RF Products
Microsemi
Progress Powered by Technology

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SD1019

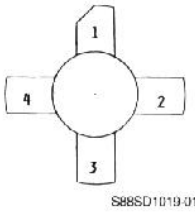
RF & MICROWAVE TRANSISTORS 108...152MHz APPLICATIONS

- CLASS C TRANSISTOR
- FREQUENCY 136MHz
- VOLTAGE 28V
- POWER OUT 80W
- POWER GAIN 9.0dB
- COMMON EMITTER

.5004LSTUD(M130)
epoxy sealed

ORDER CODE	BRANDING
SD1019	SD1019

PIN CONNECTION



S88SD1019-01

1 collector
2 emitter
3 base
4 emitter

DESCRIPTION

The SD1019 is a 28 volt epitaxial silicon NPN planar transistor designed primarily for VHF communications. This device utilizes nichrome aluminium metallization to achieve infinite VSWR at rated operating conditions.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	65.0	V
V_{CEO}	Collector - Emitter Voltage	35.0	V
V_{EBO}	Emitter - Base Voltage	4.0	V
I_C	Collector Current	9.0	A
P_{tot}	Total Power Dissipation	117.0	W
T_{stg}	Storage Temperature	– 65 to + 150	°C
T_j	Junction Temperature	+ 200	°C

THERMAL DATA

$R_{th(j-c)}$	Junction-case Thermal Resistance	1.7	°C/W

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

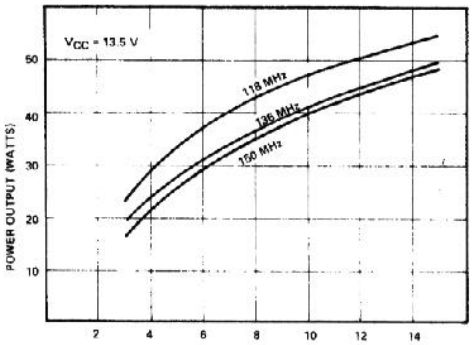
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 20mA	I_E = 0	65.0			V
BV_{CEO}	I_C = 200mA	I_B = 0	35.0			V
BV_{EBO}	I_E = 10mA	I_C = 0	4.0			V
I_{CBO}	V_{CB} = 30.0V	I_E = 0		1.5		mA
h_{FE}	V_{CE} = 5.0V	I_C = 500mA	5.0			

DYNAMIC

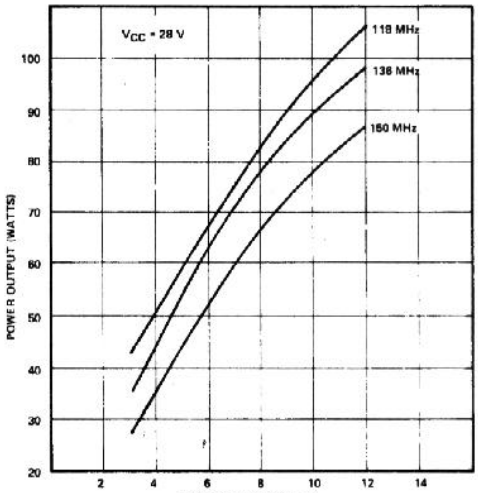
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_O	f = 136MHz	V_{CE} = 28.0V		80.0			W
G_P	f = 136MHz	V_{CE} = 28.0V		9.0			dB
C_{OB}	f = 1MHz	V_{CB} = 30.0V	I_E = 0			150	pF

APPLICATION INFORMATION (typical curves)



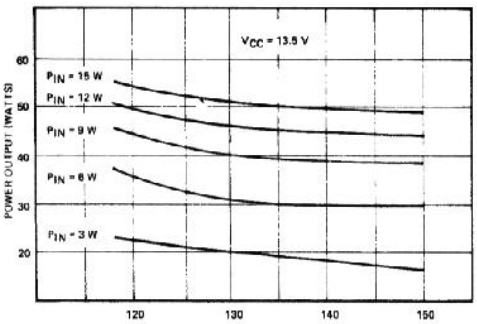
POWER INPUT (WATTS)
POWER OUTPUT VS. POWER INPUT

S88SD1019-02



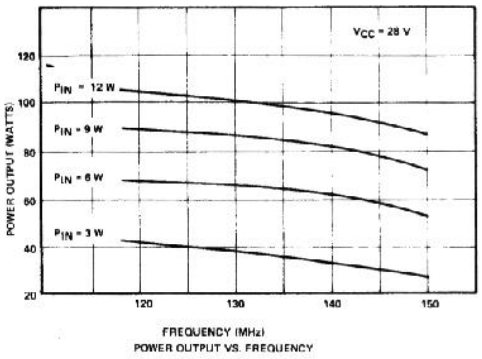
POWER INPUT (WATTS)
POWER OUTPUT VS. POWER INPUT

S88SD1019-03



FREQUENCY (MHz)
POWER OUTPUT VS. FREQUENCY

S88SD1019-04



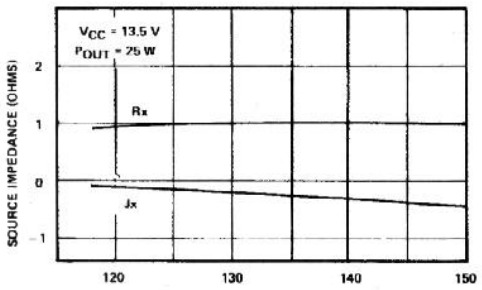
FREQUENCY (MHz)
POWER OUTPUT VS. FREQUENCY

S88SD1019-05

IMPEDANCE DATA (typical value)

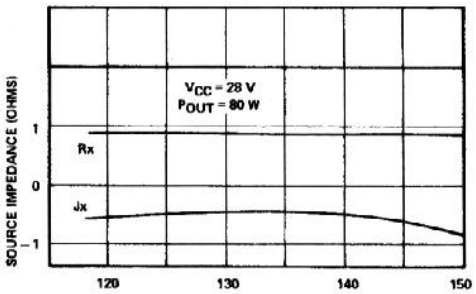
Z_S = .85 - j 0.5W
Z_{CL} = 4.5 + j 1.9W
F = 136MHz

V_{CE} = 28V
P_O = 80W



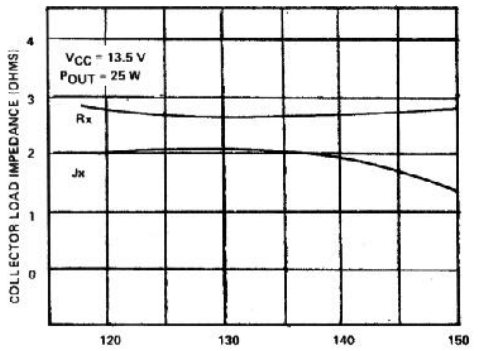
SERIES SOURCE IMPEDANCE VS. FREQUENCY

S88SD1019-06



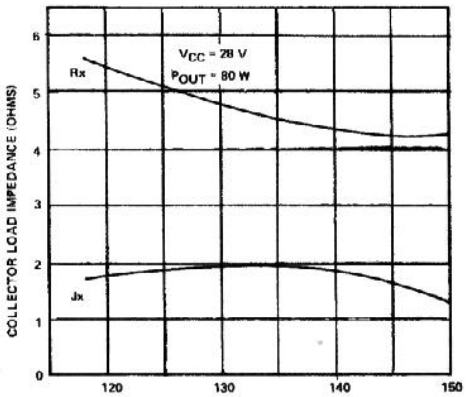
SERIES SOURCE IMPEDANCE VS. FREQUENCY

S88SD1019-07



SERIES COLLECTOR LOAD IMPEDANCE VS. FREQUENCY

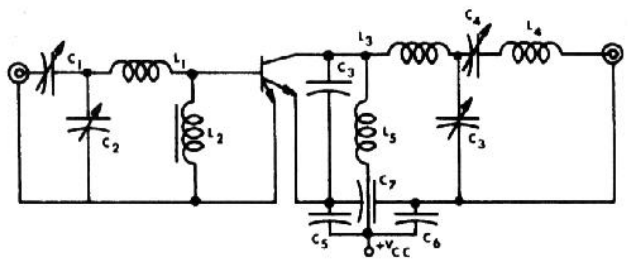
S88SD1019-09

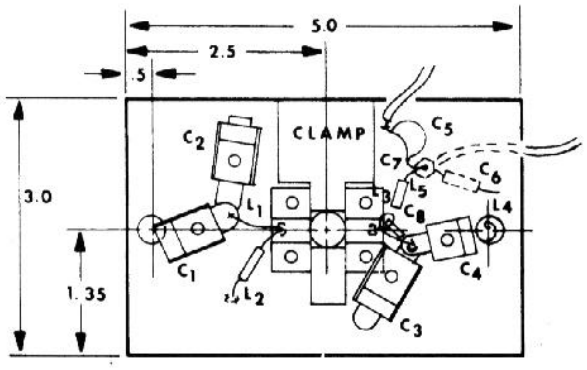


SERIES COLLECTOR LOAD IMPEDANCE VS. FREQUENCY

S88SD1019-10

TEST CIRCUIT



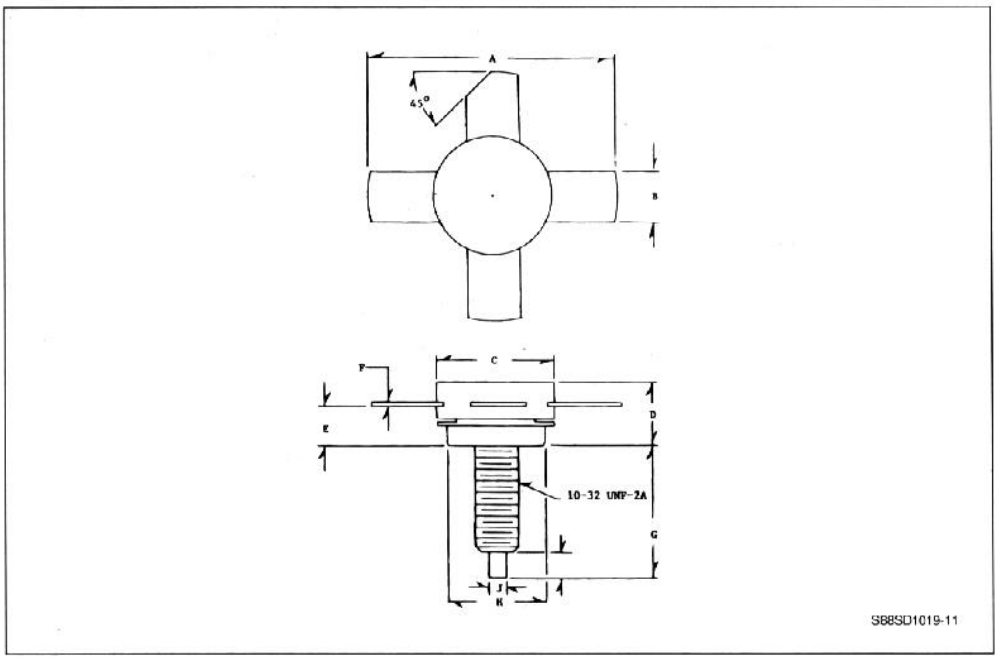


S88SD1019-10

C1 ARCO 462
C2, C3, C4 ARCO 463
C5 .02mF ERIE
C6 15mF SEMCOR
C7 AB 220pF FEEDTHRU
C8 150pF UNELCO
L1 NO. 14AWG. WIRE, .3 LONG
L2 12mH CHOKE
L3 1 TURN, NO 20 AWG, WIRE, 3" I.D., 25 LONG
L4 1 TURN, NO 16 AWG, WIRE, .23"I.D. .1 LONG
L5 .22mH DECI-DUCTOR

PACKAGE MECHANICAL DATA

.500 4LSTUD



	Minimum Inches	Maximum Inches
A		1.030
B	.220	.230
C	.490	.510
D	.250	.290
E	.160	.180
F	.004	.006
G	.550	.600
H	.415	.425
I	.100	.130
J	.065	.075