
450 MHz	$2.7 + j 0.9$	$11.5 - j 15.0$
470 MHz	$2.6 + j 1.3$	$12.2 - j 13.5$
512 MHz	$2.2 + j 1.7$	$12.7 - j 13.0$

TEST CIRCUIT



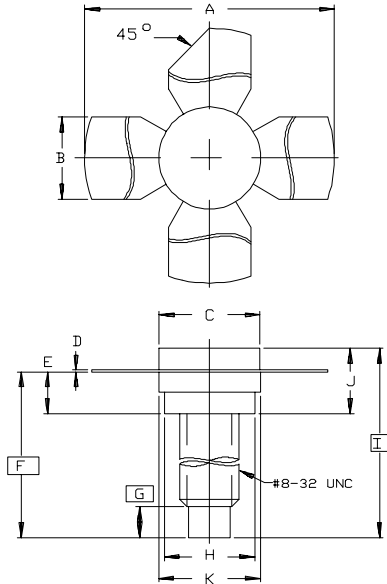
C1 : 0.8-10pF, Voltronics AJ10
 C2, : ATC 100-B, 7.5pF, Chip Capacitor
 C3, C4 : ATC 100-B, 24pF, Chip Capacitor
 C5 : ATC 100-B, 5.6pF, Chip Capacitor
 C6 : 0.6-6pF, Johanson
 C7 : ATC 100-B, 200pF, Chip Capacitor
 C8 : 5.6μF Electrolytic

C9 : 0.1μF, Disc-Ceramic
 C10 : 0.01μF, Disc-Ceramic
 L1 : 2 Turns #22 Enameled 0.1" I.D.
 R1 : 360Ω, 1/4" Wide
 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

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A