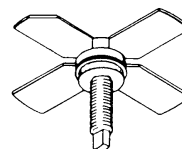


## RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 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

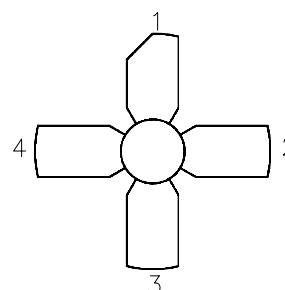
**ORDER CODE**  
SD1134

**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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ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

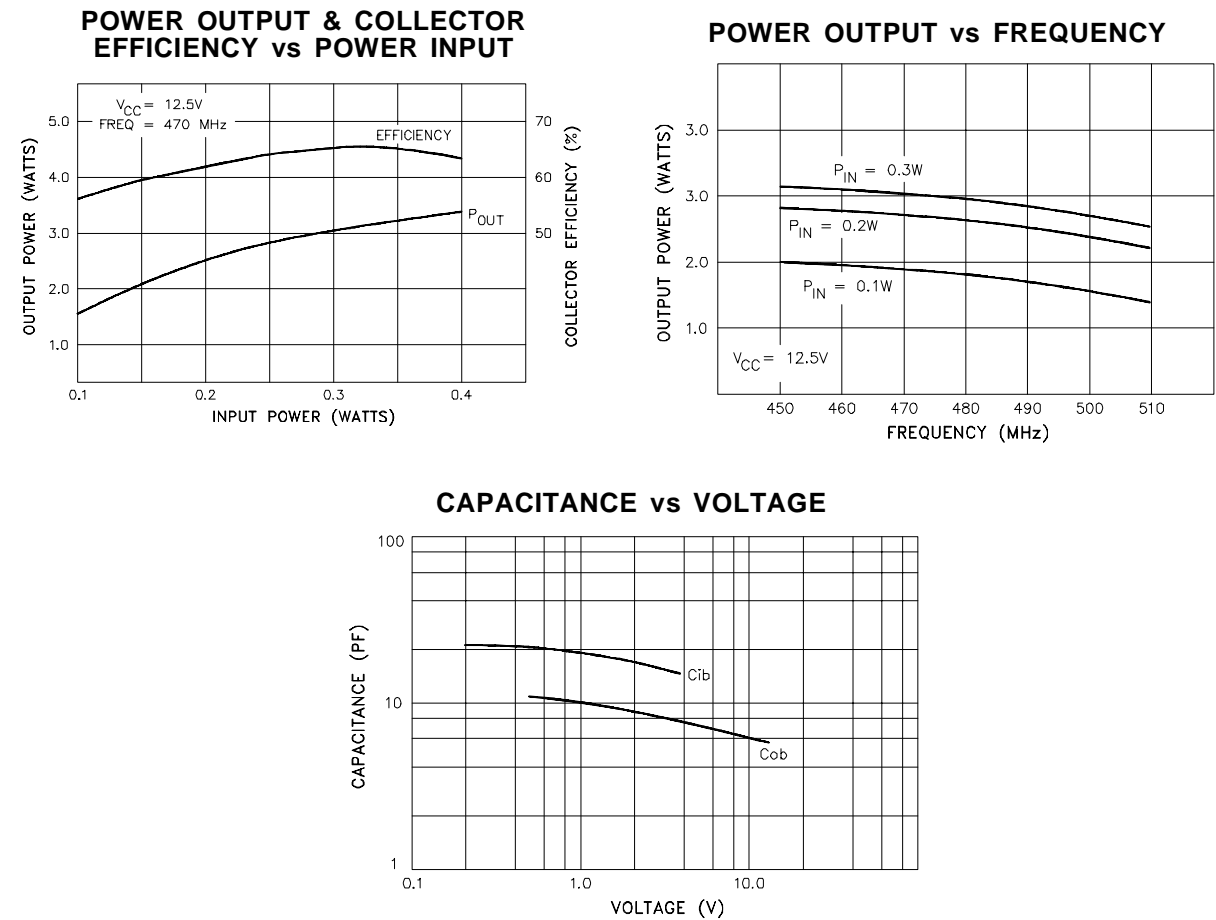
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CES</sub>	I <sub>C</sub> = 5mA	V <sub>BE</sub> = 0V	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 25mA	I <sub>B</sub> = 0mA	16	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	I <sub>C</sub> = 0mA	4.0	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 15V	I <sub>E</sub> = 0mA	—	—	1	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 100mA	20	—	—	—

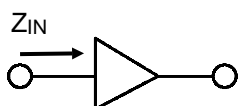
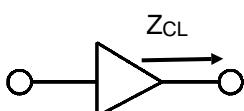
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 470 MHz	P <sub>IN</sub> = 0.20 W	V <sub>CC</sub> = 12.5 V	2.0	—	—	W
G <sub>P</sub>	f = 470 MHz	P <sub>IN</sub> = 0.20 W	V <sub>CC</sub> = 12.5 V	10.0	—	—	dB
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 12 V		—	6	—	pF

TYPICAL PERFORMANCE

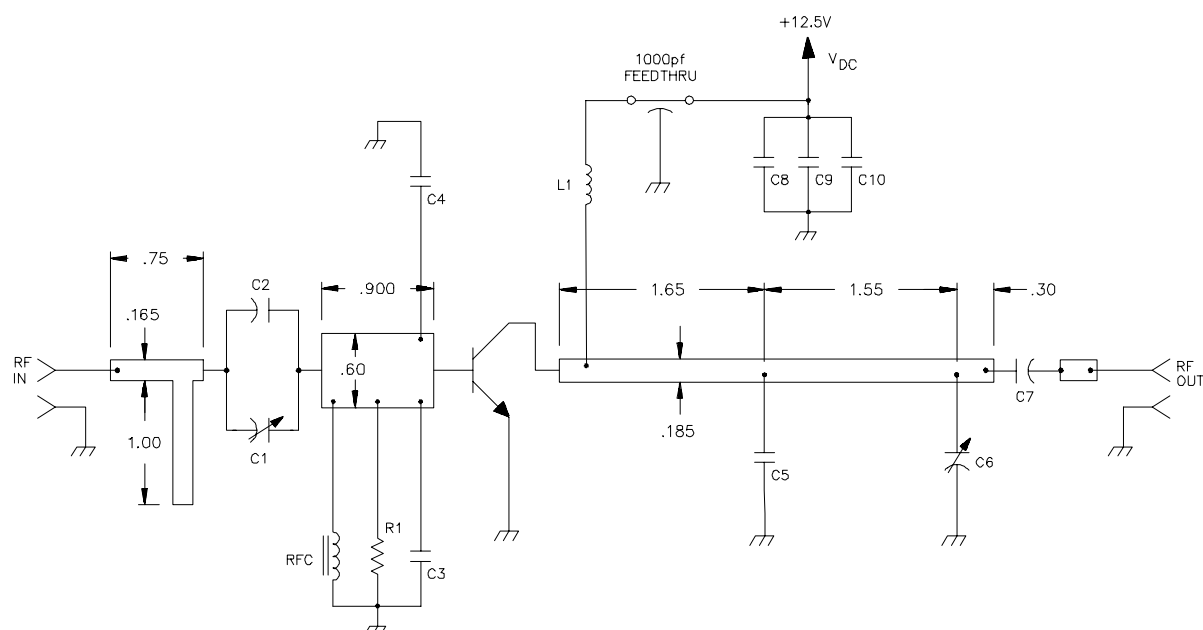


## IMPEDANCE DATA

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



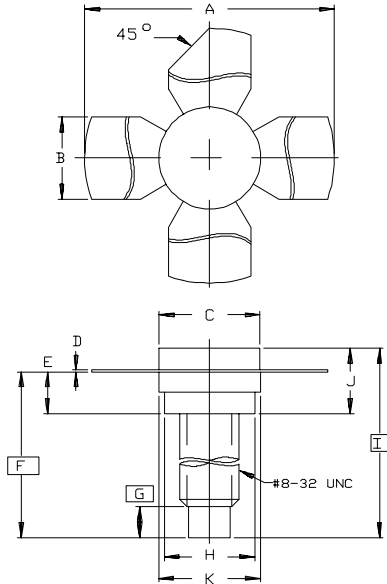
C1 : 0.8-10pF, Voltronics AJ10  
 C2, : ATC 100-B, 7.5pF, Chip Capacitor  
 C3, C4 : ATC 100-B, 24pF, Chip Capacitor  
 C5 : ATC 100-B, 5.6pF, Chip Capacitor  
 C6 : 0.6-6pF, Johanson  
 C7 : ATC 100-B, 200pF, Chip Capacitor  
 C8 : 5.6μF Electrolytic

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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