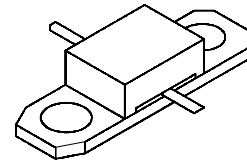


RF & MICROWAVE TRANSISTORS 1.65 GHz SATCOM APPLICATIONS

- 1.65 GHz
- 28 VOLTS
- CLASS C OPERATION
- COMMON BASE
- $P_{OUT} = 10\text{ W MIN. WITH } 11.0\text{ dB GAIN}$



.250 x .320 2LFL (M170)
epoxy sealed

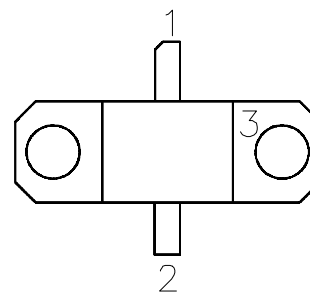
ORDER CODE
SD1897

BRANDING
1897

DESCRIPTION

The SD1897 is a 28 V Class C silicon NPN transistor designed for INMARSAT and other 1.65 GHz SATCOM applications. A gold metallized emitter-ballasted die geometry is employed providing high gain and efficiency while ensuring long term reliability and ruggedness under severe operating conditions. SD1897 is packaged in a cost-effective epoxy sealed housing.

PIN CONNECTION



1. Collector 3. Base
2. Emitter

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	2.3	A
P_{DISS}	Power Dissipation	29	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	6.0	$^{\circ}\text{C/W}$
---------------	----------------------------------	-----	----------------------

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

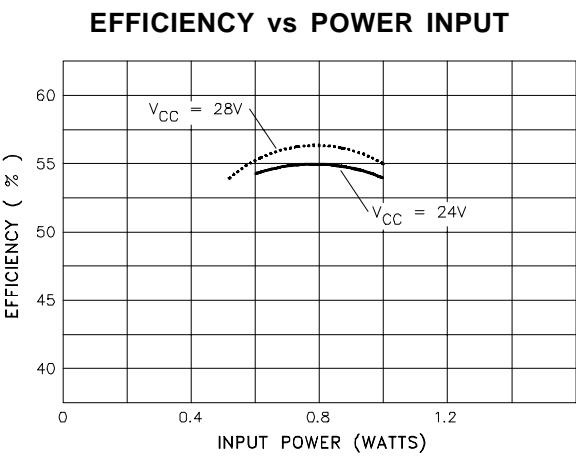
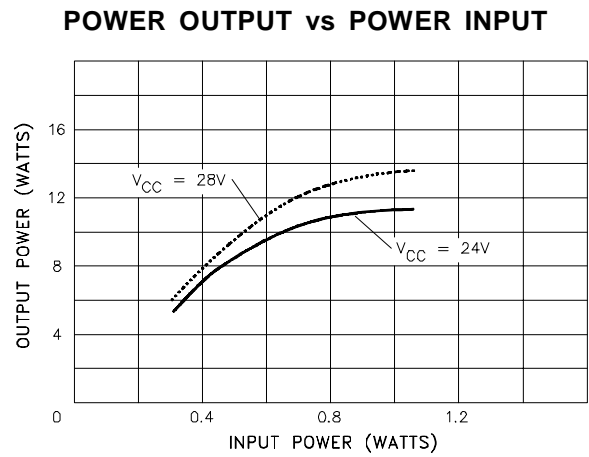
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 3mA	I _E = 0mA	45	—	—	V
BV _{CEO}	I _C = 3mA	I _B = 0mA	12	—	—	V
BV _{EBO}	I _E = 3mA	I _C = 0mA	3.5	—	—	V
h _{FE}	V _{CE} = 5V	I _C = 600mA	15	—	150	—

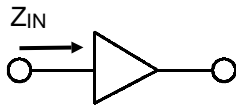
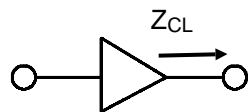
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 1.65 GHz	P _{IN} = 0.8 W	V _{CE} = 28 V	10	—	—	W
G _P	f = 1.65 GHz	P _{IN} = 0.8 W	V _{CE} = 28 V	11	—	—	dB
η _C	f = 1.65 GHz	P _{IN} = 0.8 W	V _{CE} = 28 V	48	—	—	%

TYPICAL PERFORMANCE



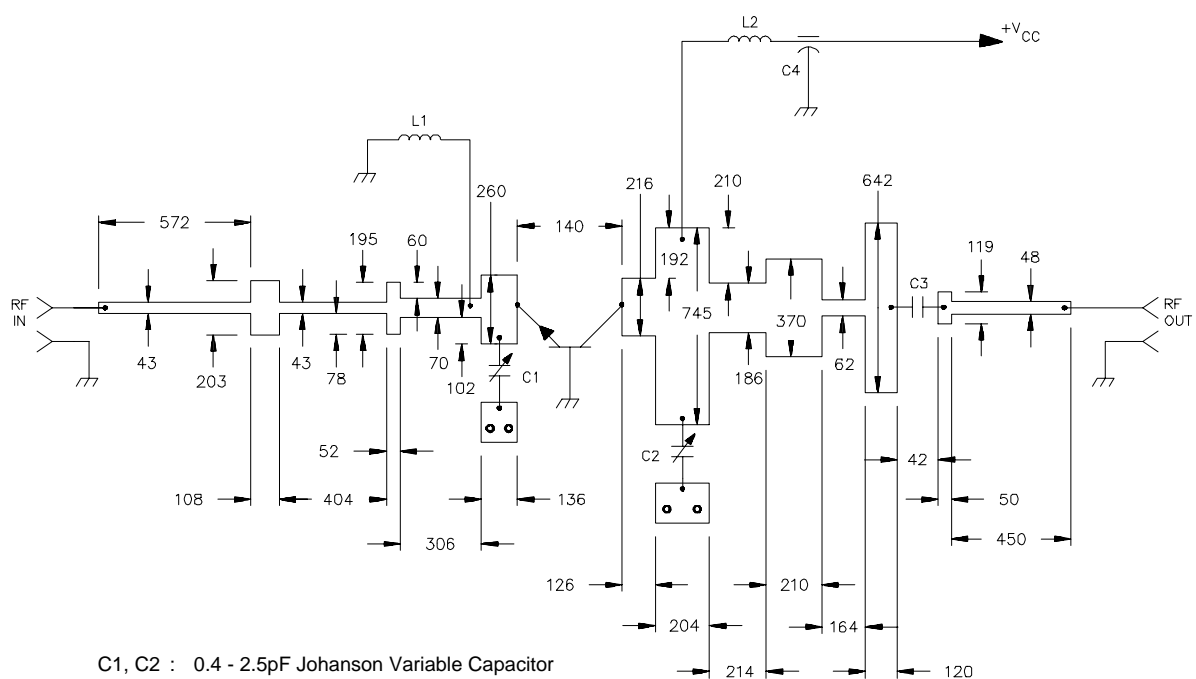
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
1600 MHz	$22.0 + j 23.0$	$3.1 + j 4.0$
1650 MHz	$28.0 + j 18.0$	$3.0 + j 2.0$

 $P_{OUT} = 10 \text{ W}$ $V_{CE} = 28 \text{ V}$ $P_{IN} = 0.8 \text{ W}$

TEST CIRCUIT



C1, C2 : 0.4 - 2.5pF Johanson Variable Capacitor

C3 : 100pF Chip Capacitor ATC

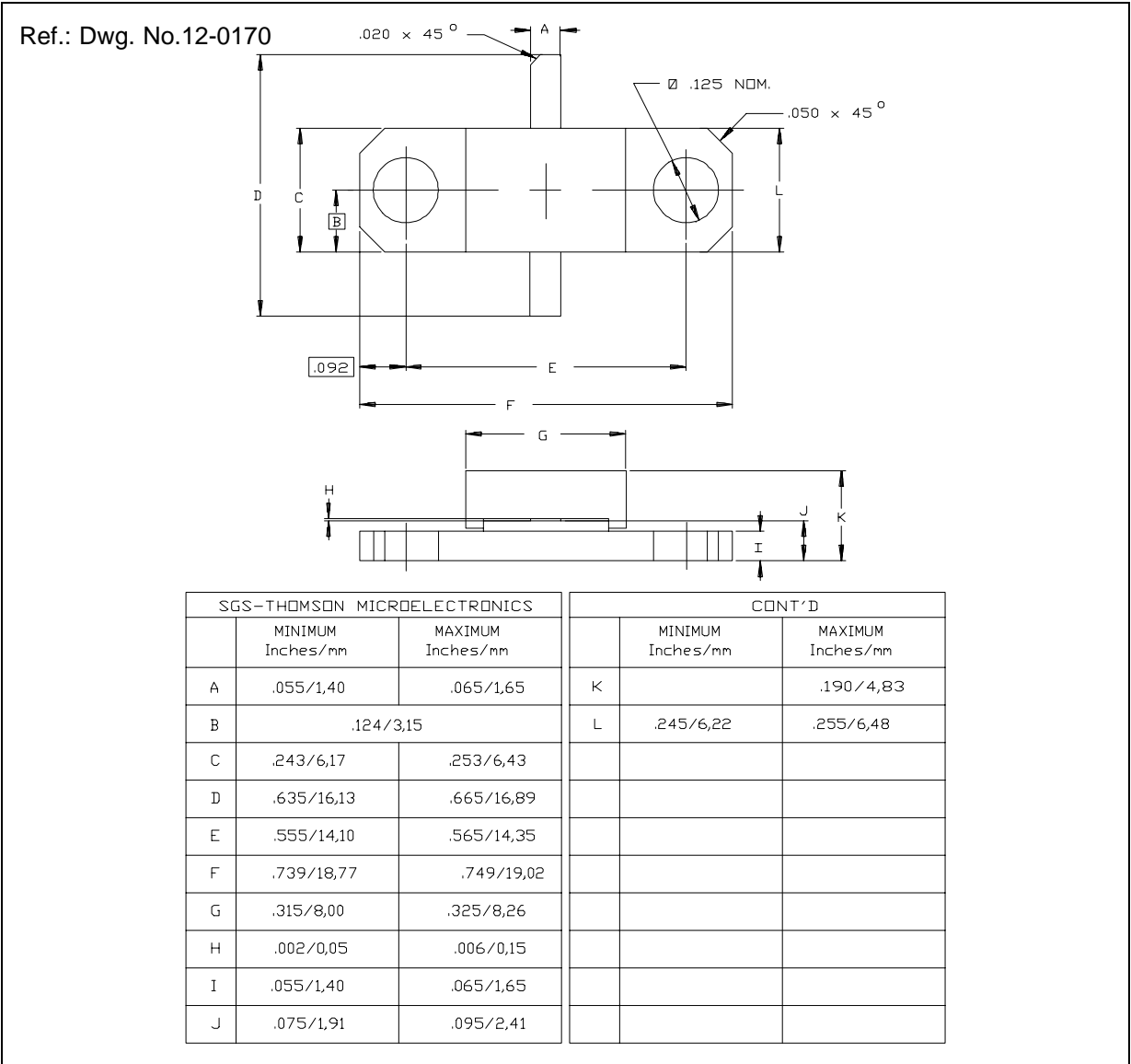
C4 : Suppression Filters CDI 9900381-6004

L1, L2 : 4 Turns, Choke #28 AWG .080" I.D.

Substrate: $\epsilon_r = 10.2$, Height .050", 1 Oz. Cu.

All Dimensions in mm unless otherwise specified

PACKAGE MECHANICAL DATA



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 results 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.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

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