

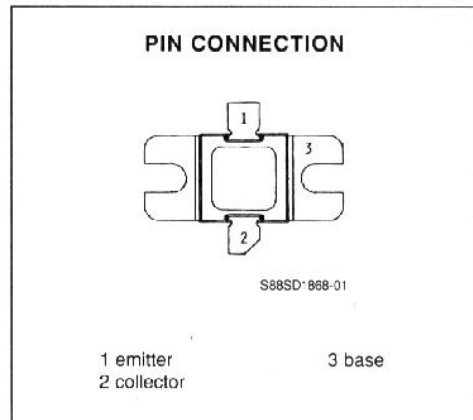
RF & MICROWAVE TRANSISTORS
MICROWAVE TELECOMMUNICATION APPLICATIONS

- FREQUENCY 1.6–1.65GHz
- POWER OUT 30W
- POWER GAIN 8.7dB
- VOLTAGE 28.0V
- HERMETIC PACKAGE
- ALL GOLD METALLIZED SYSTEM
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- LOW THERMAL RESISTANCE
- COMMON BASE
- BROADBAND PERFORMANCE



DESCRIPTION

The SD1868 is an internally input and output matched NPN silicon transistor designed for microwave applications. The device utilizes polysilicon site ballasting with gold metallized die to achieve high reliability and ruggedness. The SD1868 is a 28V device designed to provide 30W (narrow band) for inmarsat and geostar applications. The device is branded SD1868.



ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CEO}	Collector - Base Voltage	15	V
V_{CBO}	Collector - Emitter Voltage	45	V
V_{EBO}	Emitter - Base Voltage	3.5	V
I_C	Collector Current (max.)	5.2	A
P_{tot}	Total Device Dissipation at + 25°C	58.3	W
T_{stg}	Storage Temperature	- 65 to 200	°C
T_j	Junction Temperature	200	°C

THERMAL DATA

$R_{th(j-c)}$	Junction-case Thermal Resistance	3.0	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$)

STATIC

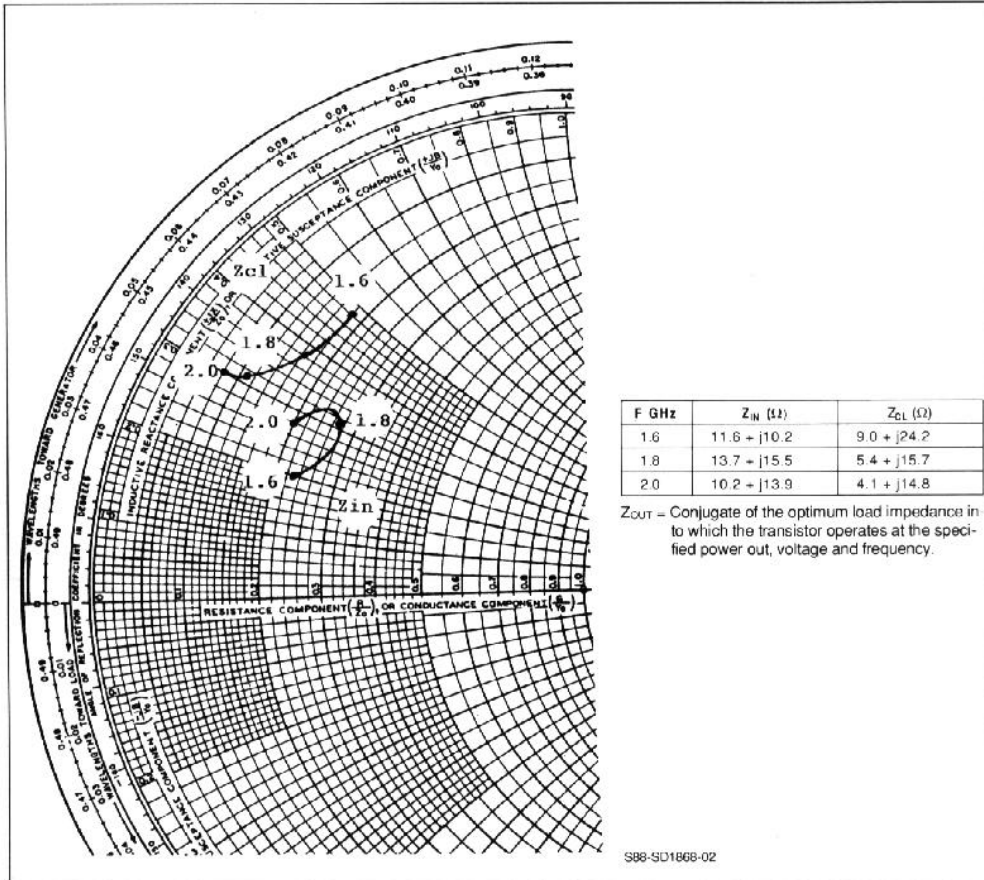
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CE0}^*	$I_C = 10mA$	$I_B = 0$	15			V
BV_{CBO}^*	$I_C = 10mA$	$V_{BE} = 0$	45			V
BV_{EBO}	$I_E = 10mA$	$I_C = 0$	3.5			V
I_{CEO}	$V_{CB} = 24V$	$V_{BE} = 0$.5	mA
h_{FE}	$V_{CE} = 5V$	$I_C = .5A$	15		150	

* Pulsed through 25MH Inductor.

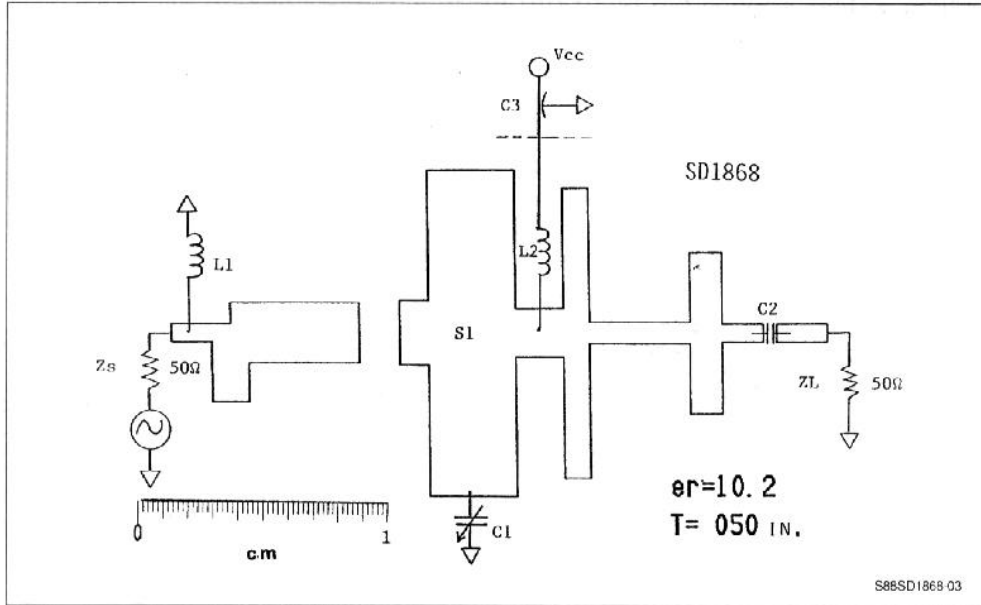
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_D	$f = 1.6 - 1.65GHz$	$V_{CB} = 28V$	$P_{IN} = 4.0W$	30			W
P_G	$f = 1.6 - 1.65GHz$	$V_{CB} = 28V$	$P_{IN} = 4.0W$	8.7			dB
η_C	$f = 1.6 - 1.65GHz$	$V_{CB} = 28V$	$P_{OUT} = 30W$	40			%

TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE WORKSHEET



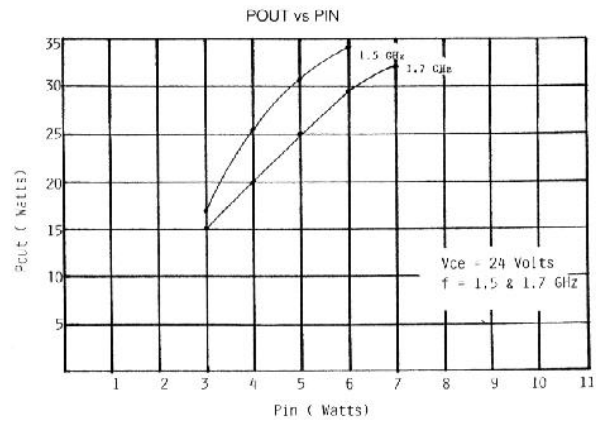
SD1868



PARTS LIST

ITEM REF.	Description
L1	4 Turns # 28 Wire .080" Dia
L2	4 Turns # 28 Wire .080" Dia
C1	.4 - 2.5pF Johanson Capacitor
C2	100pF Chip Capacitor ATC
C3	15.000pF EMI Filter Murata/erie
S1	Epsilam 10 $\epsilon_r = 10.2$ T = .050 Ioz Copper
	SMA Launcher CDI (2 pieces)
	.397 so Fixture Housing
	Heat Sink

TYPICAL DATA CURVES WORKSHEET

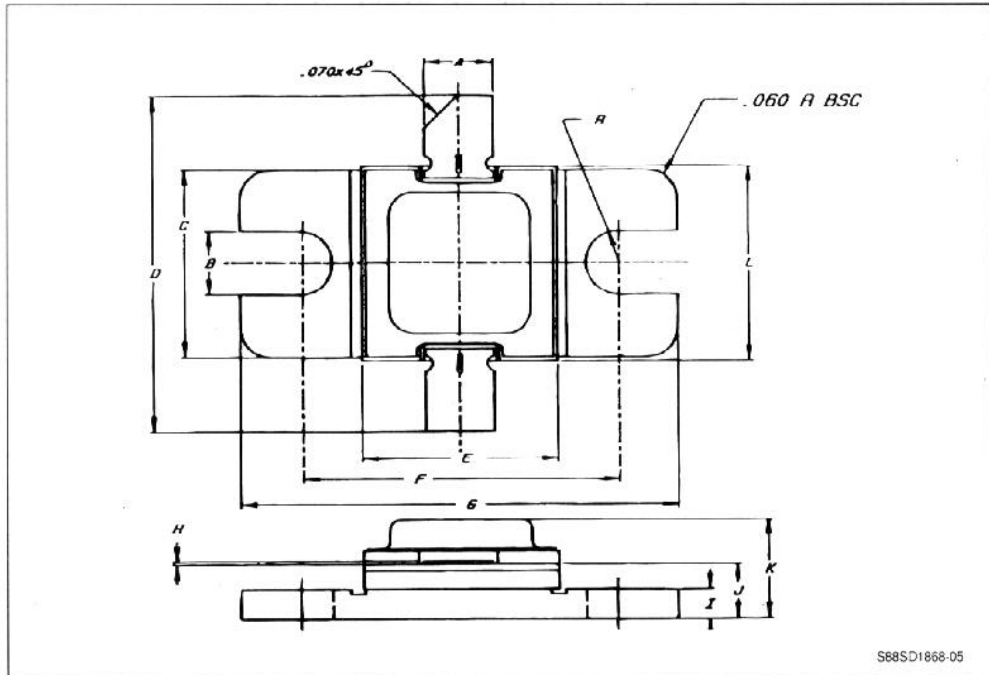


S86SD1868-04

SD1868

PACKAGE MECHANICAL DATA

.397 x .397 2LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.135/3.43	.145/3.68
B	.125/3.18 BSC	
C	.380/9.65	.390/9.91
D	.885/22.48	
E	.392/9.96	.402/10.29
F	.645/16.38	.655/16.64

	Minimum Inches/mm	Maximum Inches/mm
G	.895/22.73	.905/22.99
H	.002/0.05	.006/0.15
I	.055/1.40	.065/1.65
J	.105/2.67	.125/3.18
K		.230/5.84
L	.392/9.96	.402/10.29