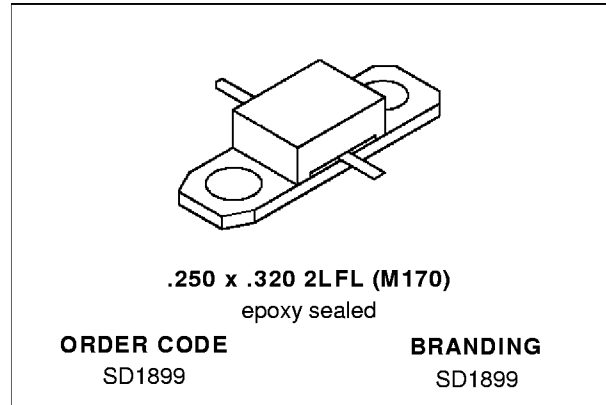


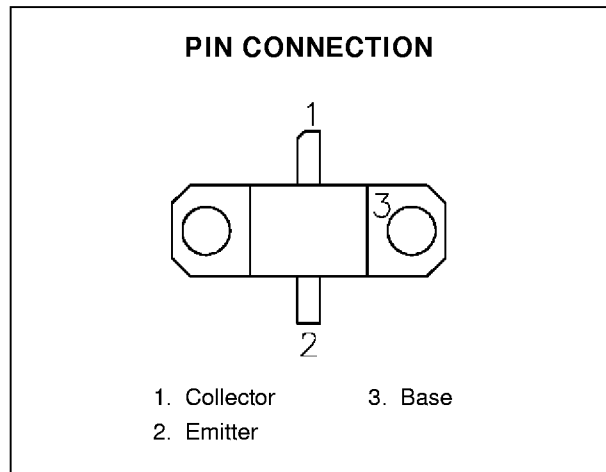
RF & MICROWAVE TRANSISTORS SATELLITE COMMUNICATIONS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EFFICIENCY - 50% TYPICAL
- P_{OUT} = 30 W MIN. WITH 9.3 dB GAIN


DESCRIPTION

The SD1899 is a common base silicon NPN bipolar device optimized for 1.6 GHz SATCOM applications.

SD1899 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°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	3.5	A
P _{DISS}	Power Dissipation (+25°C)	64.8	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	2.7	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

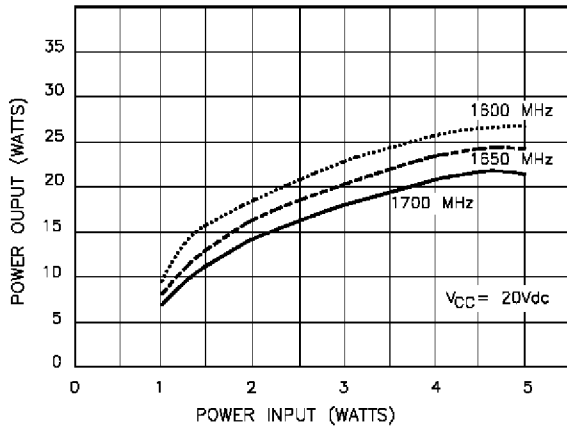
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 8 \text{ mA}$	$I_{\text{E}} = 0 \text{ mA}$	45	—	—	V
BV_{CES}	$I_{\text{C}} = 8 \text{ mA}$	$V_{\text{BE}} = 0 \text{ V}$	45	—	—	V
BV_{EBO}	$I_{\text{E}} = 8 \text{ mA}$	$I_{\text{C}} = 0 \text{ mA}$	3.0	—	—	V
I_{CBO}	$V_{\text{CB}} = 28 \text{ V}$	$I_{\text{E}} = 0 \text{ mA}$	—	—	2	mA
h_{FE}	$V_{\text{CE}} = 5 \text{ V}$	$I_{\text{C}} = 1.6 \text{ A}$	15	—	150	—

DYNAMIC

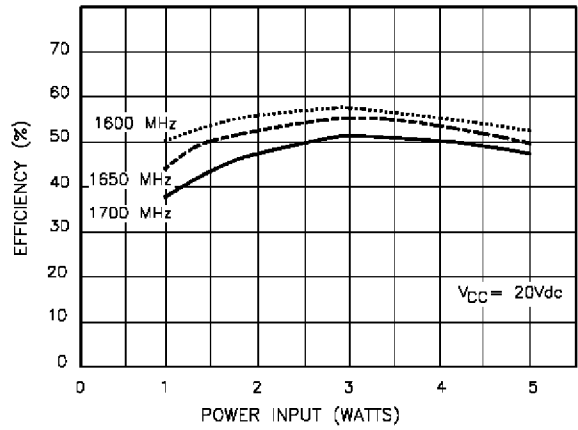
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1650 \text{ MHz}$	$V_{\text{CC}} = 28 \text{ V}$	$P_{\text{IN}} = 3.5 \text{ W}$	30	32	—	W
η_{c}	$f = 1650 \text{ MHz}$	$V_{\text{CC}} = 28 \text{ V}$	$P_{\text{IN}} = 3.5 \text{ W}$	45	50	—	%
P_{G}	$f = 1650 \text{ MHz}$	$V_{\text{CC}} = 28 \text{ V}$		9.3	—	—	dB

TYPICAL PERFORMANCE

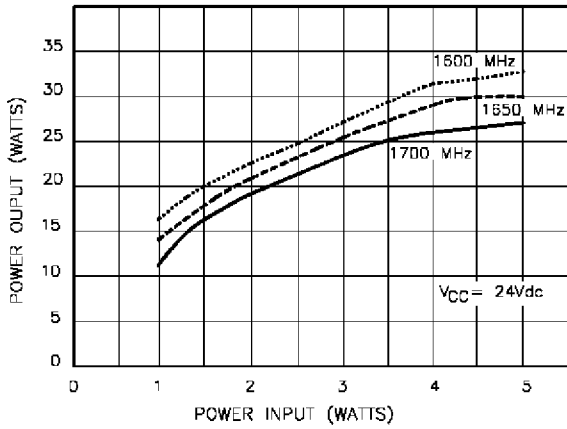
POWER INPUT vs POWER OUTPUT



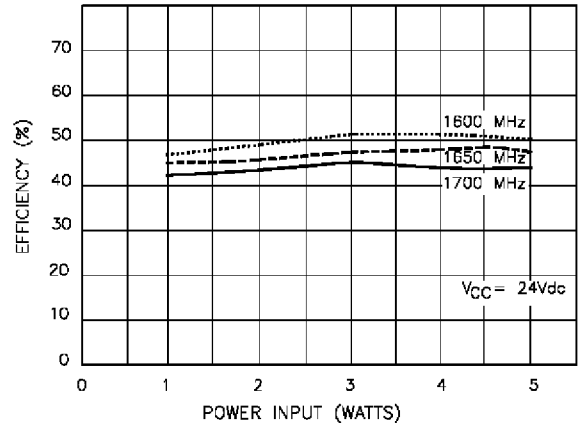
POWER INPUT vs EFFICIENCY



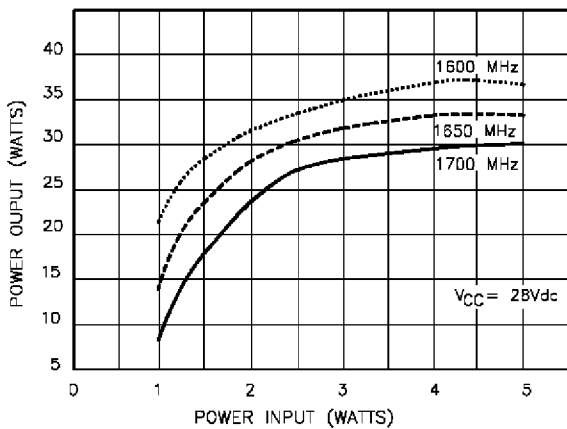
POWER INPUT vs POWER OUTPUT



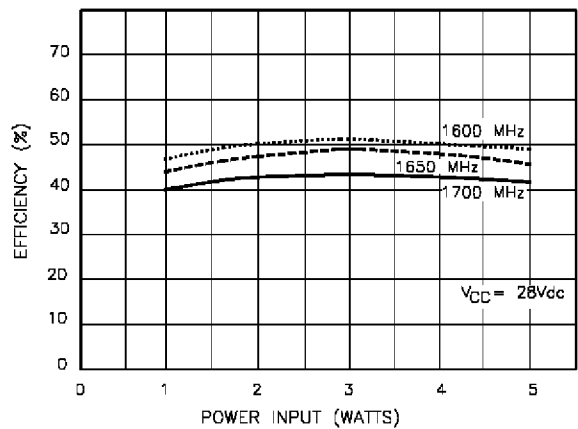
POWER INPUT vs EFFICIENCY



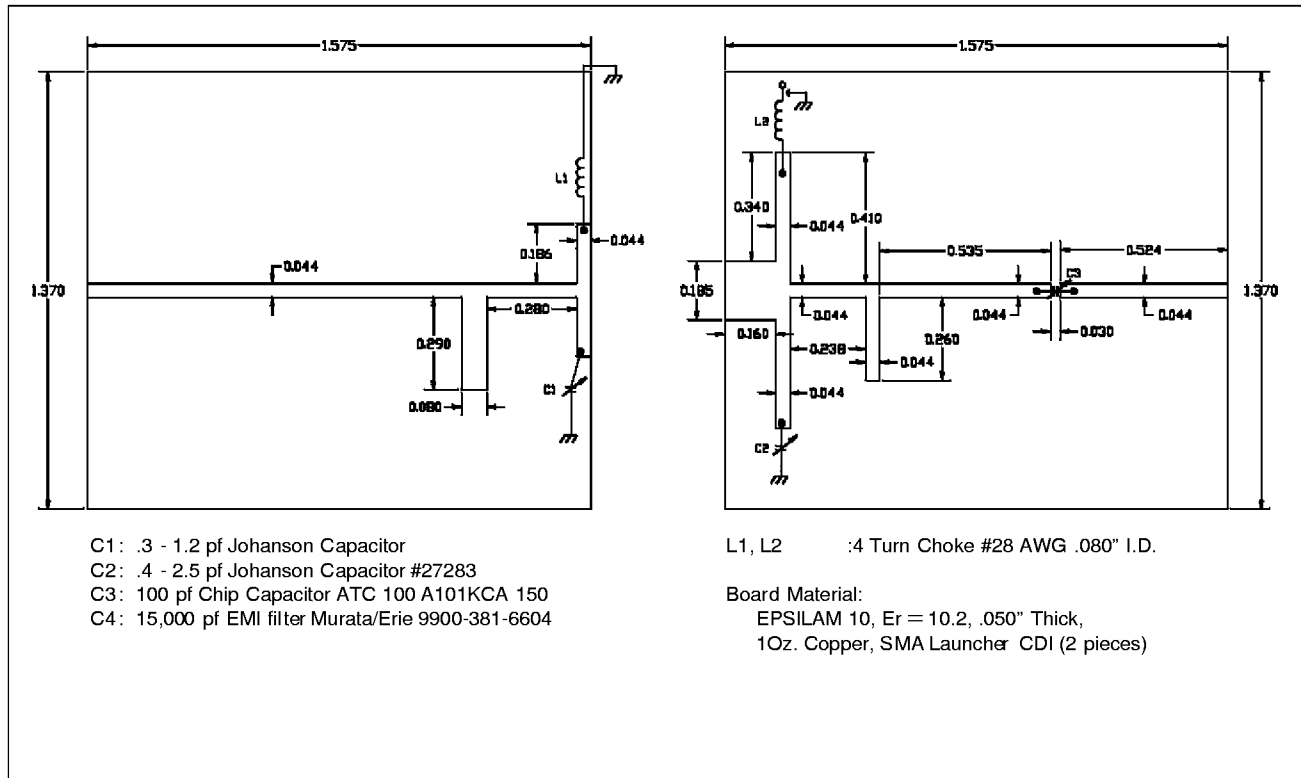
POWER INPUT vs POWER OUTPUT



POWER INPUT vs EFFICIENCY

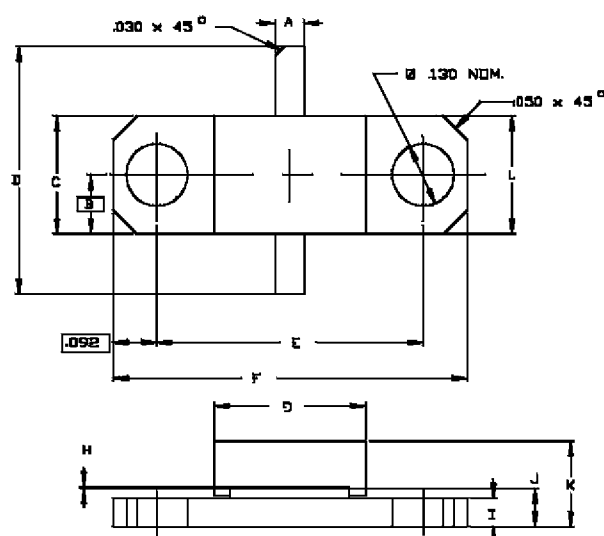


TEST CIRCUIT



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	.535/14,10	.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			

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