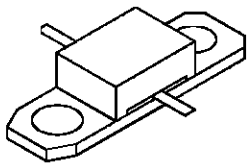
SGS-THOMSON MICROELECTRONICS

SD1895-03

RF & MICROWAVE TRANSISTORS 1.6 GHz SATCOM APPLICATIONS

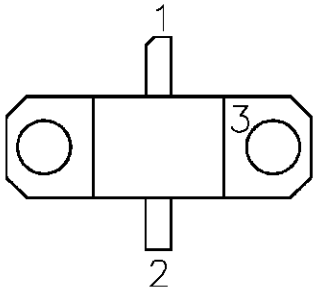
- 1.65 GHz
- 28 VOLTS
- OVERLAY DIE GEOMETRY
- ALL GOLD METALLIZED SYSTEM
- HIGH RELIABILITY AND RUGGEDNESS
- COOMON BASE
- P_{OUT} = 15 W MIN. WITH 9.2 dB GAIN



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

ORDER CODE	BRANDING
SD1895-03	SD1895-3

PIN CONNECTION



1. Collector
2. Emitter
3. Base

DESCRIPTION

The SD1895-03 is a 28 V silicon NPN planar transistor designed for INMARSAT and other 1.6 GHz SATCOM applications. This device utilizes polysilicon site ballasting with a gold metallized die to achieve high reliability and ruggedness.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Device Current	3.0	A
P_{DISS}	Power Dissipation	37.2	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	4.7	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

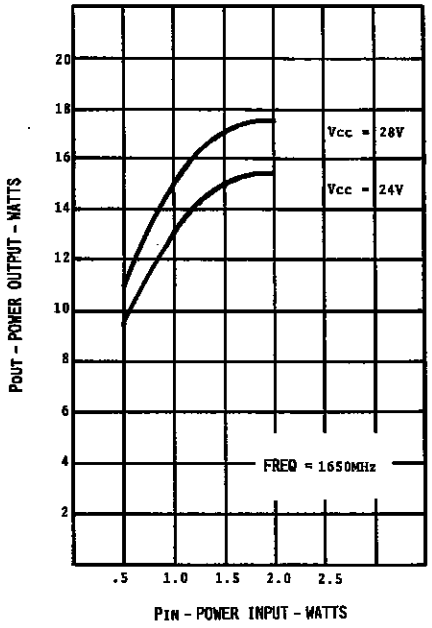
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 5 mA	I_E = 0 mA	45	—	—	V
BV_{CEO}	I_C = 5 mA	I_B = 0 mA	12	—	—	V
BV_{EBO}	I_E = 5 mA	I_C = 0 mA	3.0	—	—	V
h_{FE}	V_{CE} = 5 V	I_C = 1 A	15	—	150	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1.65 GHz	P_{IN} = 2.4 W	V_{CE} = 28 V	20	—	—	W
G_P	f = 1.65 GHz	P_{IN} = 2.4 W	V_{CE} = 28 V	9.2	—	—	dB
η_C	f = 1.65 GHz	P_{IN} = 2.4 W	V_{CE} = 28 V	48	—	—	%

TYPICAL PERFORMANCE

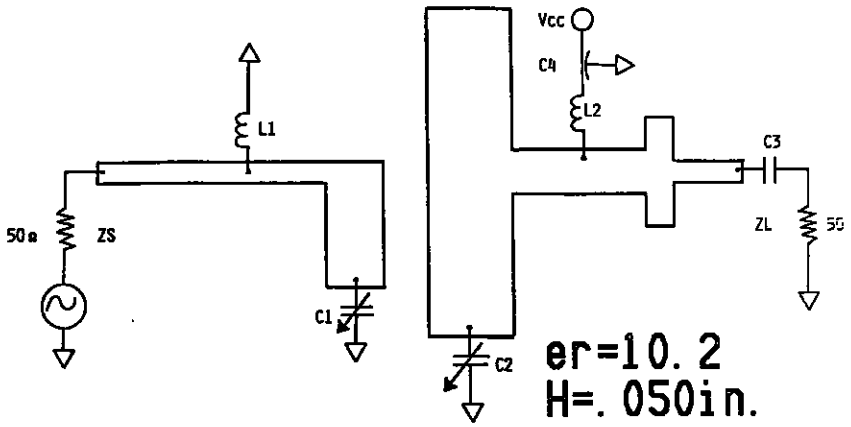
POWER OUTPUT vs POWER INPUT



IMPEDANCE DATA

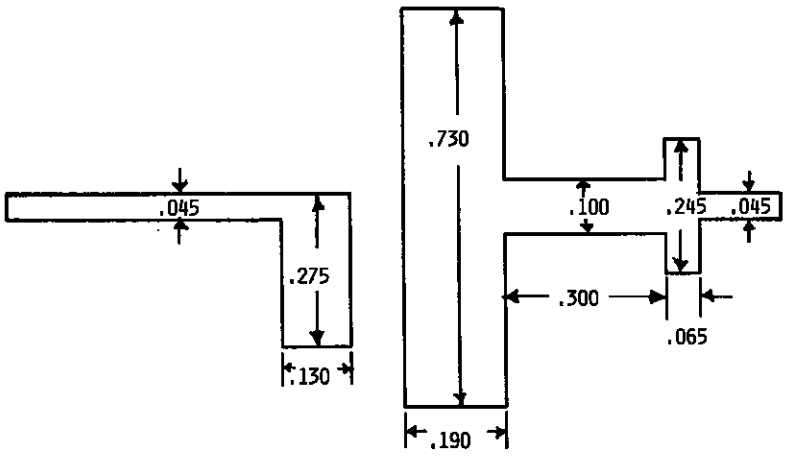
FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
1.65 GHz	17.0 + j 18.0	3.5 – j 2.0

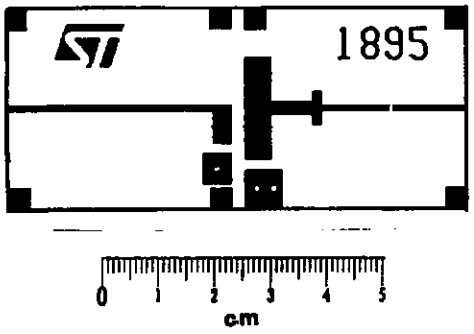
TEST CIRCUIT



C1, C2 : 0.4 - 2.5pF #27283 Johanson Trimmer
C3 : 100pF ATC 100A101KCA150 Chip Capacitor
C4 : 15,000pF EMI Filter Murata/Erie #9900-381-6004

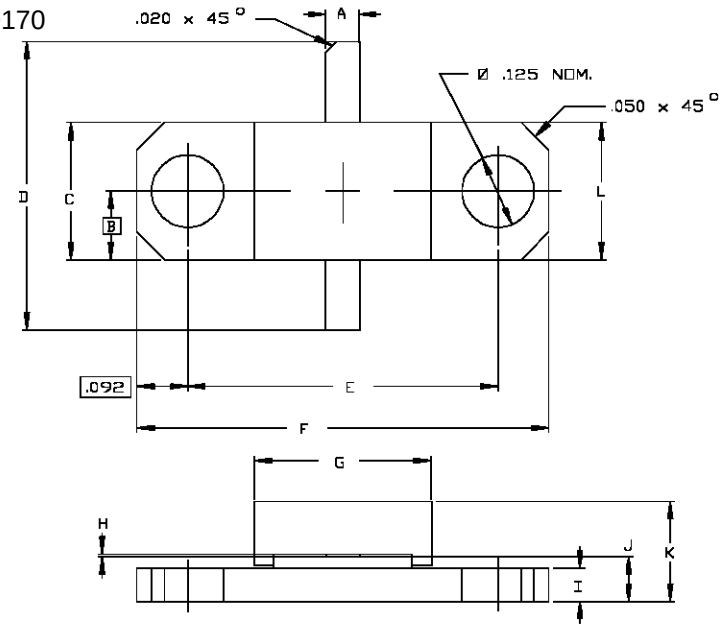
L1, L2 : 4 Turns, #28 AWG. .080" I.D.





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			