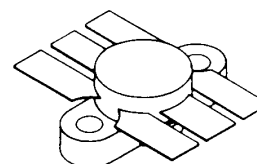


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

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



.500 6LFL (M111)
epoxy sealed

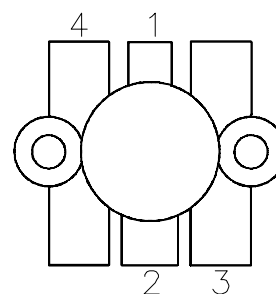
ORDER CODE
SD1434

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

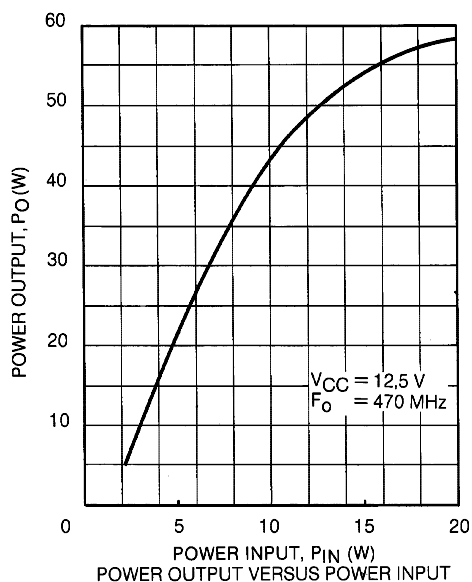
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 5\text{mA}$	$I_{\text{E}} = 0\text{mA}$	36	—	—	V
BV_{CES}	$I_{\text{C}} = 20\text{mA}$	$V_{\text{BE}} = 0\text{V}$	36	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{B}} = 0\text{mA}$	16	—	—	V
BV_{EBO}	$I_{\text{E}} = 5\text{mA}$	$I_{\text{C}} = 0\text{mA}$	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

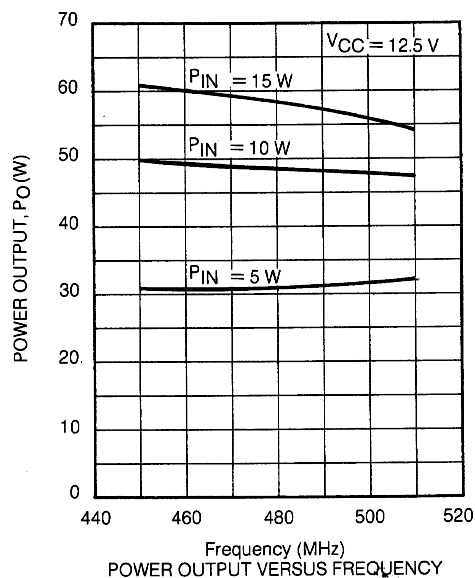
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 470\text{ MHz}$	$P_{\text{IN}} = 14\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	45	—	—	W
G_{P}	$f = 470\text{ MHz}$	$P_{\text{IN}} = 14\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	5	—	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 12.5\text{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

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT

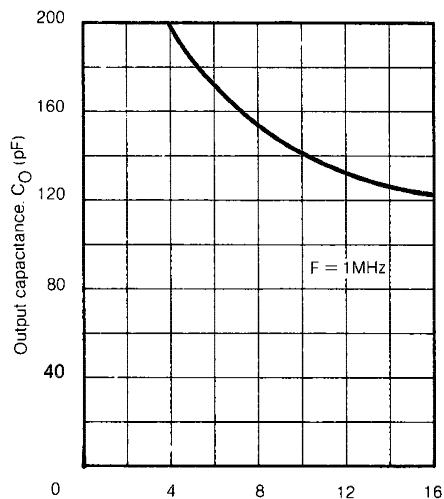


POWER OUTPUT vs FREQUENCY



TYPICAL PERFORMANCE (cont'd)

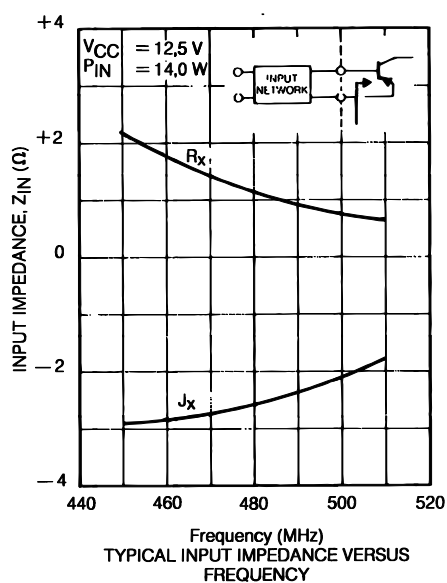
OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE



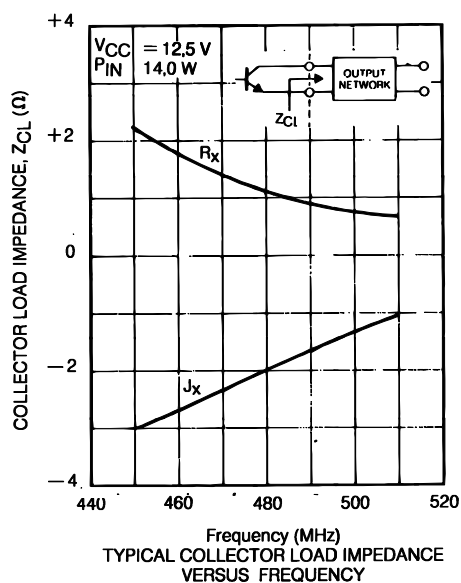
Collector - base voltage, V_{CB} (V)
 OUTPUT CAPACITANCE VERSUS
 COLLECTOR - BASE VOLTAGE

IMPEDANCE DATA

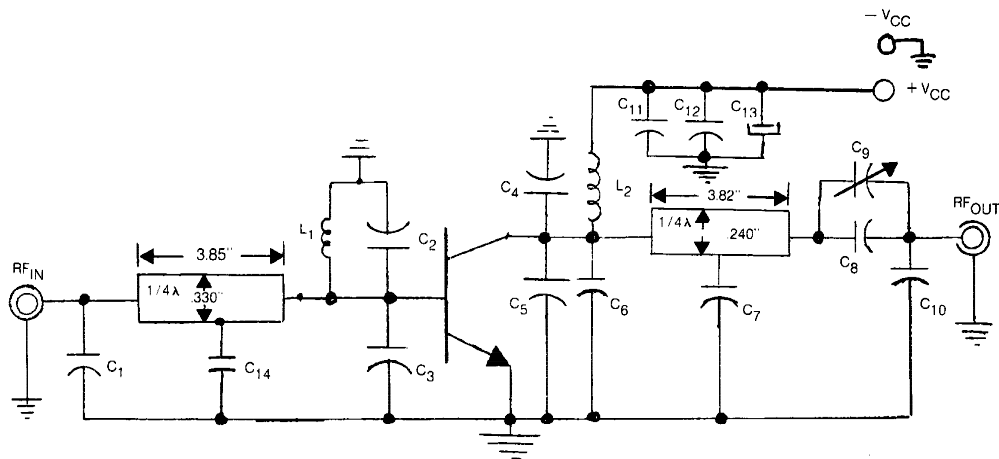
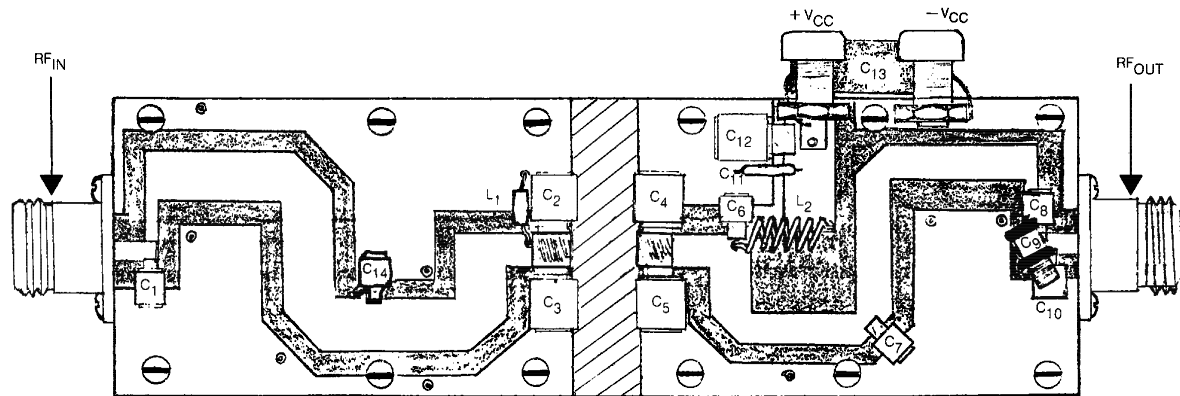
TYPICAL INPUT IMPEDANCE



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.

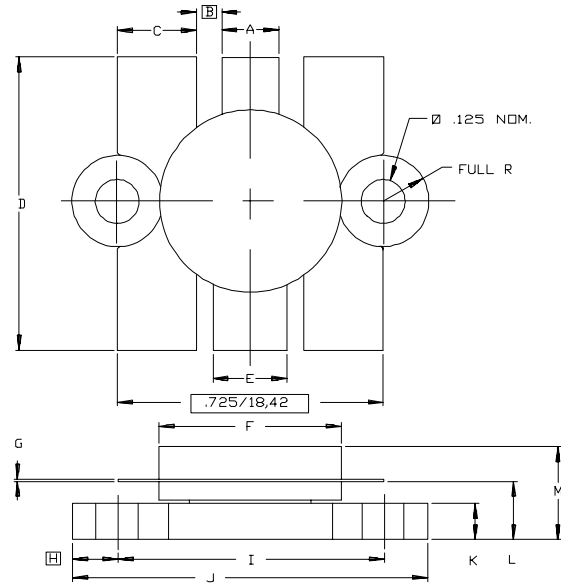
C11 : .01μF 50V, Erie Disc
 C12 : 1000pF Unelco, 400 mil Sq.
 C13 : 47μF 63V, Sprague Electrolytic
 C14 : 10pF Unelco, 200 mil Sq.

L1 : 27μH 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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