SGS-THOMSON MICROELECTRONICS

SD1272

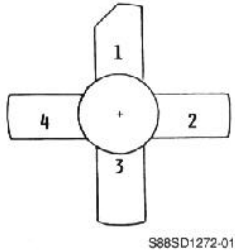
RF & MICROWAVE TRANSISTORS 130... 230MHz FM MOBILE APPLICATIONS

- FM CLASS C TRANSISTOR
- FREQUENCY 175MHz
- VOLTAGE 12.5V
- POWER OUT 25W
- POWER GAIN 9.2dB
- COMMON EMITTER

.380 4LSTUD (M135)
epoxy sealed

ORDER CODE	BRANDING
SD1272	SD1272

PIN CONNECTION



S88SD1272-01

1 collector
2 emitter
3 base
4 emitter

DESCRIPTION

The SD1272 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for VHF communications. This device utilizes a nichrome aluminum metallization system to withstand infinite VSWR under severe operating conditions.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	36.0	V
V_{CEO}	Collector - Emitter Voltage	18.0	V
V_{EBO}	Emitter - Base Voltage	4.0	V
I_C	Collector Current	4.0	A
P_{tot}	Total Power Dissipation	65.0	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	3.5	°C/W

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

STATIC

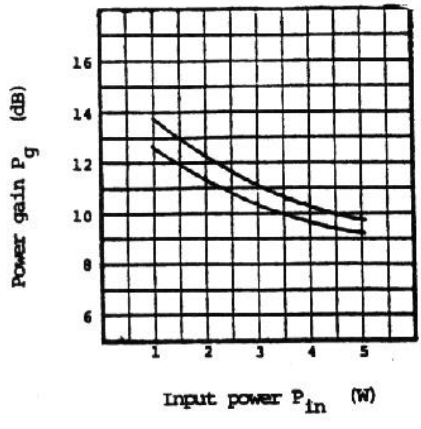
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 20mA	I_E = 0	36.0			V
BV_{CEO}	I_C = 50mA	I_B = 0	18.0			V
BV_{EBO}	I_E = 5mA	I_C = 0	4.0			V
I_{CBO}	V_{CB} = 15.0V	I_F = 0			5.0	mA
h_{FE}	V_{CE} = 5.0V	I_C = 250mA	5.0			

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_O	f = 175MHz	V_{CE} = 12.5V		25.0			W
G_P	f = 175MHz	V_{CE} = 12.5V		9.2			dB
C_{OB}	f = 1MHz	V_{CB} = 15.0V	I_E = 0			130.0	pF

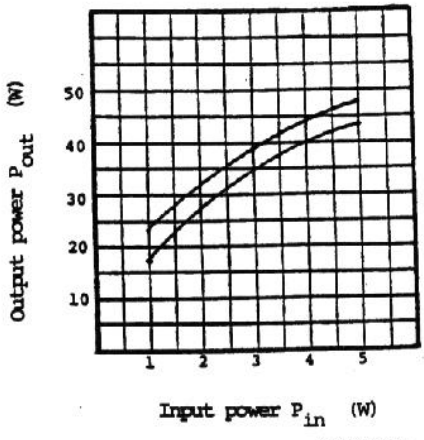
APPLICATION INFORMATION (typical curves)

POWER GAIN VS INPUT POWER



S88SD1272-02

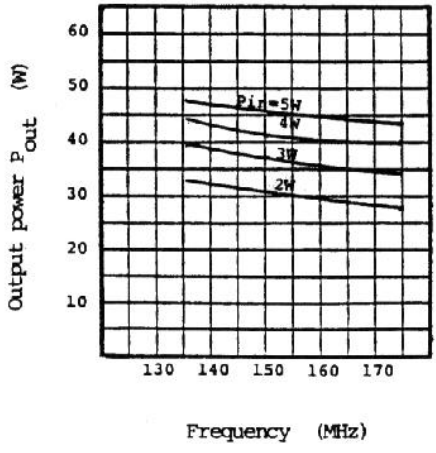
OUTPUT POWER VS INPUT POWER



S88SD1272-03

APPLICATION INFORMATION (typical curves)

OUTPUT POWER VS FREQUENCY



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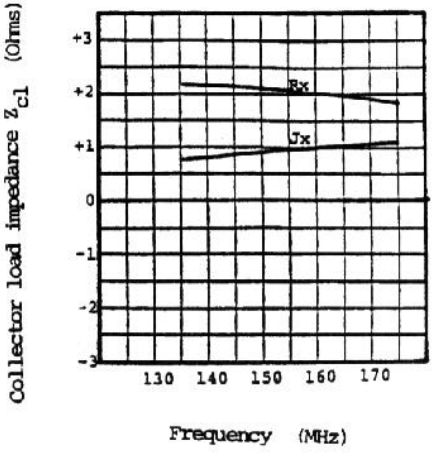
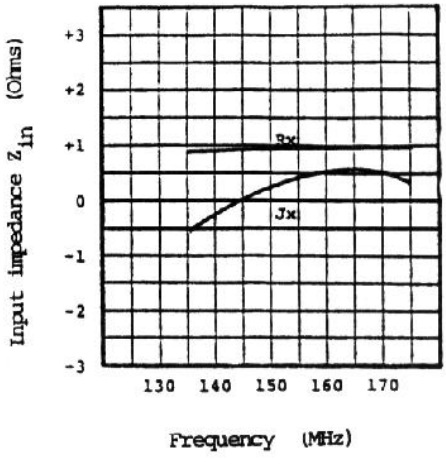
IMPEDANCE DATA (typical)

COLLECTOR LOAD IMPEDANCE VS FREQUENCY



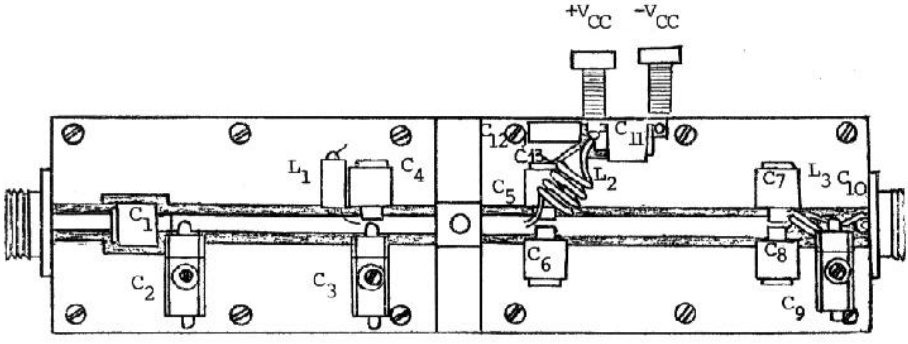
S88SD1272-07

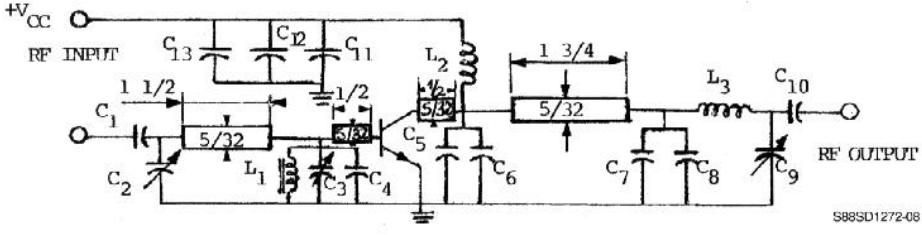
INPUT IMPEDANCE VS FREQUENCY



S88SD1272-06

TEST CIRCUIT



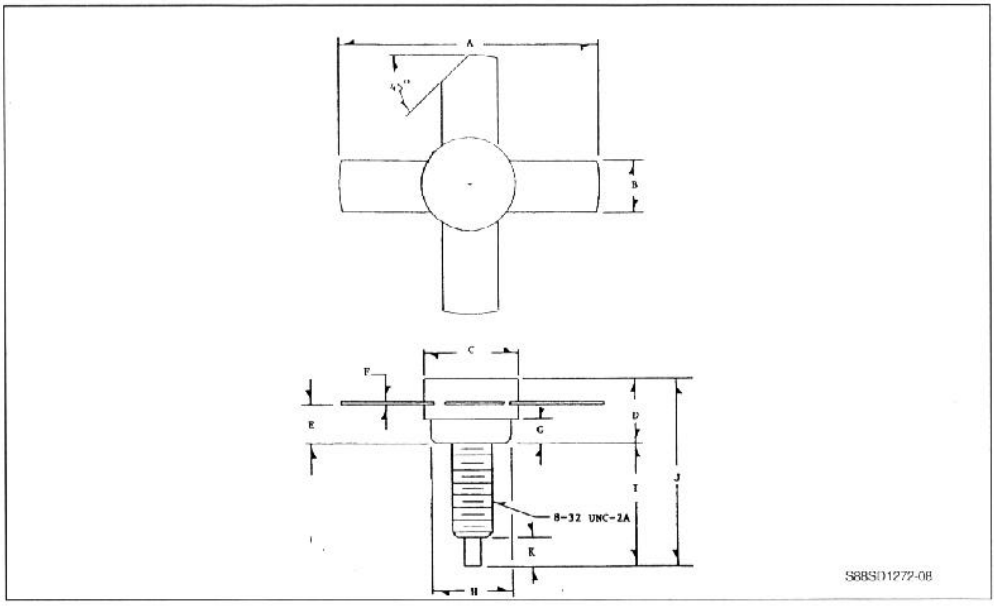


C_1, C_{11}	: 1000pf, UNELCO
C_2, C_3	: 24-200pf, ARCO
C_4	: 56pf, UNELCO
C_5, C_6	: 150pf, UNELCO
C_7, C_8	: 51pf, UNELCO
C_9	: 7-100pf, ARCO
C_{10}	: 0.01µF, ERIE RED CAP
C_{12}	: 10µF, ELECTROLYTIC, 35 VDC
C_{13}	: 0.10µF ERIE RED CAP
L_1	: RFC, 2½ turns on VK 211/07-3B Ferrocube
L_2	: 4 turns, # 18AWG, enameled, 3/8" I.D.
L_3	: 2½ turns, # 18 AWG, enameled, 1/4" I.D.

Material board double sided copper, 1/16" THK, 3M– K– 6098, mounted on 3/8 brass plates.

PACKAGE MECHANICAL DATA

.380 4LSTUD



	Minimum Inches	Maximum Inches
A	.980	
B	.220	.230
C	.370	.385
D		.275
E	.155	.175
F	.004	.007

	Minimum Inches	Maximum Inches
G	.090	.100
H	.320	.330
I	.450	.490
J		.750
K	.100	.130