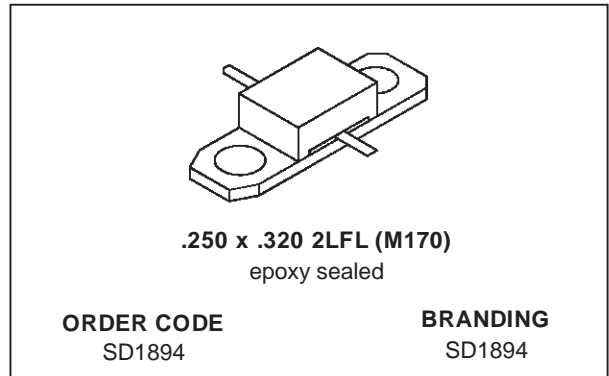


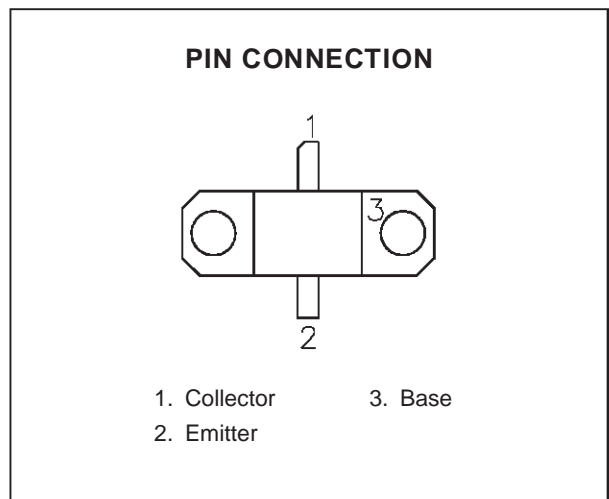
RF & MICROWAVE TRANSISTORS SATELLITE COMMUNICATIONS APPLICATIONS

- CLASS C
- 1.6 GHz
- COMMON BASE
- REFRACTORY/GOLD METALLIZATION
- EFFICIENCY = 50% MIN.
- $P_{OUT} = 4.5 \text{ W MIN. WITH } 10 \text{ dB GAIN}$


DESCRIPTION

The SD1894 is a common base silicon NPN bipolar device optimized for 1.6 GHz SATCOM applications.

The SD1894 offers superior gain and collector efficiency, making it an ideal choice for Class C power amplifiers used in portable as well as fixed SATCOM terminals.


ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	45	V
V _{CES}	Collector-Emitter Voltage	45	V
V _{EBO}	Emitter-Base Voltage	3.0	V
I _C	Device Current	375	mA
P _{DISS}	Power Dissipation	12.5	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	14.0	°C/W
----------------------	----------------------------------	------	------

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

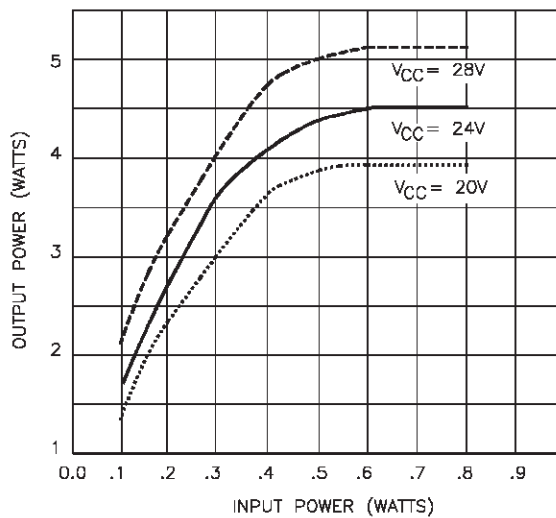
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 1\text{ mA}$	$I_E = 0\text{ mA}$	45	—	—	V
BV_{CES}	$I_C = 1\text{ mA}$	$V_{BE} = 0\text{ V}$	45	—	—	V
BV_{EBO}	$I_E = 1\text{ mA}$	$I_C = 0\text{ mA}$	3.0	—	—	V
I_{CBO}	$V_{CB} = 28\text{ V}$	$I_E = 0\text{ mA}$	—	—	.25	mA
h_{FE}	$V_{CE} = 5\text{ V}$	$I_C = .2\text{ A}$	15	—	150	—

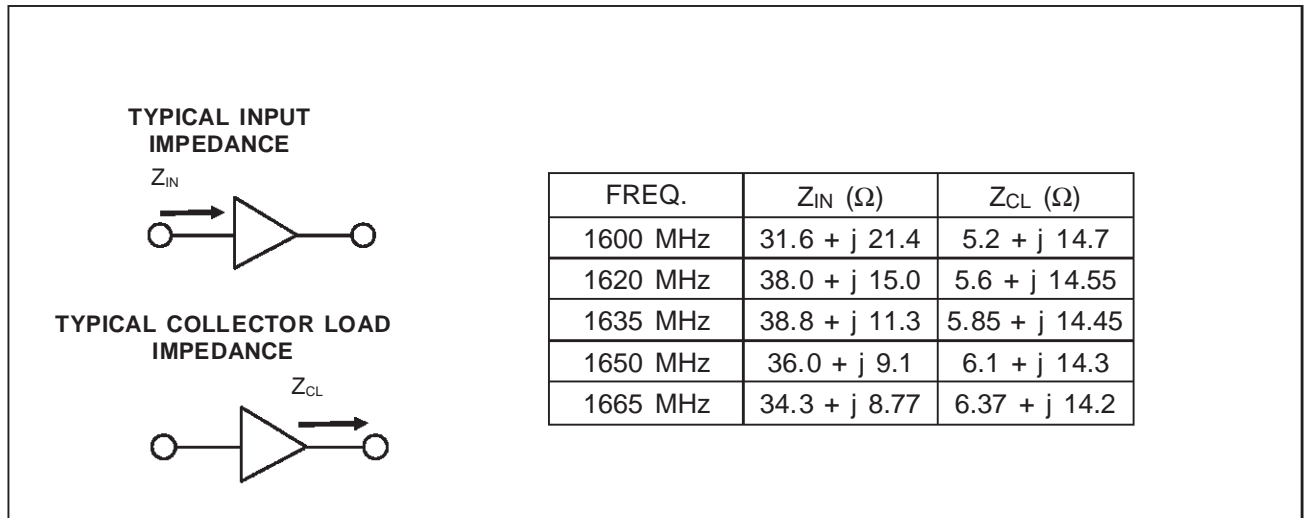
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{IN}	$f = 1650\text{ MHz}$	$V_{CC} = 28\text{ V}$	$P_{OUT} = 4.5\text{ W}$	—	.35	.45	W
η_C	$f = 1650\text{ MHz}$	$V_{CC} = 28\text{ V}$	$P_{OUT} = 4.5\text{ W}$	50	55	—	%
P_G	$f = 1650\text{ MHz}$	$V_{CC} = 28\text{ V}$	$P_{OUT} = 4.5\text{ W}$	10.0	11.1	—	dB
Load Mismatch	$V_{CC} = 28\text{ V}$	$P_{OUT} = 4.5\text{ W}$	$V_{SWR} = 20:1$	No Degradation in Output Power			

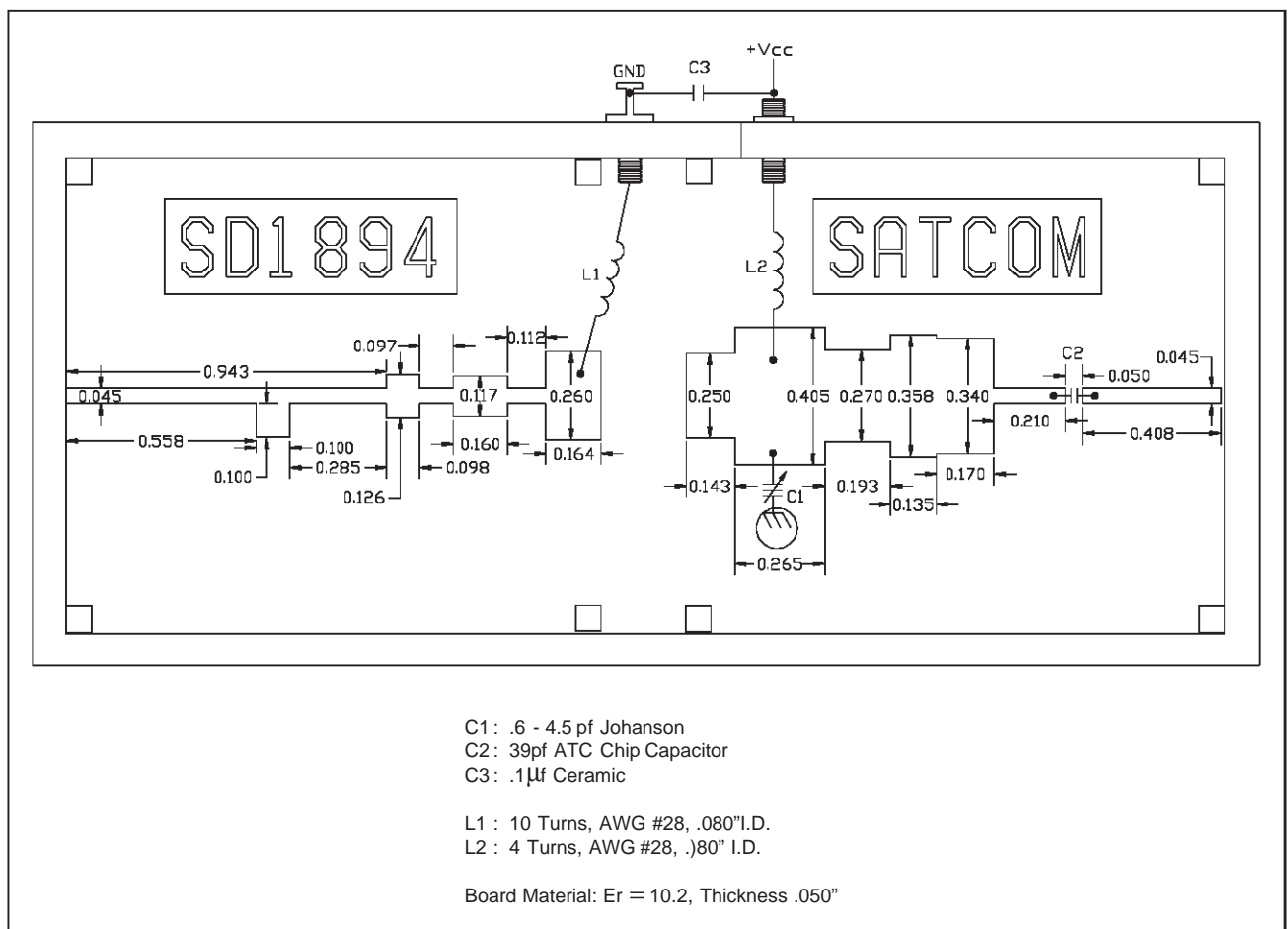
INPUT POWER vs OUTPUT POWER



IMPEDANCE DATA

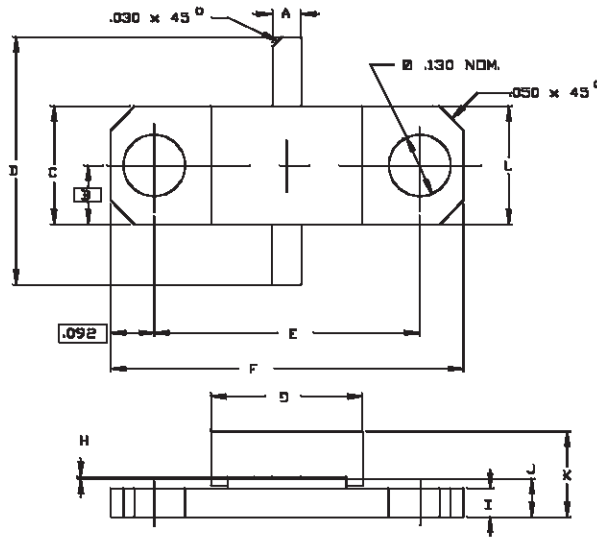


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0170
UDCS No. 1010996 rev B



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.055/1,40	.065/1,65	K		.190/4,83
B	.124/3,15		L	.245/6,22	.255/6,48
C	.243/6,17	.253/6,43			
D	.635/16,13	.665/16,89			
E	.555/14,10	.565/14,35			
F	.739/18,77	.749/19,02			
G	.315/8,00	.325/8,26			
H	.002/0,05	.006/0,15			
I	.055/1,40	.065/1,65			
J	.075/1,91	.095/2,41			

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 result 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.

©1997 SGS-THOMSON Microelectronics - All Rights Reserved

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