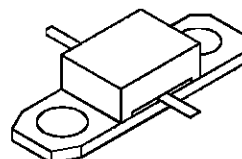


RF & MICROWAVE TRANSISTORS 1.6 GHz SATCOM APPLICATIONS

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



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

ORDER CODE

SD1888-03

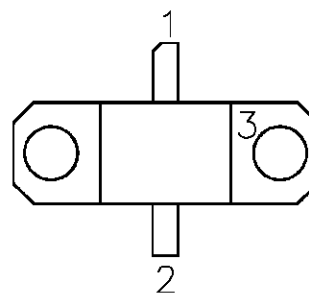
BRANDING

1888-3

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

PIN CONNECTION



1. Collector

2. Emitter

3. Base

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	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	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	3.5	$^{\circ}\text{C/W}$
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SD1888-03

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

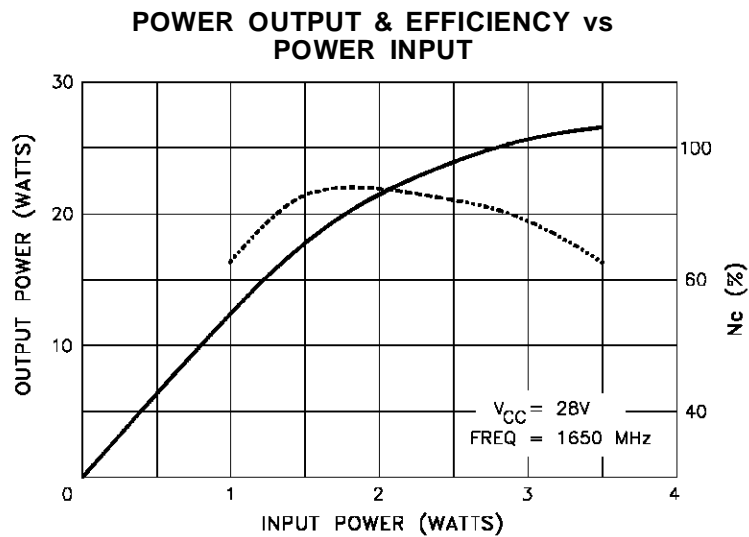
STATIC

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

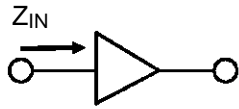
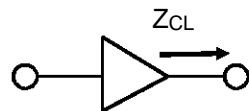
DYNAMIC

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

TYPICAL PERFORMANCE

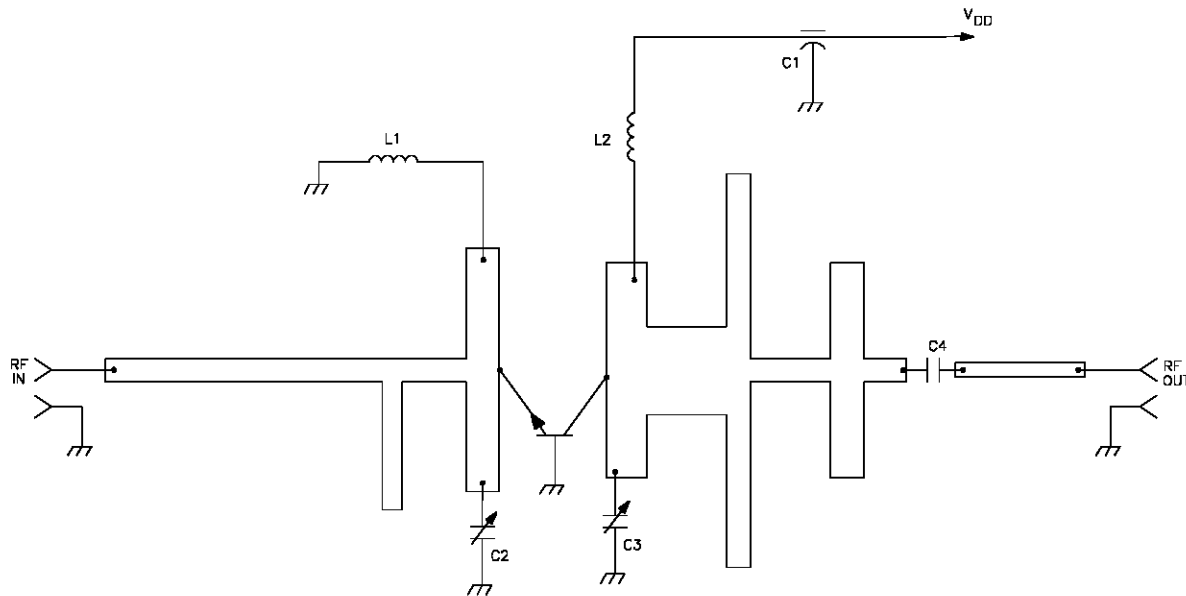


IMPEDANCE DATA

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	$23.0 + j 8.0$	$8.0 + j 5.5$

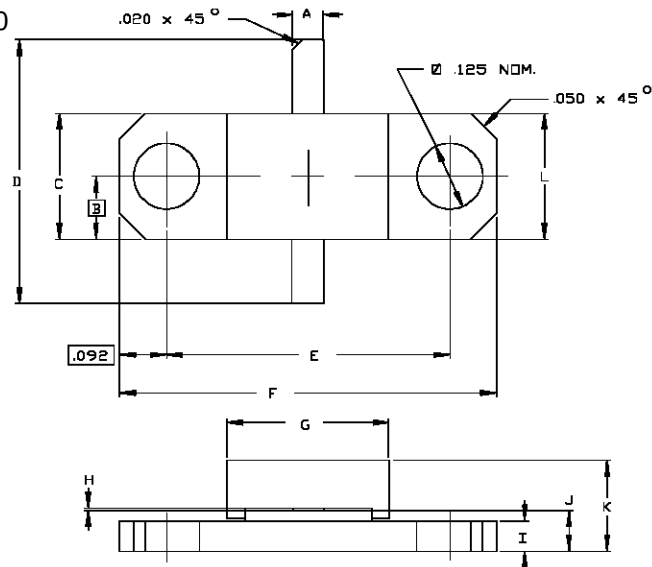
TEST CIRCUIT



- C1 : 1500pF Feedthru 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

Ref.: Dwg. No.12-0170



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.055/1,40	.065/1,65	K		.190/4,83
B	.124/3,15		L	.245/6,22	255/6,48
C	.243/6,17	.253/6,43			
D	.635/16,13	.665/16,89			
E	.555/14,10	.565/14,35			
F	.739/18,77	.749/19,02			
G	.315/8,00	.325/8,26			
H	.002/0,05	.006/0,15			
I	.055/1,40	.065/1,65			
J	.075/1,91	.095/2,41			

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