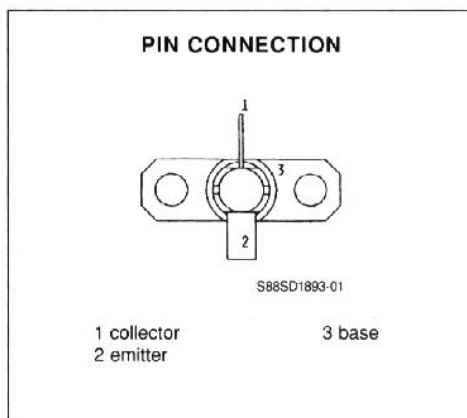


**RF & MICROWAVE TRANSISTORS  
 MARISAT APPLICATIONS**

- FREQUENCY 1.65GHz
- POWER OUT 10.0W
- POWER GAIN 11.0dB
- VOLTAGE 28.0V
- HERMETIC STRIPLINE PACKAGE
- ALL GOLD METALLIZED SYSTEM
- POLYSILICON SITE BALLASTING
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- COMMON BASE OPERATION



**DESCRIPTION**

The SD1893 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	45	V
$V_{CEO}$	Collector - Emitter Voltage	15	V
$V_{EBO}$	Emitter - Base Voltage	3.5	V
$I_C$	Collector Current (max.)	4.4	A
$P_{DISS}$	Total Device Dissipation at + 25°C	43	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	5.5	°C/W
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**SD1893**

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$ )

STATIC

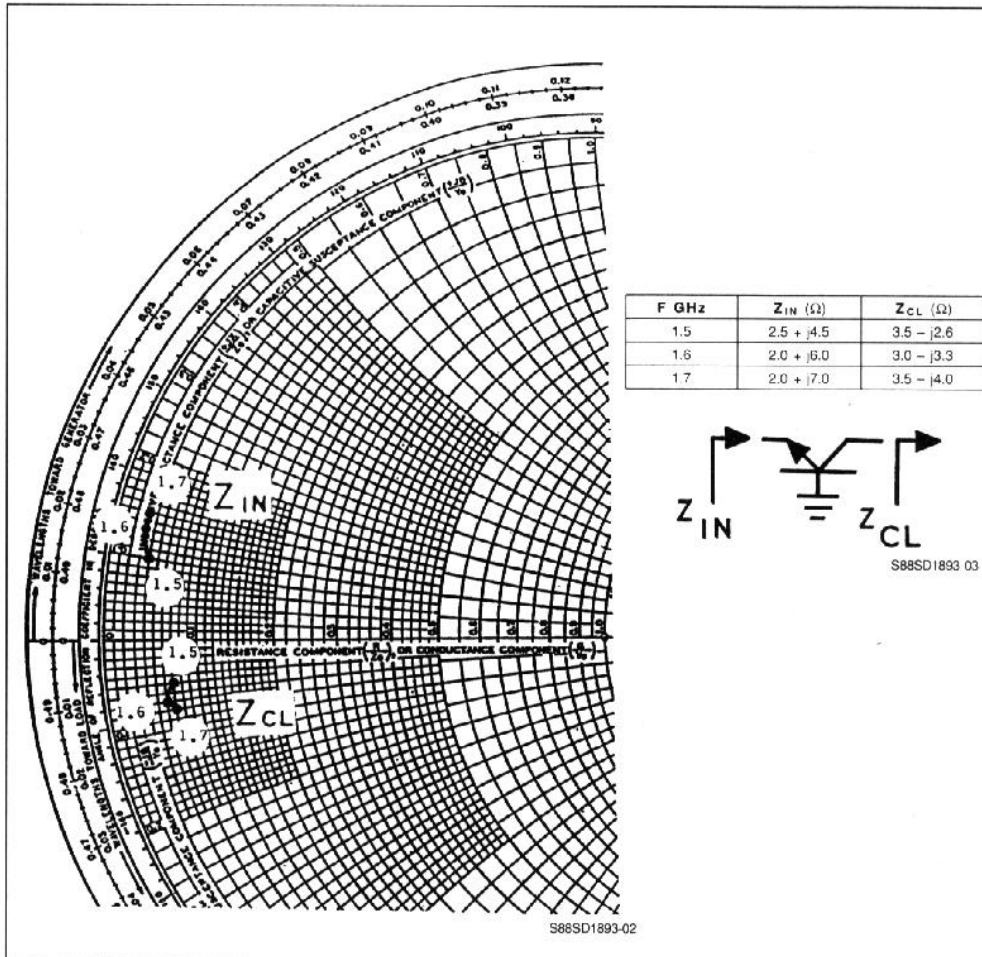
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 4mA$	45			V
$BV_{EBO}$	$I_E = 4mA$	3.5			V
$I_{CBO}$	$V_{CB} = 28V$			5	mA
$H_{FE}$	$V_{CE} = 5V$ $I_C = 500mA$	15		150	

DYNAMIC

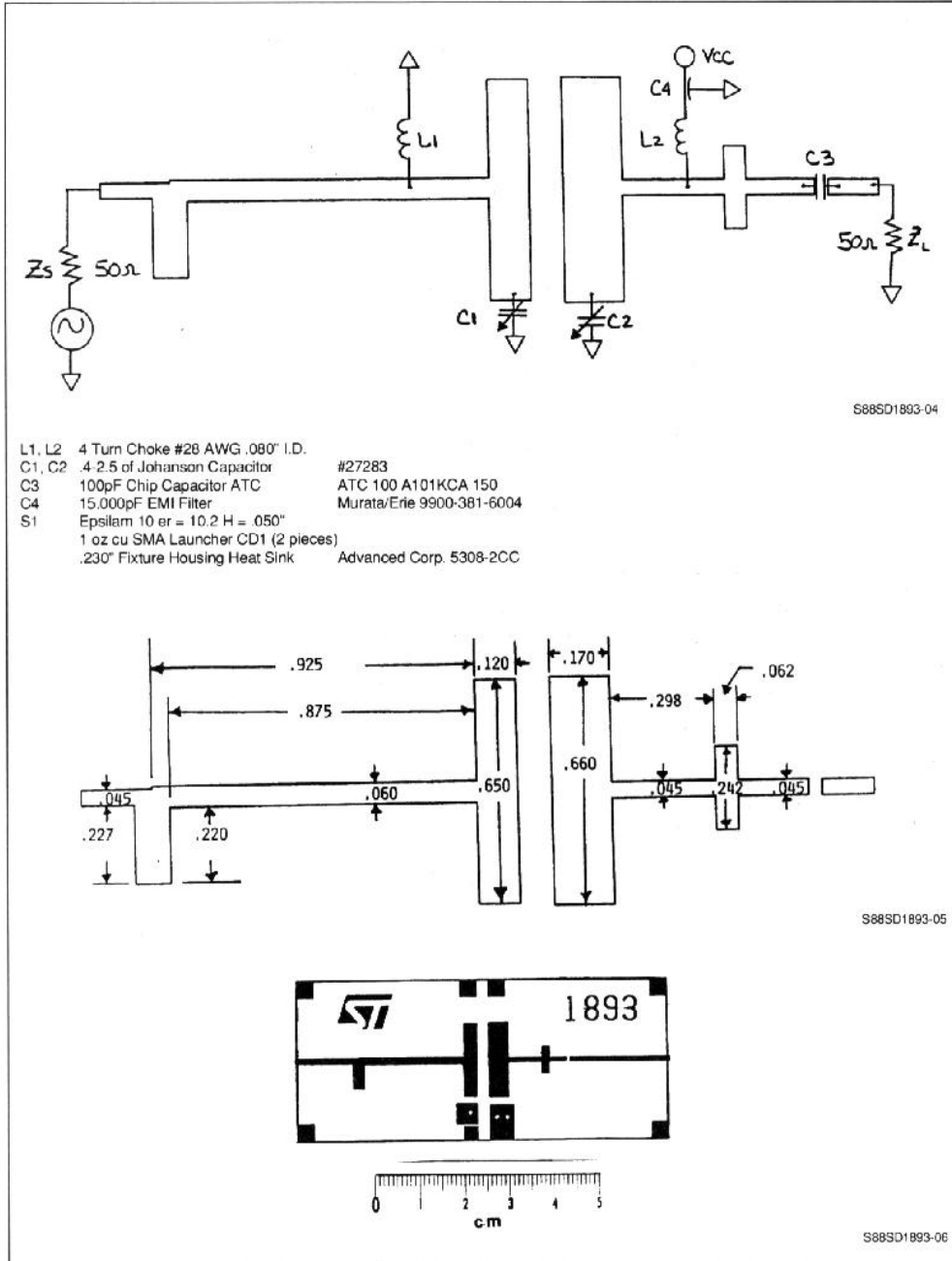
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$P_{OUT}$	$f = 1.65GHz$ $V_{CC} = 28V$ $P_{in} = 0.8W$	10			W
$P_{GAIN}$	$f = 1.65GHz$ $V_{CC} = 28V$ $P_{in} = 0.8W$	11			dB
$\eta_C$	$f = 1.65GHz$ $V_{CC} = 28V$ $P_o = 0.8W$	40			%
$C_{db}$	$V_{CB} = 28V$ $f = 1MHz$ $I_E = 0$			19	PF

**IMPEDANCE DATA** (typical values)

TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE

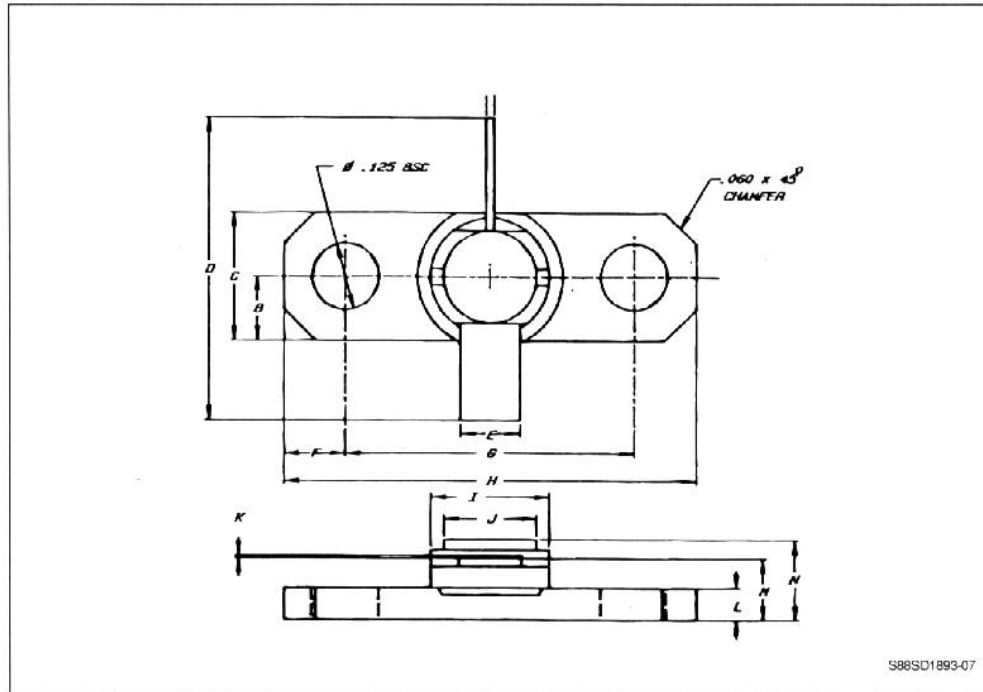


TEST CIRCUIT



## 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	