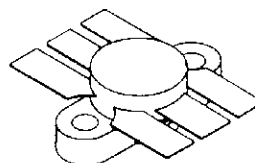


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 470 MHz
- 12.5 VOLTS
- COMMON EMITTER
- $P_{OUT} = 45 \text{ W MIN. WITH } 5.0 \text{ dB GAIN}$



.500 6LFL (M111)
epoxy sealed

ORDER CODE

SD1434

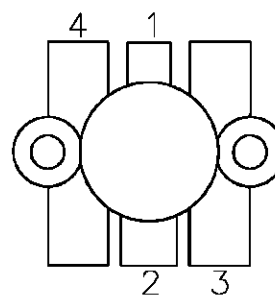
BRANDING

SD1434

DESCRIPTION

The SD1434 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for UHF communications. This device utilizes diffused emitter resistors to achieve infinite VSWR under operating conditions.

PIN CONNECTION



- | | |
|--------------|------------|
| 1. Collector | 3. Emitter |
| 2. Base | 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	10.0	A
P_{DISS}	Power Dissipation	175	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	1.0	$^{\circ}\text{C/W}$
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SD1434

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

STATIC

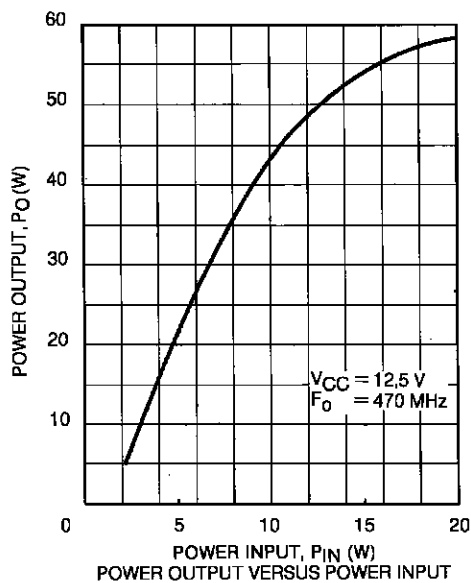
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 5\text{mA}$	$I_{\text{E}} = 0\text{mA}$	36	—	—	V
BV_{CES}	$I_{\text{C}} = 20\text{mA}$	$V_{\text{BE}} = 0\text{V}$	36	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{B}} = 0\text{mA}$	16	—	—	V
BV_{EBO}	$I_{\text{E}} = 5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CES}	$V_{\text{CE}} = 22\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	5	mA
I_{CBO}	$V_{\text{CB}} = 15\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	5	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 1\text{A}$	20	—	200	—

DYNAMIC

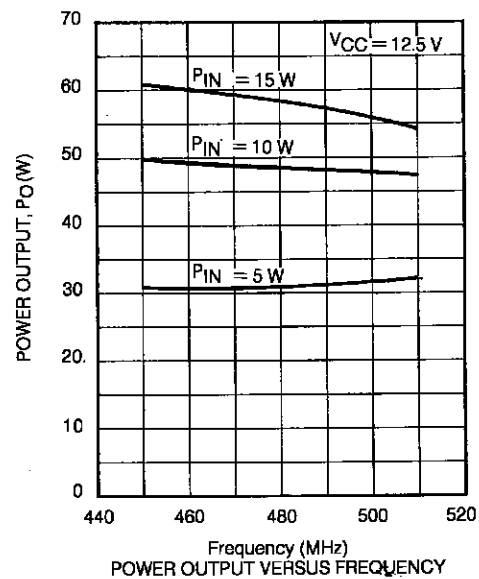
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 470\text{ MHz}$	$P_{\text{IN}} = 14\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	45	—	—	W
G_{P}	$f = 470\text{ MHz}$	$P_{\text{IN}} = 14\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	5	—	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 12.5\text{ V}$		—	130	—	pF

TYPICAL PERFORMANCE

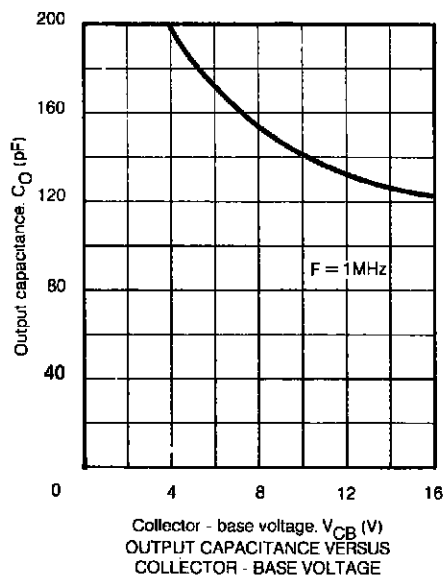
POWER OUTPUT vs POWER INPUT



POWER OUTPUT vs FREQUENCY

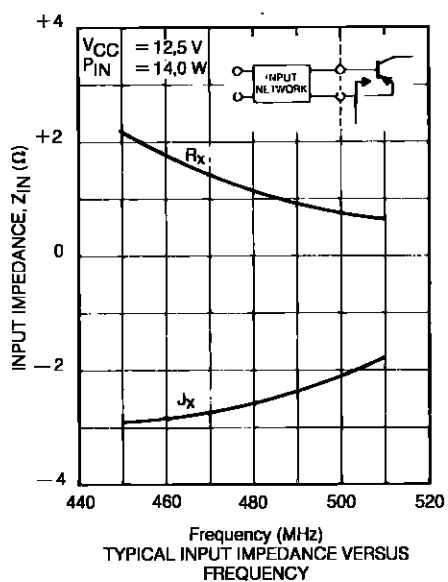
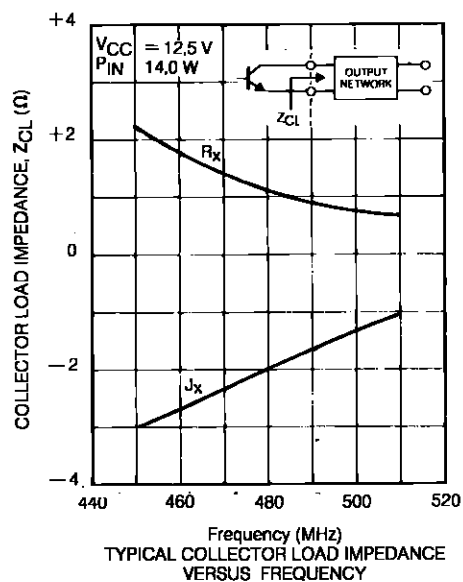


TYPICAL PERFORMANCE (cont'd)

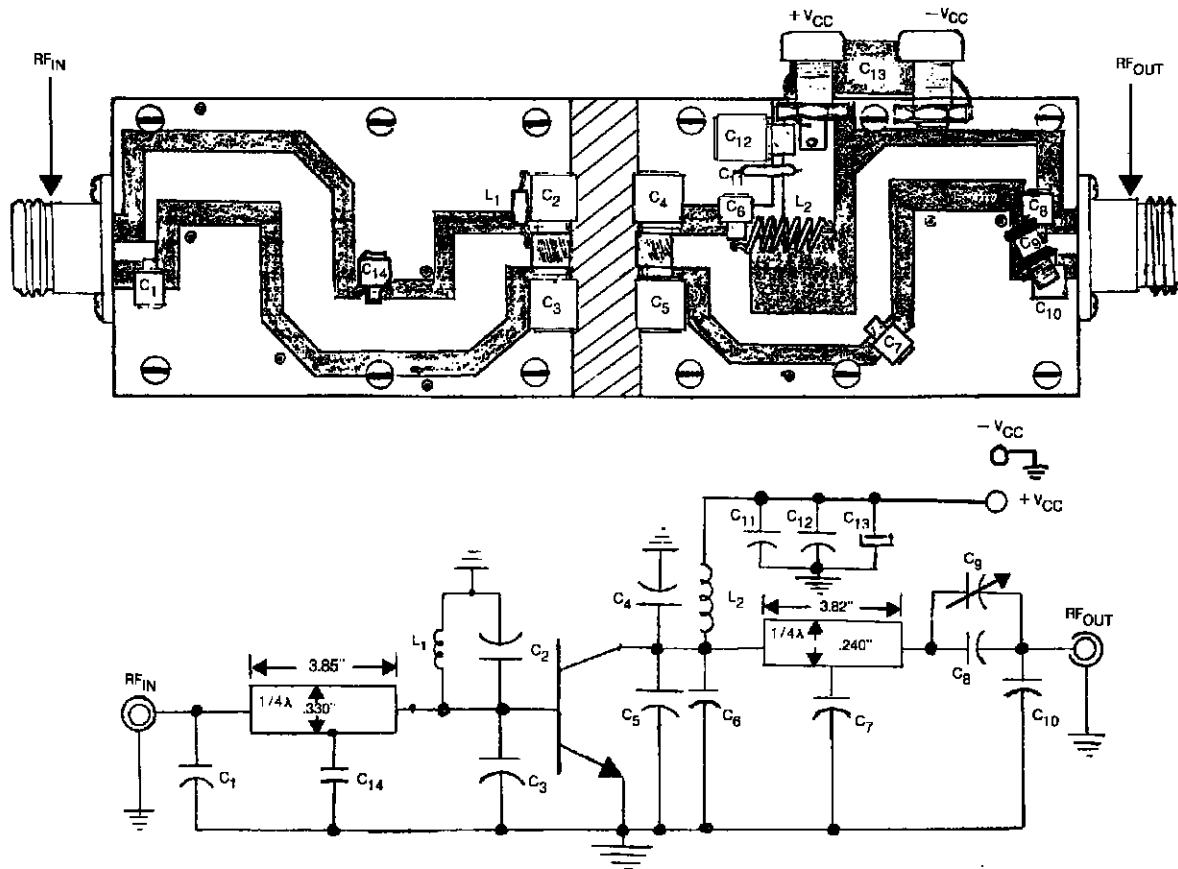
OUTPUT CAPACITANCE vs COLLECTOR
BASE VOLTAGE

IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

TYPICAL COLLECTOR LOAD
IMPEDANCE

TEST CIRCUIT



- C1 : 10pF Unelco, 200 mil Sq.
 C2 : 36pF Unelco, 400 mil Sq.
 C3 : 34pF Unelco, 400 mil Sq.
 C4 : 36pF Unelco, 400 mil Sq.
 C5 : 38pF Unelco, 400 mil Sq.
 C6 : 16pF Unelco, 200 mil Sq.
 C7 : 10pF Unelco, 200 mil Sq.
 C8 : 25pF Unelco, 200 mil Sq.
 C9 : 1 - 12pF, ATC Variable
 C10 : 6pF Unelco, 200 mil Sq.

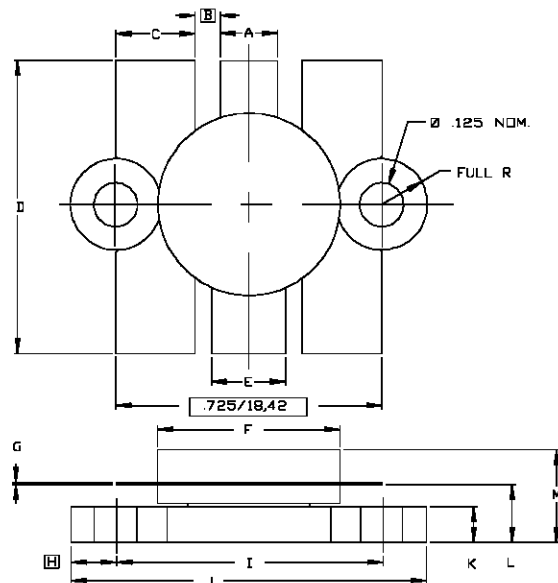
- C11 : .01 μ F 50V, Erie Disc
 C12 : 1000pF Unelco, 400 mil Sq.
 C13 : 47 μ F 63V, Sprague Electrolytic
 C14 : 10pF Unelco, 200 mil Sq.

- L1 : 27 μ H Molded
 L2 : 6 Turns, #18 AWG, .175" I.D.

Material : Pc Board, Double Sided Copper 1/32" Thick
 Teflon-Glass, 3M-K-6098

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0111



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.150/3,43	.160/4,06	K	.095/2,41	.105/2,67
B	.045/1,14		L	.150/3,81	.170/4,32
C	.210/5,33	.220/5,59	M		.280/7,11
D	.835/21,21	.865/21,97			
E	.200/5,08	.210/5,33			
F	.490/12,45	.510/12,95			
G	.003/0,08	.007/0,18			
H	.125/3,18				
I	.720/18,29	.730/18,54			
J	.970/24,64	.980/24,89			

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