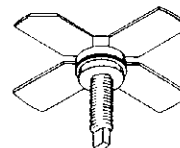


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 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

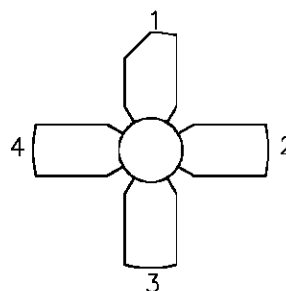
ORDER CODE
SD1134

BRANDING
SD1134

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.

PIN CONNECTION



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

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	$^{\circ}\text{C/W}$
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SD1134

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

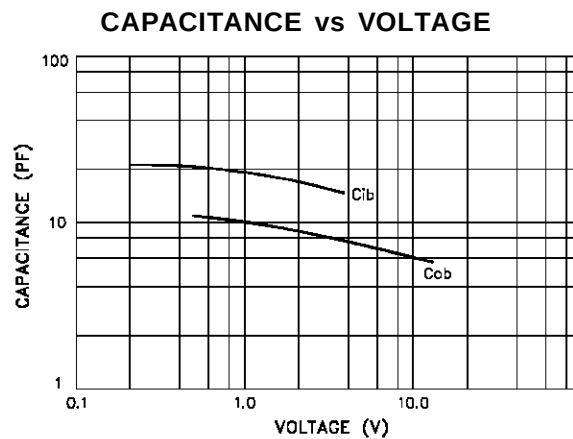
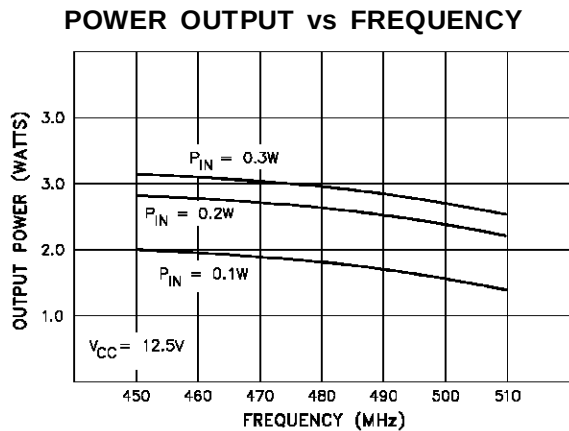
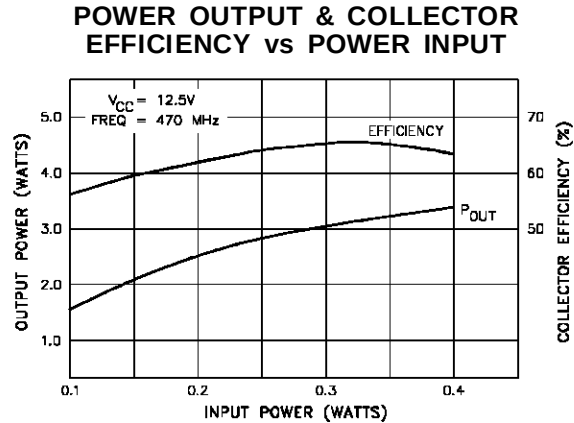
STATIC

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

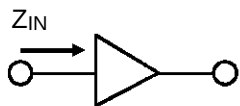
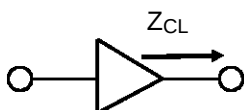
DYNAMIC

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

TYPICAL PERFORMANCE

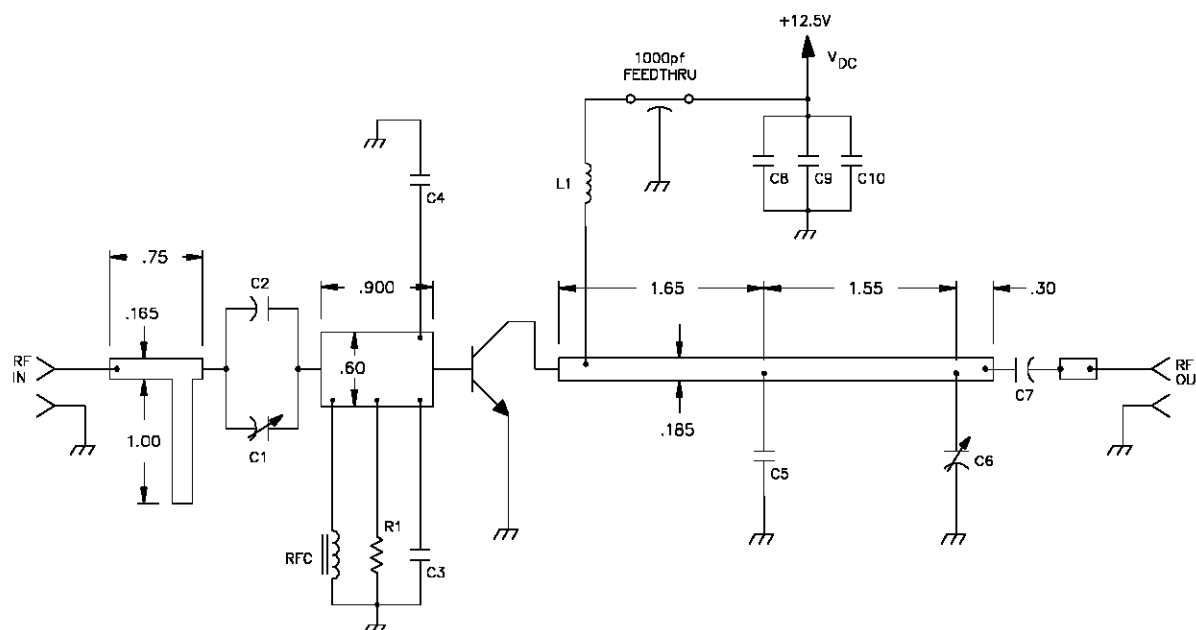


IMPEDANCE DATA

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



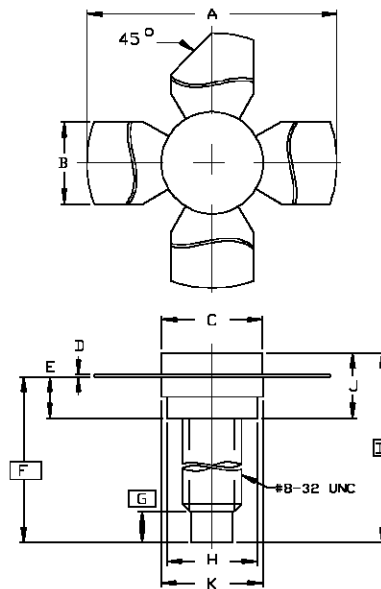
- C1 : 0.8-10pF, Voltronics AJ10
 C2 : ATC 100-B, 7.5pF, Chip Capacitor
 C3, C4 : ATC 100-B, 24pF, Chip Capacitor
 C5 : ATC 100-B, 5.6pF, Chip Capacitor
 C6 : 0.6-6pF, Johanson
 C7 : ATC 100-B, 200pF, Chip Capacitor
 C8 : 5.6μF Electrolytic

- 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

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