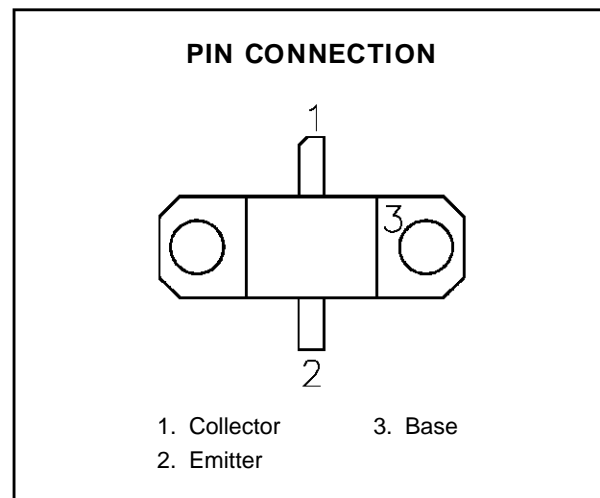
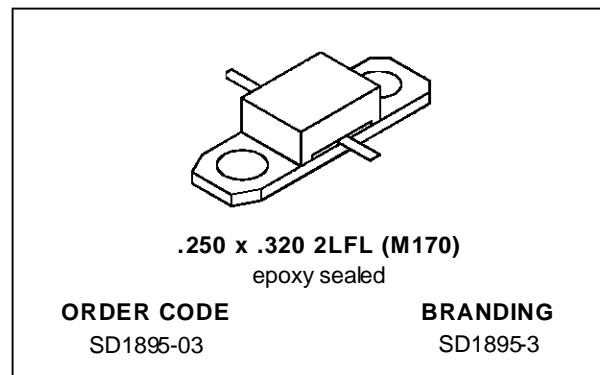


**RF & MICROWAVE TRANSISTORS  
1.6 GHz SATCOM APPLICATIONS**

- 1.65 GHz
- 28 VOLTS
- OVERLAY DIE GEOMETRY
- ALL GOLD METALLIZED SYSTEM
- HIGH RELIABILITY AND RUGGEDNESS
- COMMON BASE
- P<sub>OUT</sub> = 15 W MIN. WITH 9.2 dB GAIN


**DESCRIPTION**

The SD1895-03 is a 28 V silicon NPN planar transistor designed for INMARSAT and other 1.6 GHz SATCOM applications. This device utilizes polysilicon site ballasting with a gold metallized die to achieve high reliability and ruggedness.

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	15	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.0	V
I <sub>C</sub>	Device Current	3.0	A
P <sub>DISS</sub>	Power Dissipation	37.2	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	4.7	°C/W
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## SD1895-03

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

#### STATIC

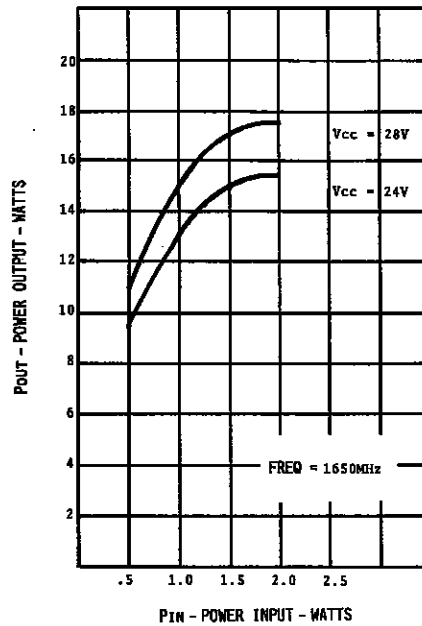
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 5 \text{ mA}$	$I_E = 0 \text{ mA}$	45	—	—	V
$BV_{CEO}$	$I_C = 5 \text{ mA}$	$I_B = 0 \text{ mA}$	12	—	—	V
$BV_{EBO}$	$I_E = 5 \text{ mA}$	$I_C = 0 \text{ mA}$	3.0	—	—	V
$h_{FE}$	$V_{CE} = 5 \text{ V}$	$I_C = 1 \text{ A}$	15	—	150	—

#### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 1.65 \text{ GHz}$	$P_{IN} = 2.4 \text{ W}$	$V_{CE} = 28 \text{ V}$	20	—	—	W
$G_P$	$f = 1.65 \text{ GHz}$	$P_{IN} = 2.4 \text{ W}$	$V_{CE} = 28 \text{ V}$	9.2	—	—	dB
$\eta_c$	$f = 1.65 \text{ GHz}$	$P_{IN} = 2.4 \text{ W}$	$V_{CE} = 28 \text{ V}$	48	—	—	%

#### TYPICAL PERFORMANCE

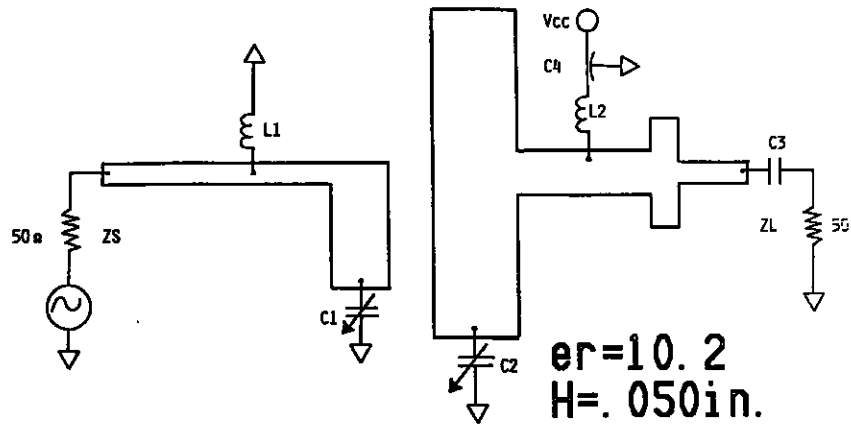
##### POWER OUTPUT vs POWER INPUT



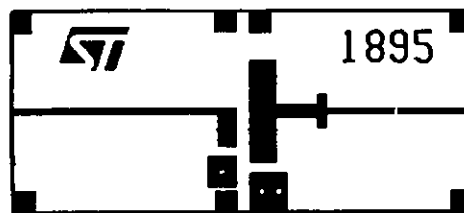
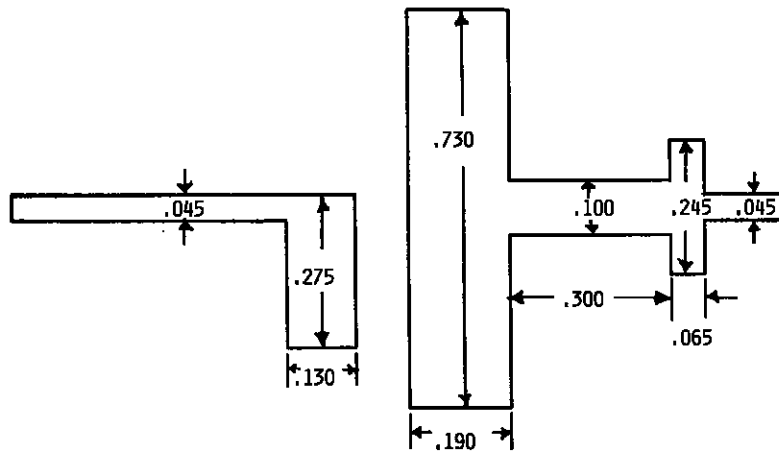
#### IMPEDANCE DATA

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
1.65 GHz	$17.0 + j 18.0$	$3.5 - j 2.0$

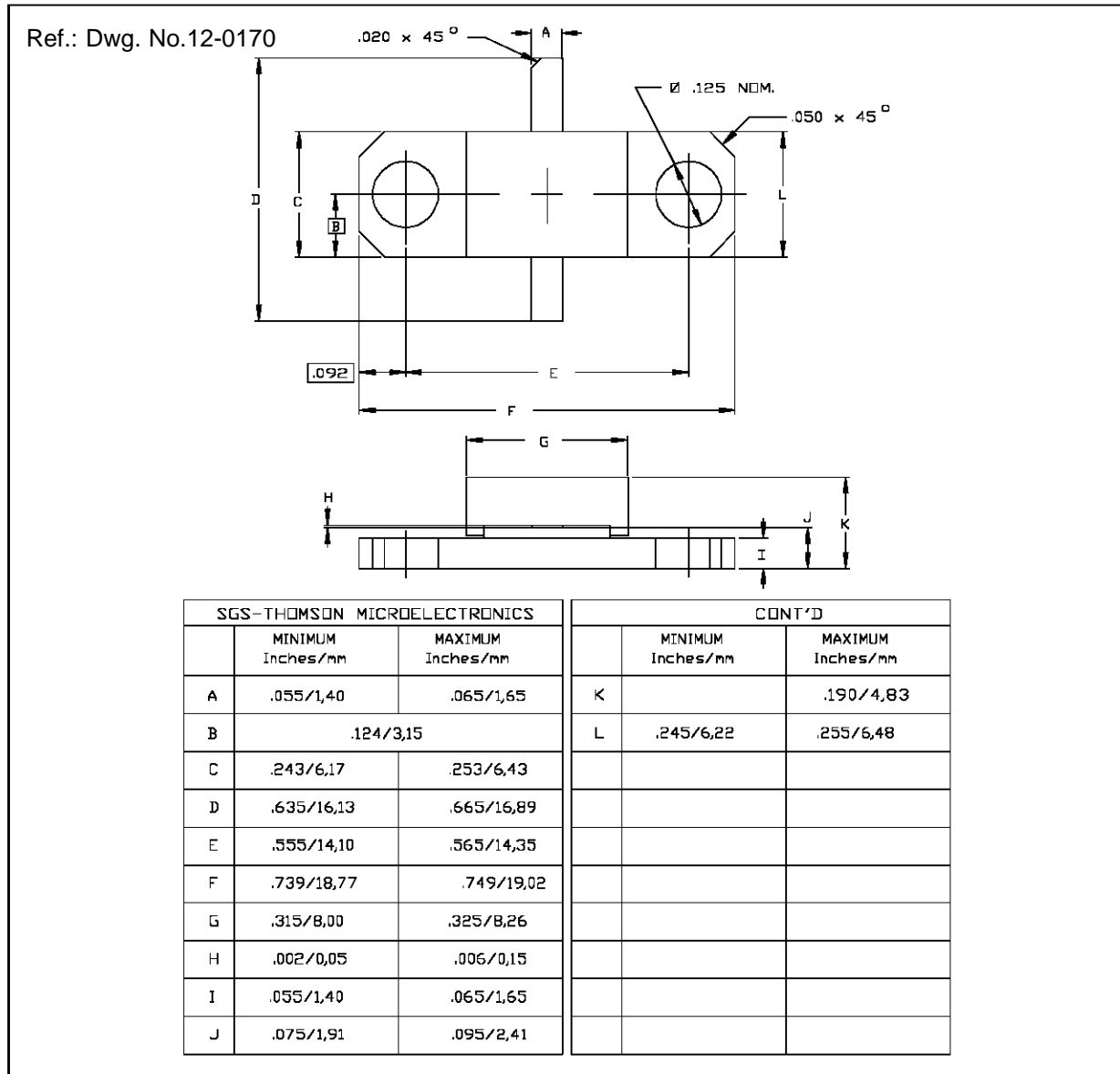
## TEST CIRCUIT



- C1, C2 : 0.4 - 2.5pF #27283 Johanson Trimmer  
 C3 : 100pF ATC 100A101KCA150 Chip Capacitor  
 C4 : 15,000pF EMI Filter Murata/Erie #9900-381-6004  
 L1, L2 : 4 Turns, #28 AWG. .080" I.D.



PACKAGE MECHANICAL DATA



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