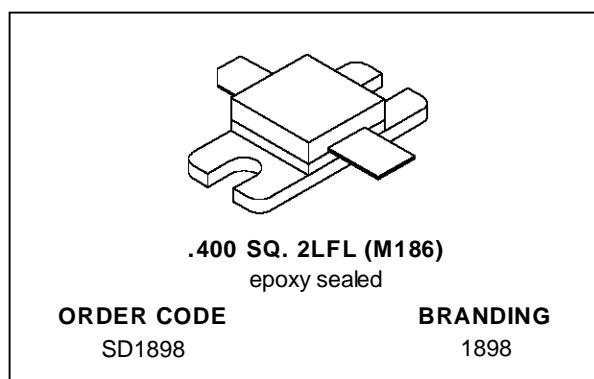
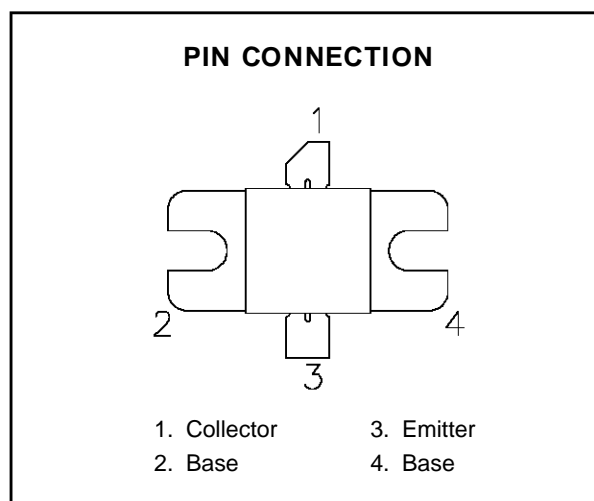


**RF & MICROWAVE TRANSISTORS  
1.6 GHz SATCOM APPLICATIONS**

- 1.65 GHz
- 28 VOLTS
- EFFICIENCY 40% MIN.
- CLASS C OPERATION
- COMMON BASE
- P<sub>OUT</sub> = 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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	15	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	7.8	A
P <sub>DISS</sub>	Power Dissipation	87.5	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	2.0	°C/W
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## SD1898

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

#### STATIC

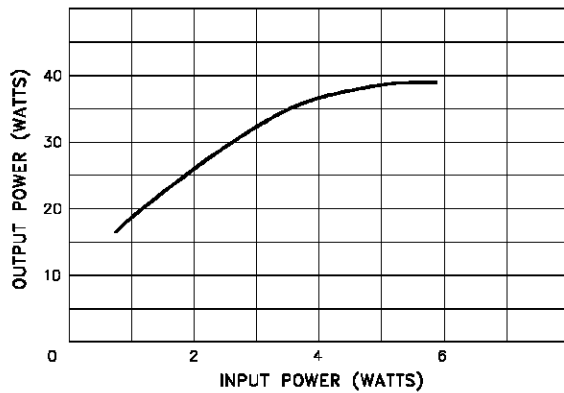
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 10\text{mA}$	$I_{\text{E}} = 0\text{mA}$	45	—	—	V
$BV_{\text{CEO}}$	$I_{\text{C}} = 10\text{mA}$	$I_{\text{B}} = 0\text{mA}$	12	—	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V
$h_{\text{FE}}$	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 2\text{A}$	15	—	150	—

#### DYNAMIC

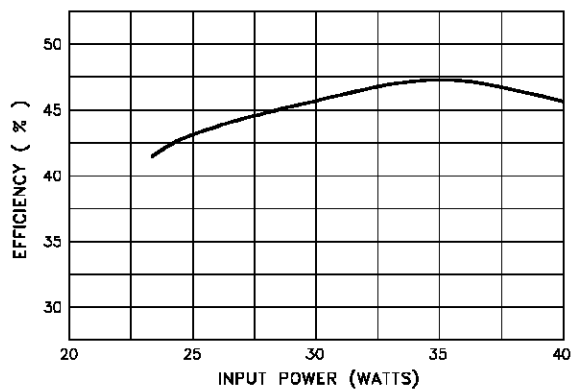
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{\text{OUT}}$	$f = 1.65\text{ GHz}$	$P_{\text{IN}} = 4.0\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	32	—	—	W
$G_{\text{P}}$	$f = 1.65\text{ GHz}$	$P_{\text{IN}} = 4.0\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	9.0	—	—	dB
$\eta_{\text{C}}$	$f = 1.65\text{ GHz}$	$P_{\text{IN}} = 4.0\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	40	—	—	%

### TYPICAL PERFORMANCE

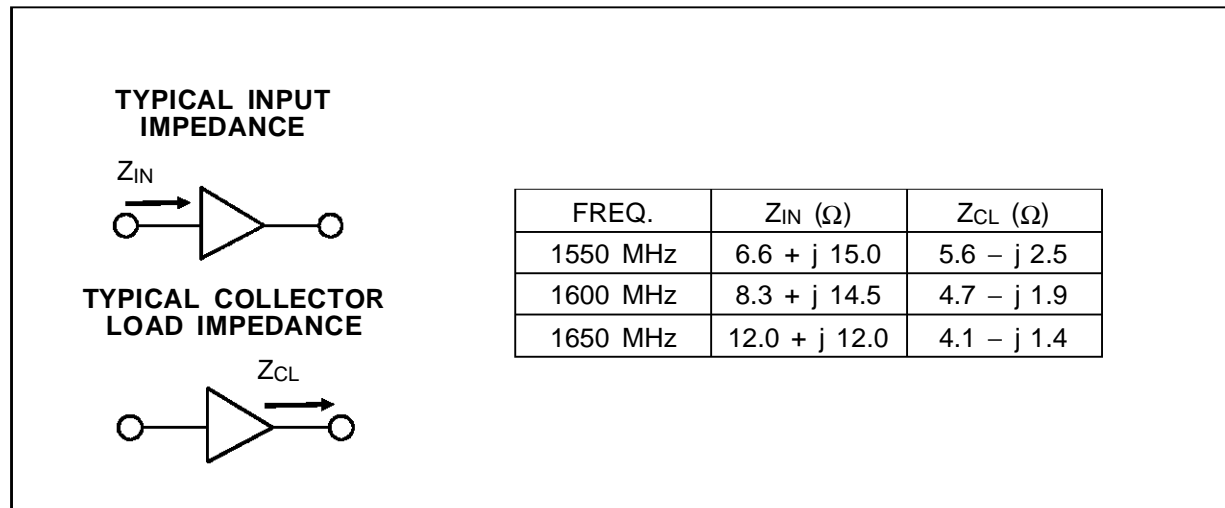
POWER OUTPUT vs POWER INPUT



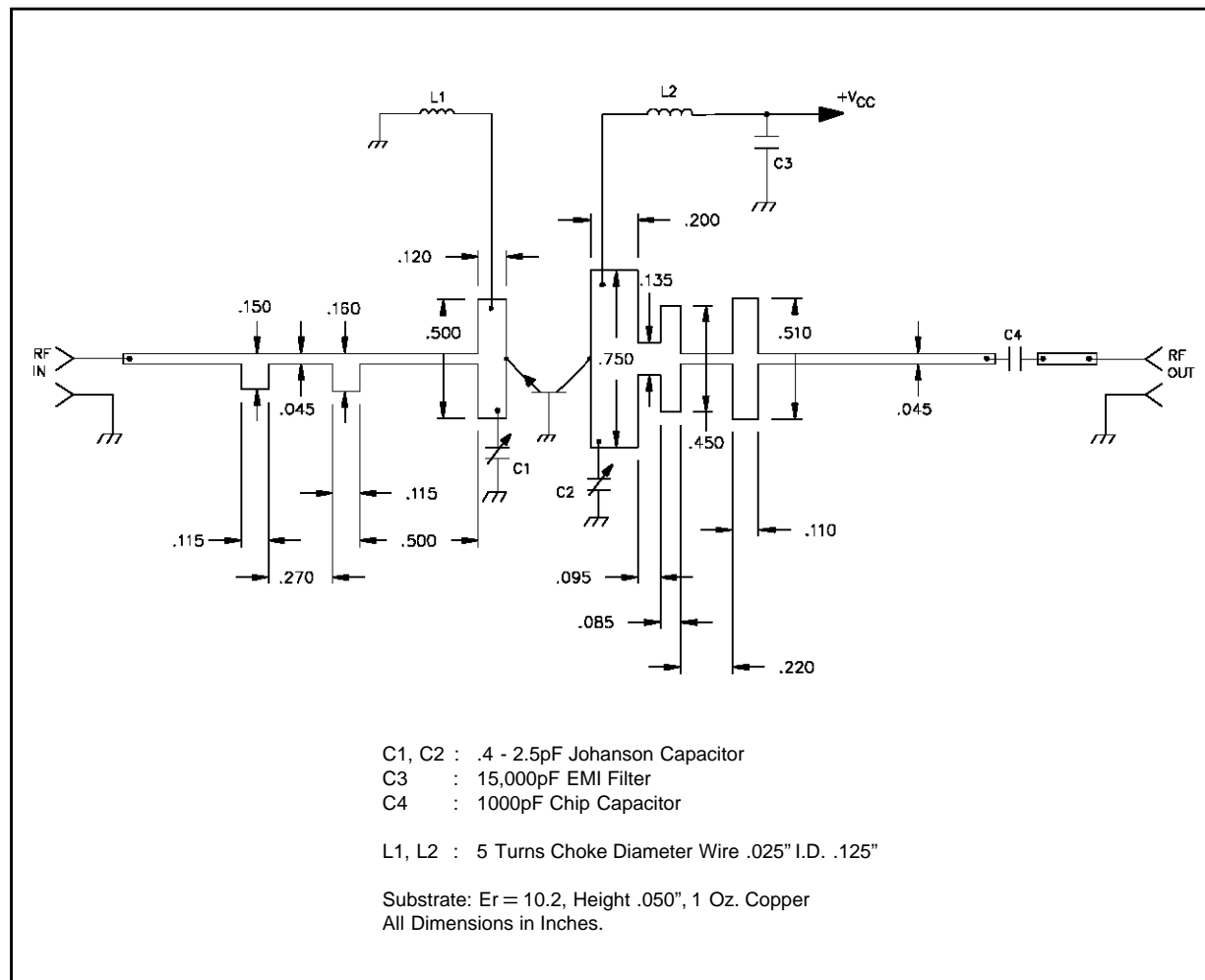
EFFICIENCY vs POWER INPUT



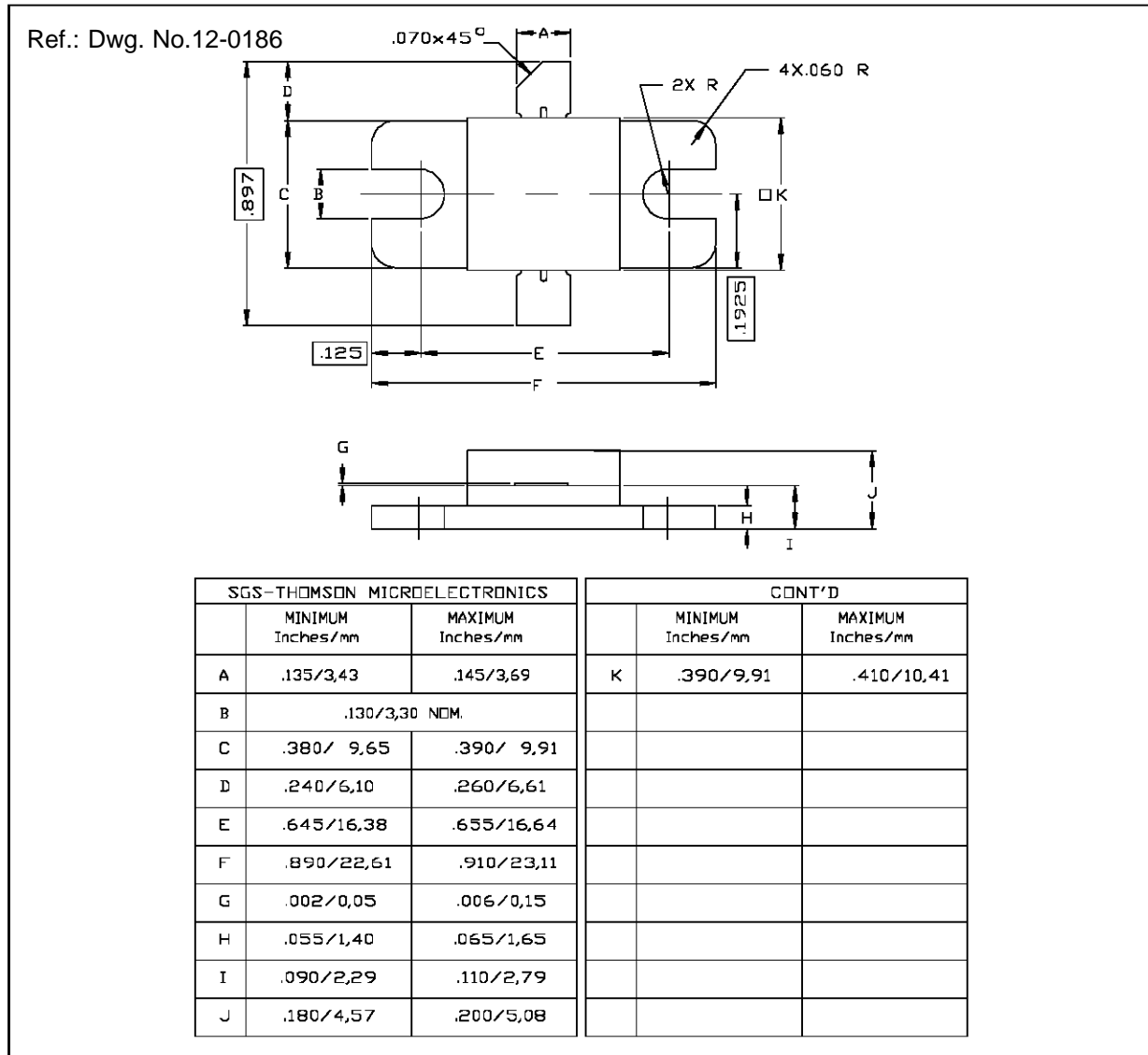
## IMPEDANCE DATA



## TEST CIRCUIT



PACKAGE MECHANICAL DATA



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