

RF & MICROWAVE TRANSISTORS MARISAT APPLICATIONS

- FREQUENCY 1.65GHz
- POWER OUT 3.0W
- POWER GAIN 11.5dB
- VOLTAGE 28.0V
- HERMETIC STRIPLINE PACKAGE
- ALL GOLD METALLIZED SYSTEM
- POLYSILICON SITE BALLASTING
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- COMMON BASE OPERATION

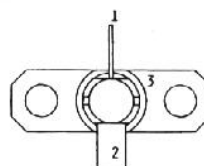


.230 2LFL (M151)
hermetic sealed

ORDER CODE
SD1891

BRANDING
SD1891

PIN CONNECTION



S88SD1891 01

1 collector
2 emitter

3 base

DESCRIPTION

The SD1891 is a 28V NPN Silicon Transistor designed for MARISAT Applications. This device utilizes polysilicon site ballasting with a gold metallized die to achieve high reliability and ruggedness.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	40	V
V_{CEO}	Collector - Emitter Voltage	15	V
V_{EBQ}	Emitter - Base Voltage	3.5	V
I_C	Collector Current (max.)	1.1	A
P_{DISS}	Total Device Dissipation at + 25°C	8.8	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	20	°C/W
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SD1891**ELECTRICAL CHARACTERISTICS** ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

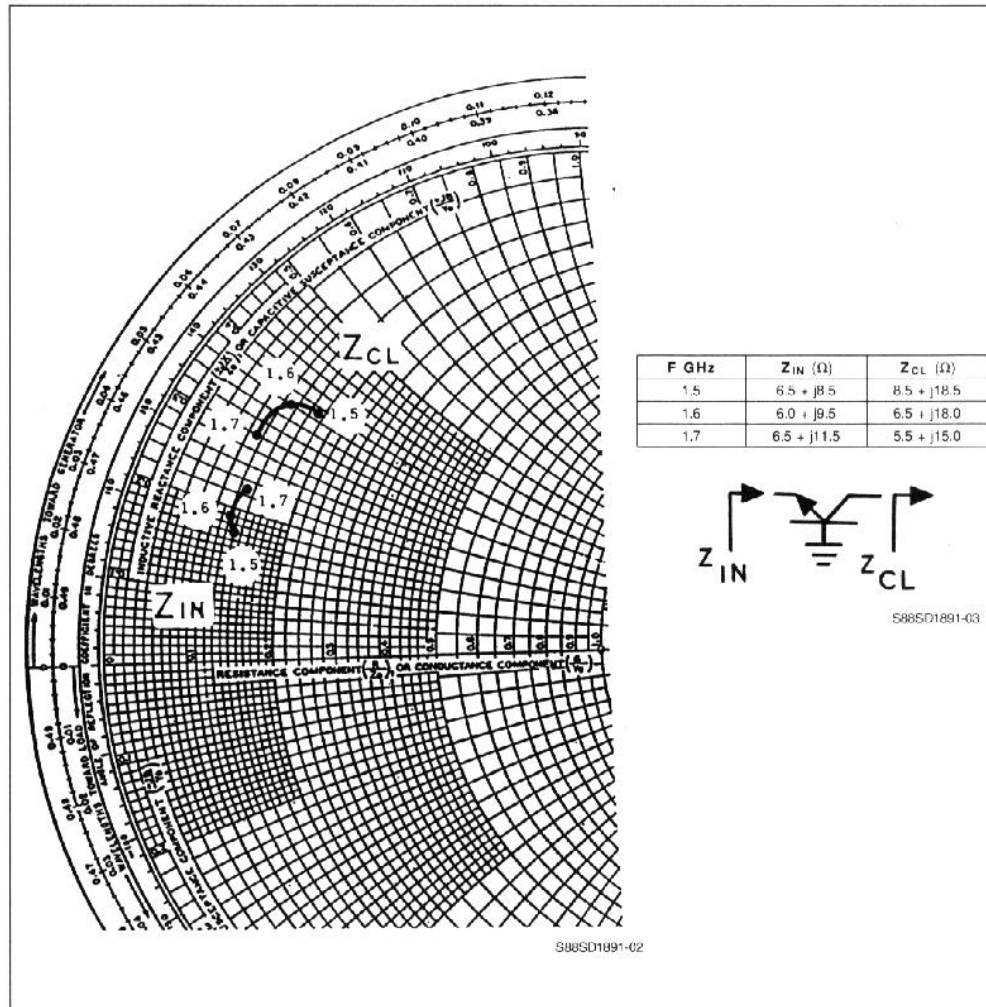
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 1\text{mA}$	45			V
BV_{FBO}	$I_{\text{E}} = 1\text{mA}$	3.5			V
I_{CBO}	$V_{\text{CB}} = 24\text{V}$			0.5	mA
H_{FE}	$V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 100\text{mA}$	15		150	

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 1.65\text{GHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{in}} = 0.25\text{W}$	3.0			W
P_{GAIN}	$f = 1.65\text{GHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{in}} = 0.25\text{W}$	11.5			dB
η_{C}	$f = 1.65\text{GHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{O}} = 0.25\text{W}$	40			%
C_{ob}	$V_{\text{CB}} = 28\text{V}$ $f = 1\text{MHz}$ $I_{\text{E}} = 0$			2.5	PF

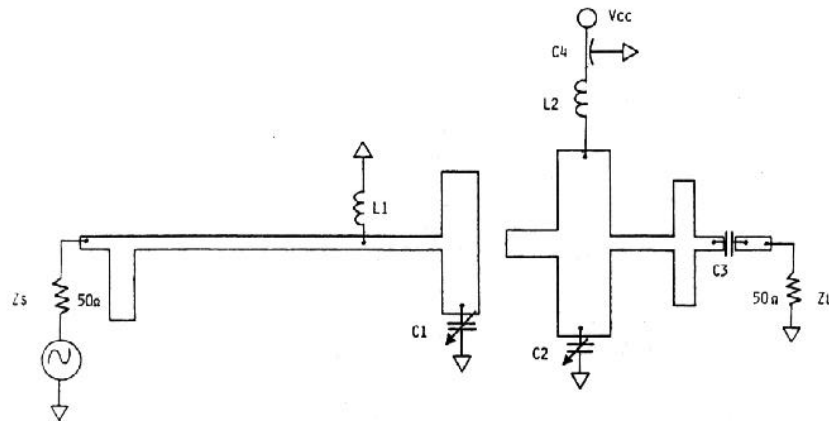
IMPEDANCE DATA (typical values)

TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE



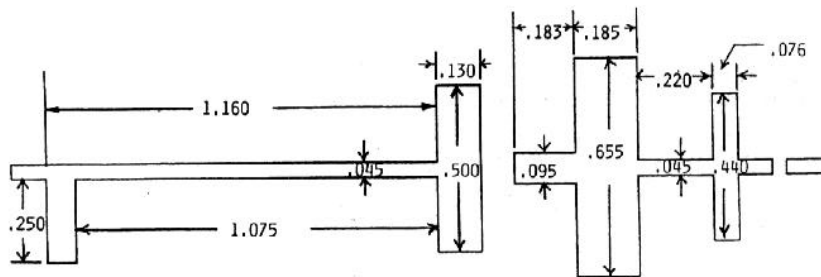
SD1891

TEST CIRCUIT



S88SD1891-04

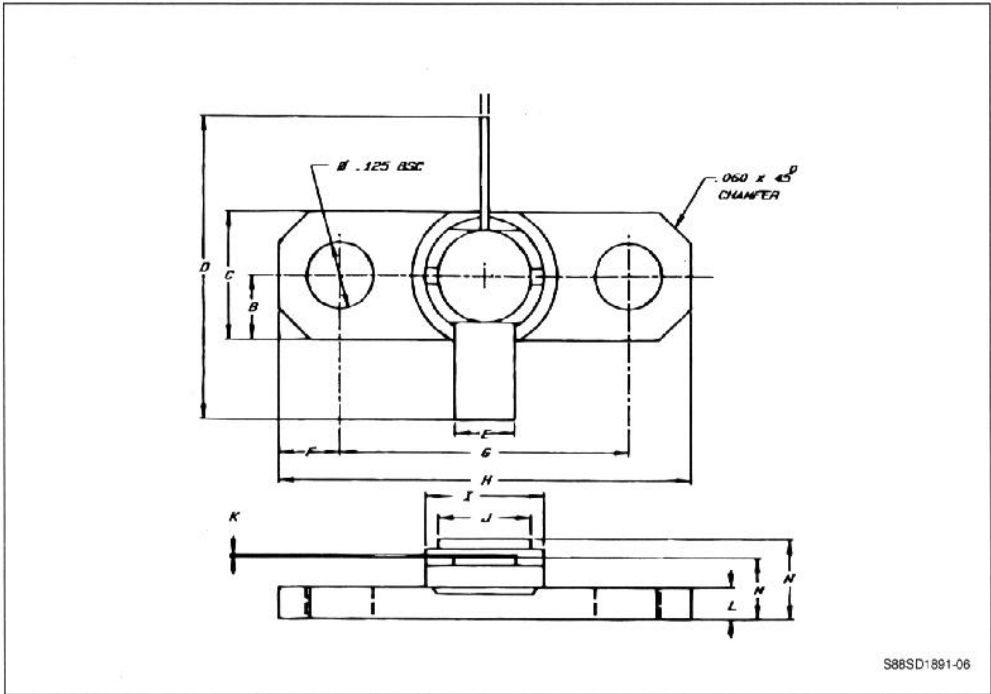
- L1, L2 4 Turn Choke #28 AWG .080" I.D.
 C1, C2 4-2.5 of Johanson Capacitor #27283
 C3 100pF Chip Capacitor ATC ATC100 A101KCA 150
 C4 15.000pF EMI Filter Murata/Envi 9900-381-6004
 S1 Epsilon 10 er = 10.2 H = .050"
 1 oz cu SMA Launcher CD1 (2 pieces)
 .230" Fixture Housing Heat Sink Advance Corp. 5308-2CC



S88SD1891-05

PACKAGE MECHANICAL DATA

.230 2LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.025/0.64	.035/0.89
B	.115/2.92 BSC	
C	.225/5.72	.235/5.97
D	.720/18.29	.750/19.05
E	.110/2.79	.120/3.05
F	.120/3.05 BSC	
G	.555/14.10	.565/14.35

	Minimum Inches/mm	Maximum Inches/mm
H	.795/20.19	.805/20.45
I	.222/5.64	.236/5.99
J	.165/4.19	.180/4.57
K	.002/0.05	.007/0.18
L	.055/1.40	.067/1.70
M	.120/3.18	.140/3.56
N		.170/4.32