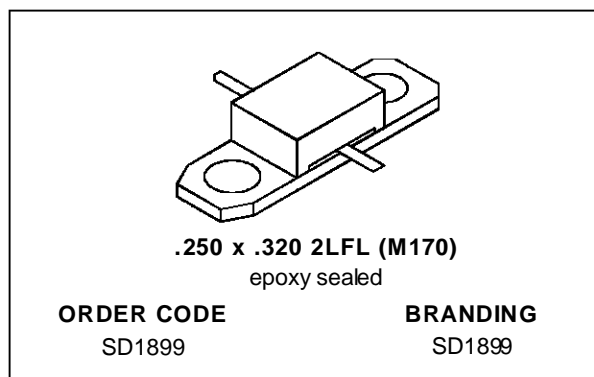


RF & MICROWAVE TRANSISTORS SATELLITE COMMUNICATIONS APPLICATIONS

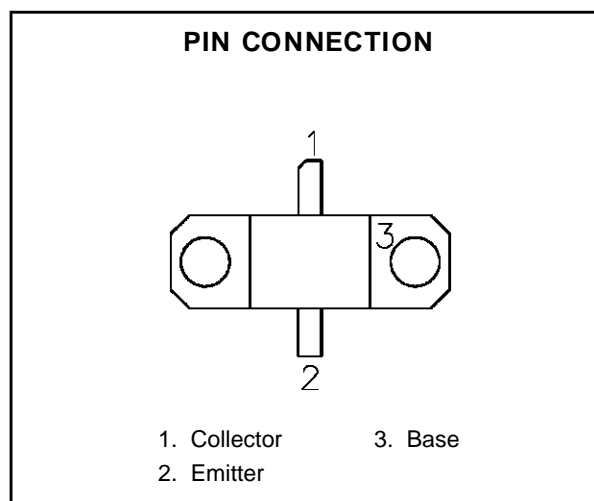
- REFRACTORY/GOLD METALLIZATION
- EFFICIENCY - 50% TYPICAL
- P_{OUT} = 30 W MIN. WITH 9.3 dB GAIN



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 _{CB0}	Collector-Base Voltage	45	V
V _{CES}	Collector-Emitter Voltage	45	V
V _{EBO}	Emitter-Base Voltage	3.0	V
I _c	Device Current	2.9	A
P _{DISS}	Power Dissipation (+25°C)	73	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	2.4	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

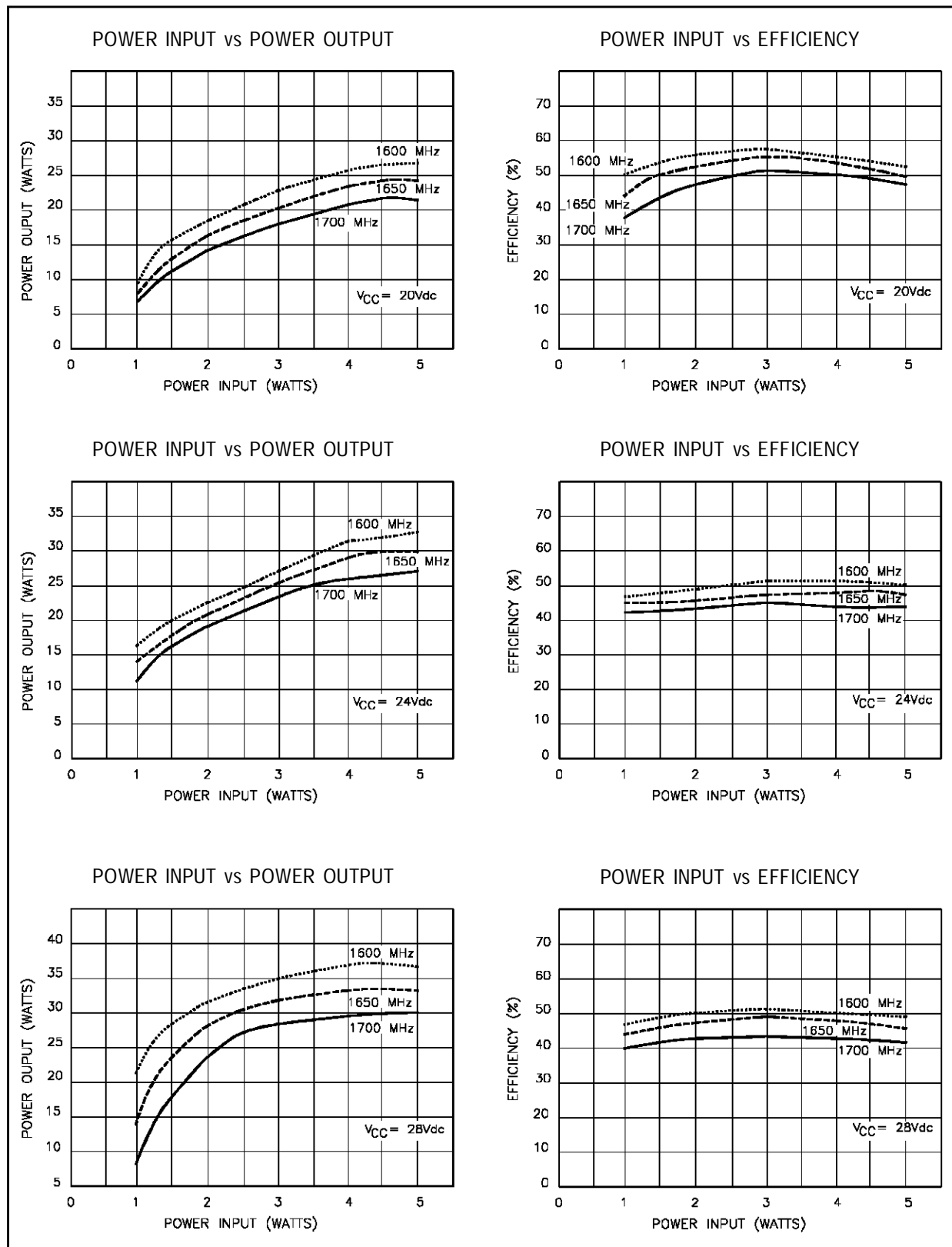
STATIC

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	—

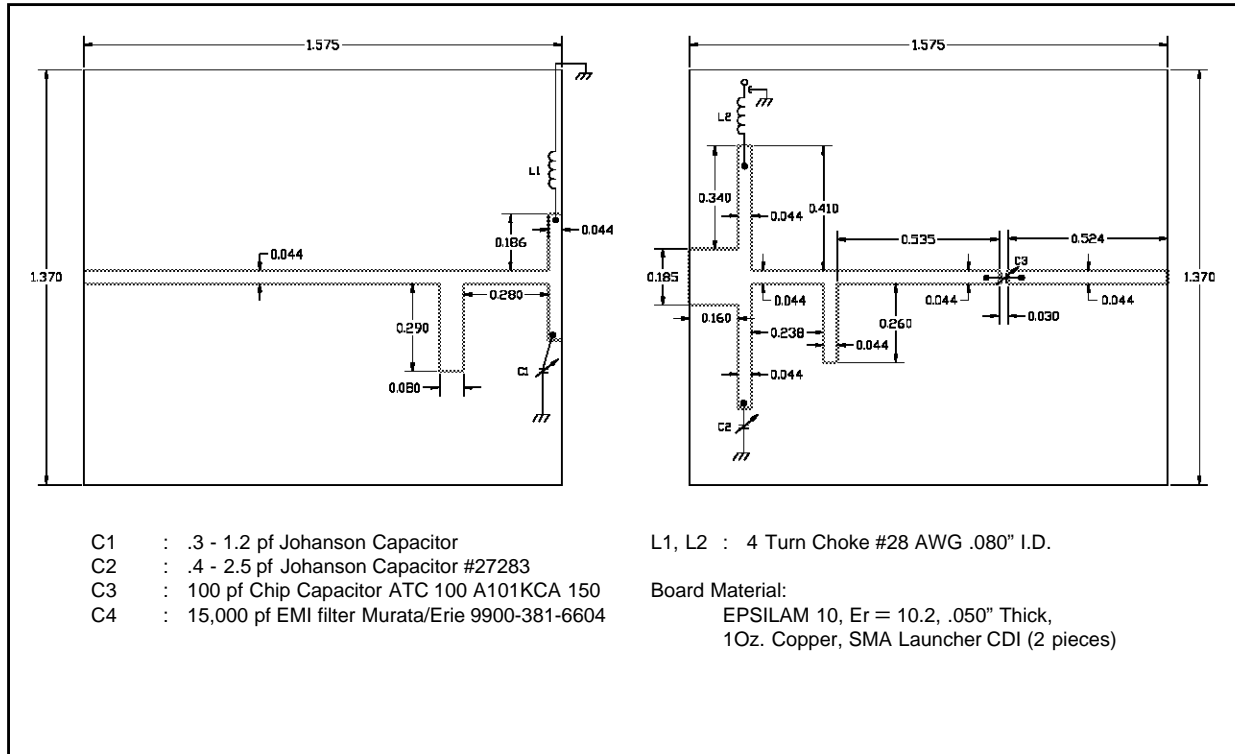
DYNAMIC

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	—	%
G_{P}	$f = 1650 \text{ MHz}$	$V_{\text{CC}} = 28 \text{ V}$		9.3	—	—	dB

TYPICAL PERFORMANCE

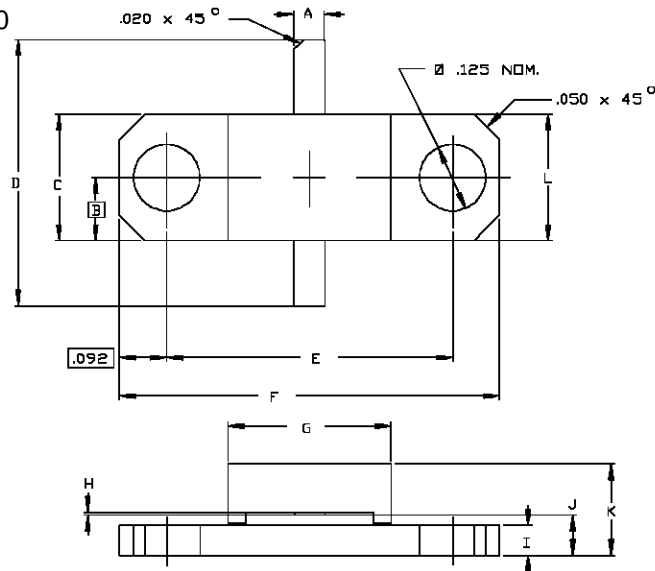


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref. Dwg. No.:12-0170



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			

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