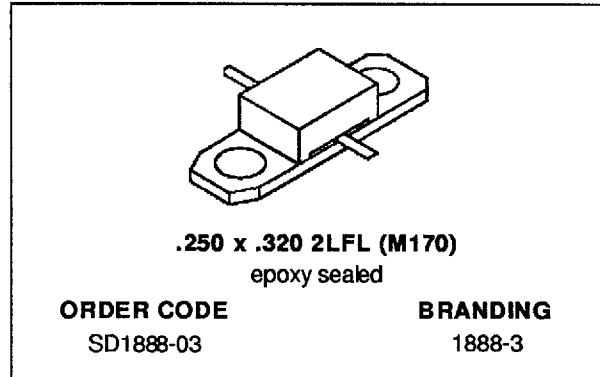


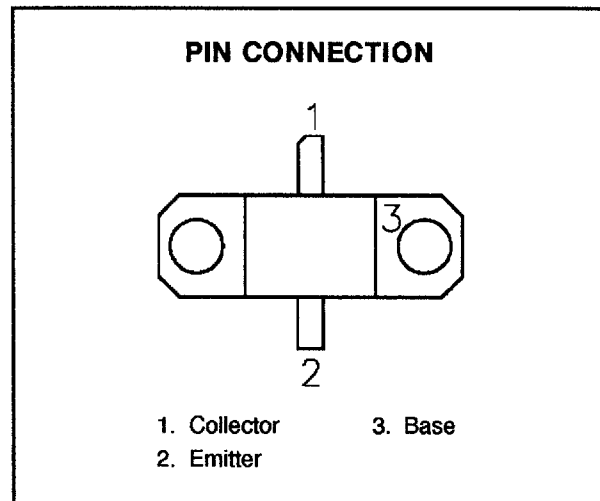
RF & MICROWAVE TRANSISTORS
1.6 GHz SATCOM APPLICATIONS

- 1.65 GHz
- 28 VOLTS
- EFFICIENCY 50% MIN.
- CLASS C OPERATION
- COMMON BASE
- INPUT/OUTPUT MATCHING
- P_{OUT} = 24 W MIN. WITH 9.0 dB GAIN



DESCRIPTION

The SD1888-03 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. SD1888-03 is packaged in a cost-effective epoxy sealed housing



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	45	V
V _{CEO}	Collector-Emitter Voltage	12	V
V _{EBO}	Emitter-Base Voltage	3.0	V
I _C	Device Current	2.6	A
P _{DISS}	Power Dissipation	50	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	3.5	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

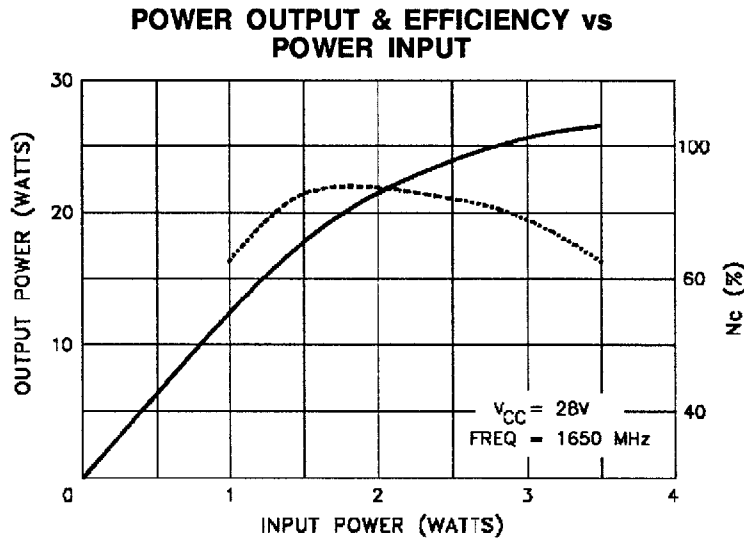
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 6\text{ mA}$	$I_E = 0\text{ mA}$	45	—	—	V
BV_{CEO}	$I_C = 6\text{ mA}$	$I_B = 0\text{ mA}$	12	—	—	V
BV_{EBO}	$I_E = 6\text{ mA}$	$I_C = 0\text{ mA}$	3.0	—	—	V
h_{FE}	$V_{CE} = 5\text{ V}$	$I_C = 1.2\text{ A}$	15	—	150	—

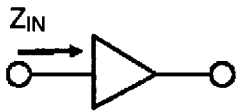
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1.65\text{ GHz}$	$P_{IN} = 3.0\text{ W}$	$V_{CE} = 28\text{ V}$	24	—	—	W
G_P	$f = 1.65\text{ GHz}$	$P_{IN} = 3.0\text{ W}$	$V_{CE} = 28\text{ V}$	9.0	—	—	dB
η_C	$f = 1.65\text{ GHz}$	$P_{IN} = 3.0\text{ W}$	$V_{CE} = 28\text{ V}$	50	—	—	%

TYPICAL PERFORMANCE

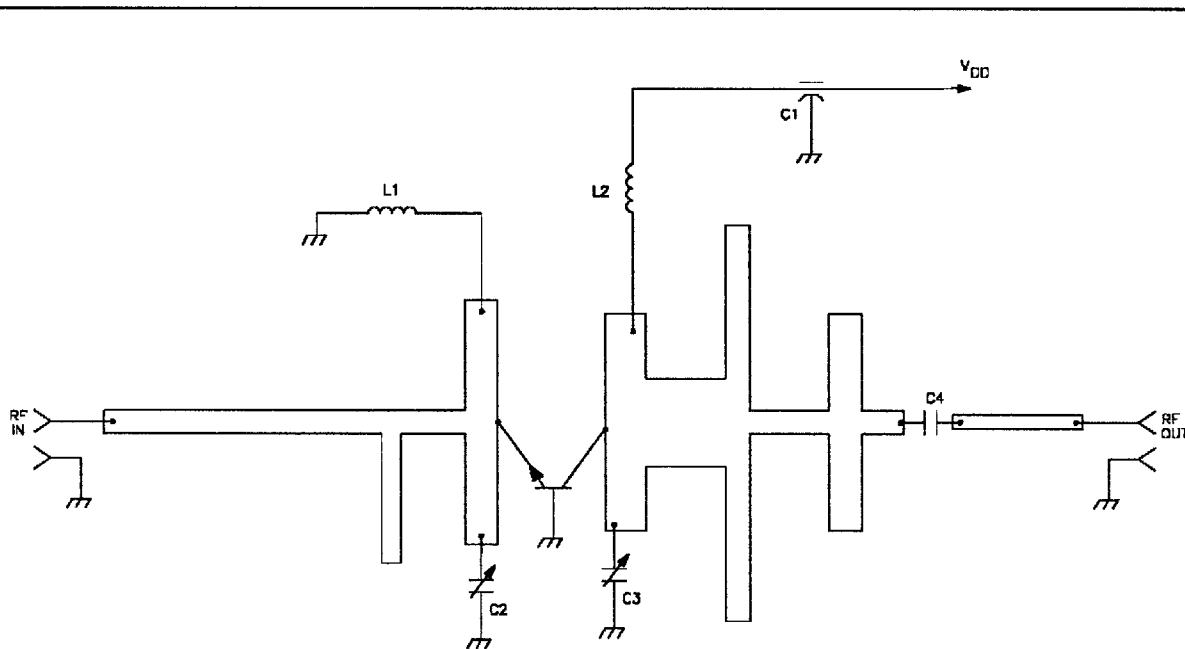


IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
1600 MHz	$9.0 + j 14.0$	$11.0 + j 2.0$
1650 MHz	$11.5 + j 12.0$	$9.0 + j 4.0$
1700 MHz	$23.0 + j 8.0$	$8.0 + j 5.5$

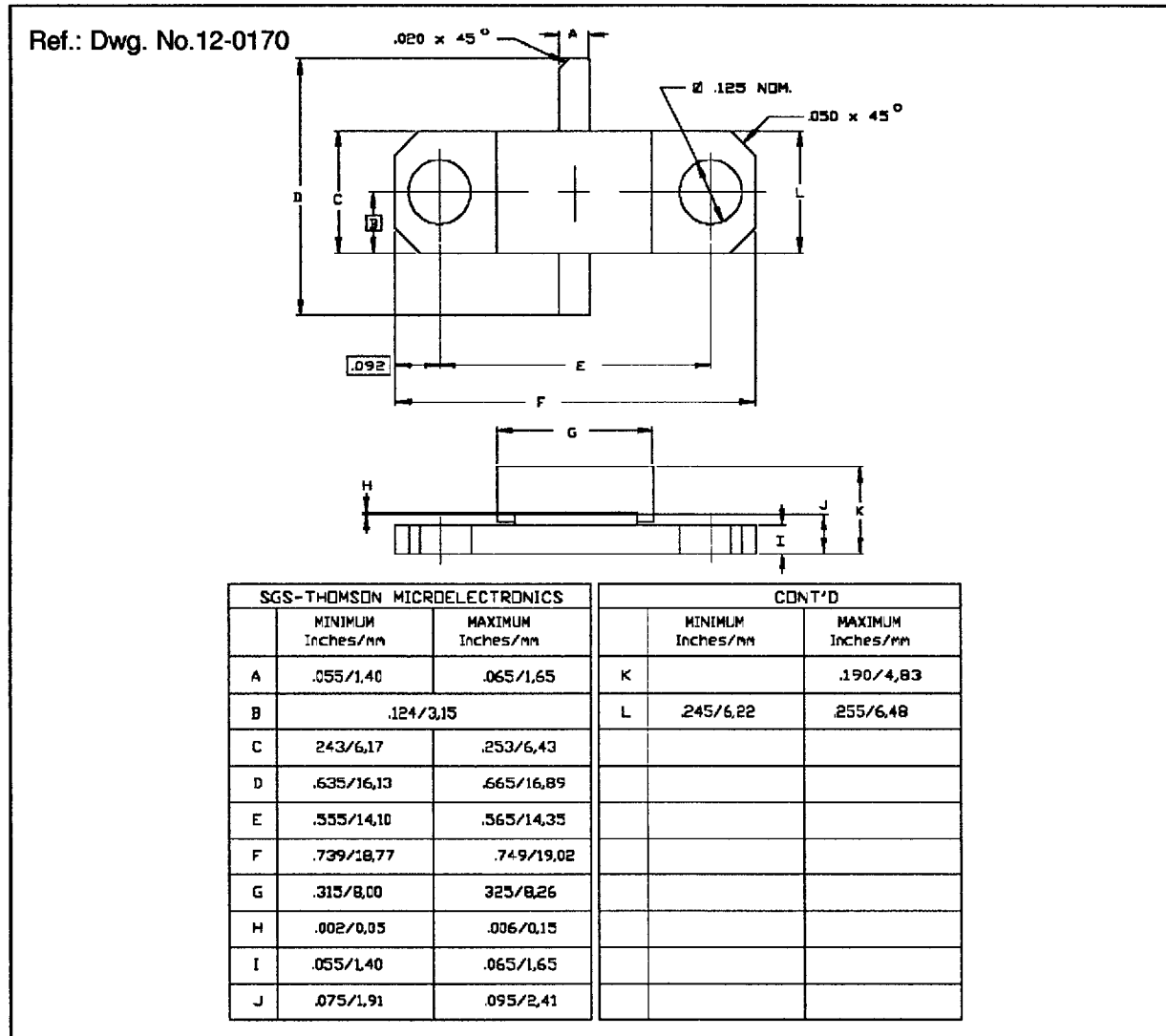
TEST CIRCUIT



C1 : 1500pF Feedtrhu Capacitor Erie
 C2, C3 : 0.4 - 2.5pF Trim Capacitor Johanson Gigatrim
 C4 : 100pF ATC Chip Capacitor

L1, L2 : RF Chokes; 3 Turns #22 Wire .100" Diameter

PACKAGE MECHANICAL DATA



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