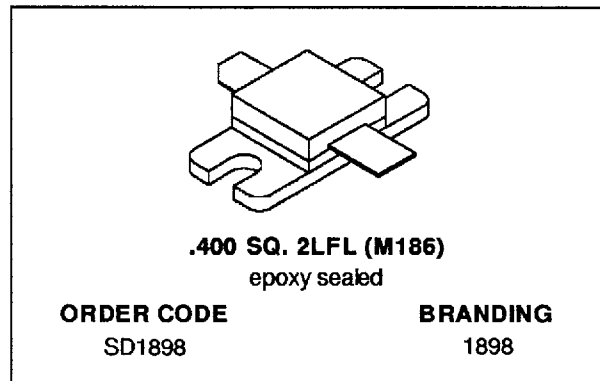
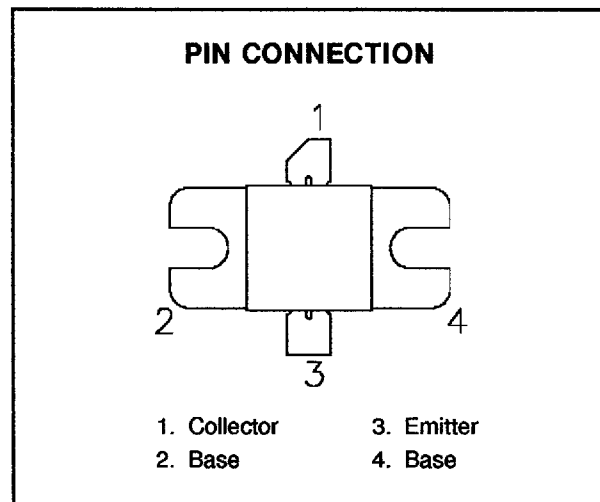


**RF & MICROWAVE TRANSISTORS
1.6 GHz SATCOM APPLICATIONS**

- 1.65 GHz
- 28 VOLTS
- EFFICIENCY 40% MIN.
- CLASS C OPERATION
- COMMON BASE
- P_{OUT} = 32 W MIN. WITH 9 dB GAIN


DESCRIPTION

The SD1898 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. SD1898 is packaged in a cost-effective epoxy sealed housing.


ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°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	7.8	A
P _{DISS}	Power Dissipation	87.5	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	2.0	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

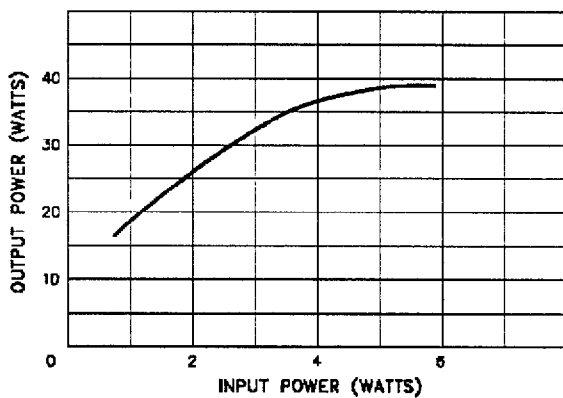
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 10mA$	$I_E = 0mA$	45	—	—	V
BV_{CEO}	$I_C = 10mA$	$I_B = 0mA$	12	—	—	V
BV_{EBO}	$I_E = 10mA$	$I_C = 0mA$	3.5	—	—	V
h_{FE}	$V_{CE} = 5V$	$I_C = 2A$	15	—	150	—

DYNAMIC

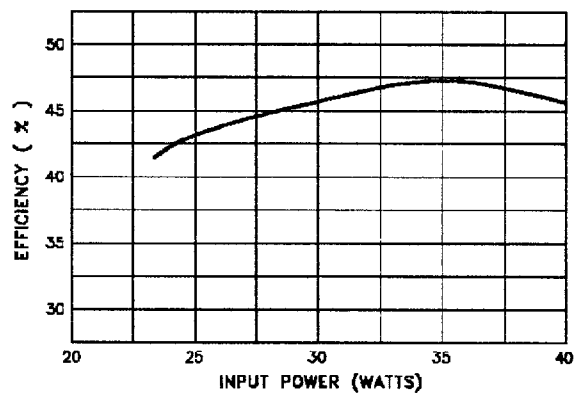
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1.65 GHz$	$P_{IN} = 4.0 W$	$V_{CE} = 28 V$	32	—	—	W
GP	$f = 1.65 GHz$	$P_{IN} = 4.0 W$	$V_{CE} = 28 V$	9.0	—	—	dB
η_C	$f = 1.65 GHz$	$P_{IN} = 4.0 W$	$V_{CE} = 28 V$	40	—	—	%

TYPICAL PERFORMANCE

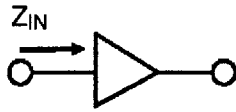
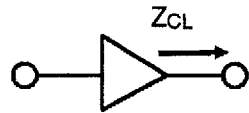
POWER OUTPUT vs POWER INPUT



EFFICIENCY vs POWER INPUT

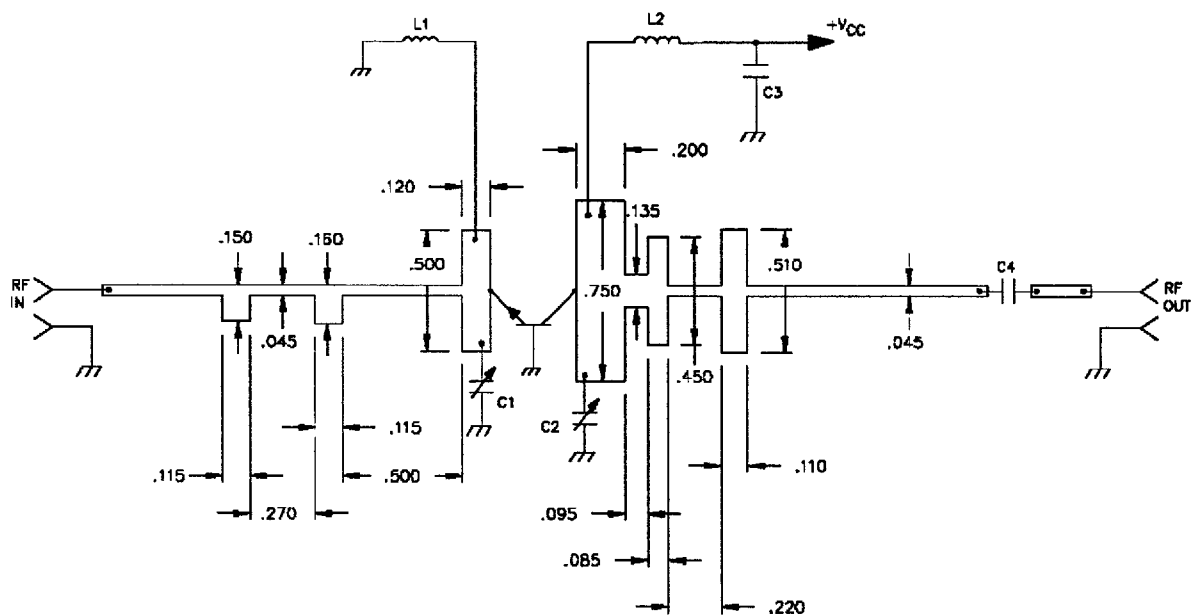


IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	Z _{IN} (Ω)	Z _{CL} (Ω)
1550 MHz	6.6 + j 15.0	5.6 - j 2.5
1600 MHz	8.3 + j 14.5	4.7 - j 1.9
1650 MHz	12.0 + j 12.0	4.1 - j 1.4

TEST CIRCUIT

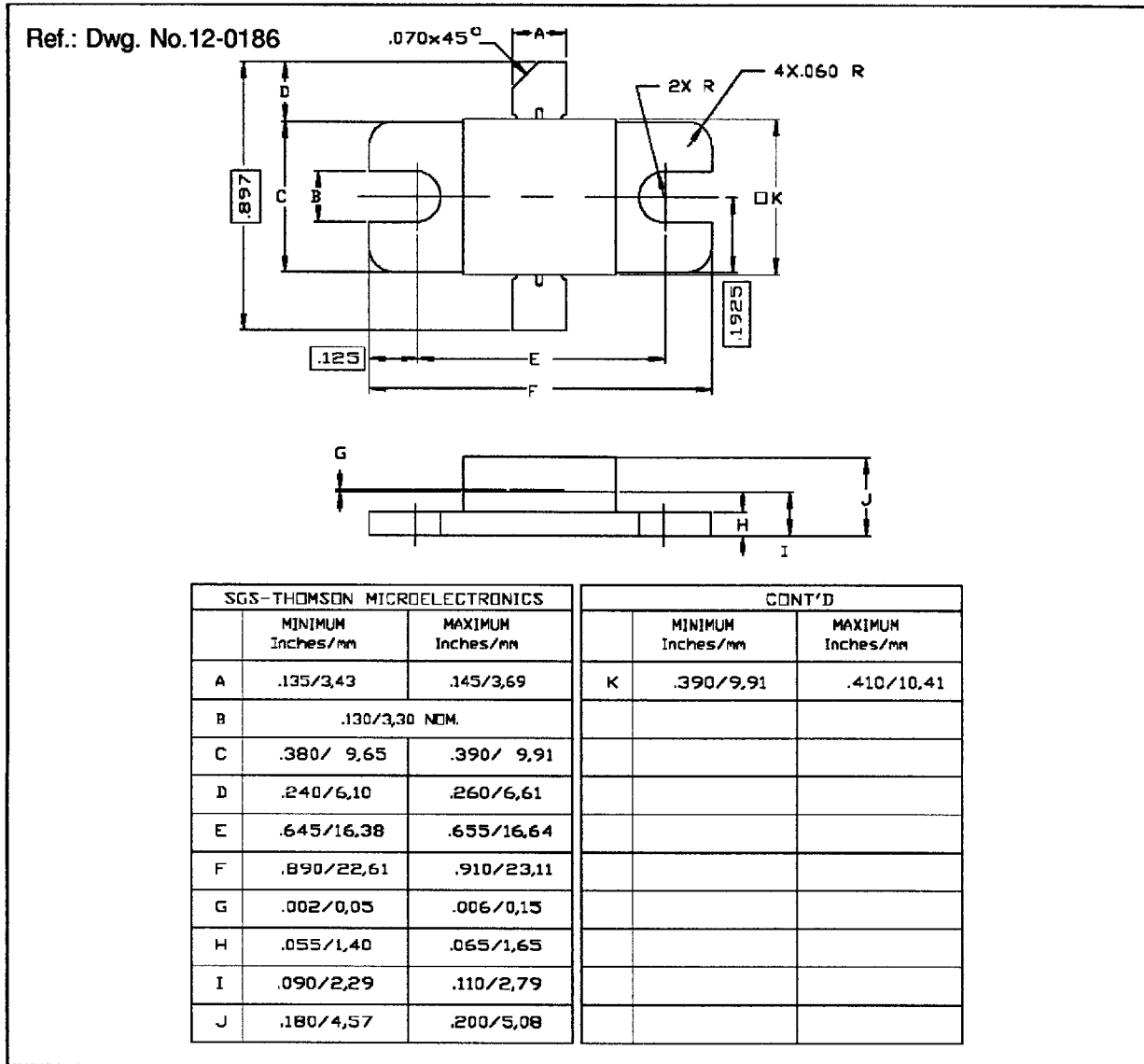


C1, C2 : .4 - 2.5pF Johanson Capacitor
 C3 : 15,000pF EMI Filter
 C4 : 1000pF Chip Capacitor

L1, L2 : 5 Turns Choke Diameter Wire .025" I.D. .125"

Substrate: Er = 10.2, Height .050", 1 Oz. Copper
 All Dimensions in Inches.

PACKAGE MECHANICAL DATA



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