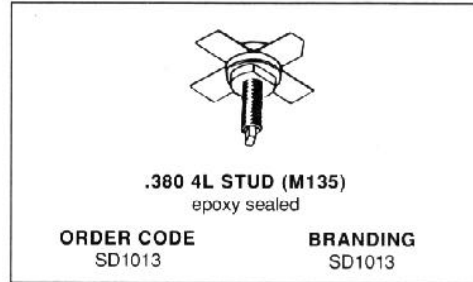
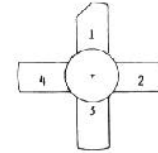


**RF & MICROWAVE TRANSISTORS  
108-152MHz APPLICATIONS**

- FM CLASS C TRANSISTOR
- FREQUENCY 150MHz
- VOLTAGE 28V
- POWER OUT 10W
- POWER GAIN 10dB
- EFFICIENCY 55% TYP
- COMMON EMITTER



**PIN CONNECTION**



S88SD1013-01

1 collector                      3 base  
2 emitter                        4 emitter

**DESCRIPTION**

The SD1013 is a 28V epitaxial silicon NPN planar transistor designed for 108-152 MHz FM applications.

This device utilizes diffused emitter resistors to achieve infinite VSWR at rated operating conditions.

**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector - Base Voltage	65.0	V
V <sub>CEO</sub>	Collector - Emitter Voltage	35.0	V
V <sub>CES</sub>	Collector - Emitter Voltage	65.0	V
V <sub>EBO</sub>	Emitter - Base Voltage	4.0	V
I <sub>C</sub>	Collector Current	1.0	A
P <sub>tot</sub>	Total Power Dissipation	13.0	W
T <sub>stg</sub>	Storage Temperature	- 65 to 150	°C
T <sub>J</sub>	Junction Temperature	200	°C

**THERMAL DATA**

R <sub>th(j-c)</sub>	Junction-case Thermal Resistance	13.5	°C/W
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**SD1013**

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

**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 20mA$	$I_E = 0$	65.0			V
$BV_{CES}$	$I_C = 200mA$	$V_{BE} = 0$	65.0			V
$BV_{CEO}$	$I_C = 200mA$	$I_B = 0$	35.0			V
$BV_{EBO}$	$I_E = 10.0mA$	$I_C = 0$	4.0			V
$I_{CBO}$	$V_{CB} = 30.0V$	$I_E = 0$			1.0	mA
$h_{FE}$	$V_{CE} = 5.0V$	$I_C = 200mA$	5.0			

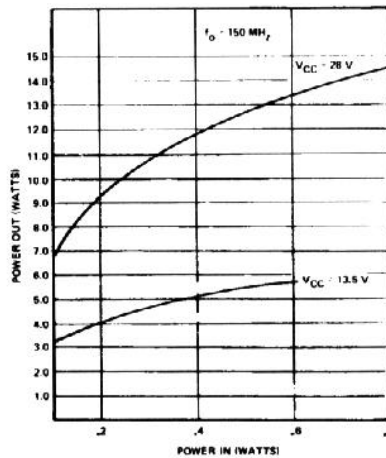
**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_O$	$f = 150MHz$	$V_{CC} = 28.0V$				10.0	W
$G_P$	$f = 150MHz$	$V_{CC} = 28.0V$				10.0	dB
$C_{ob}$	$f = 1MHz$	$V_{CB} = 30.0V$	$I_E = 0$			15	pF

When used at 13.5Volts performances are :  
 $P_{out} = 3.5Watt$  typical.  
 $G_p = 10.5dB$  typical.

**APPLICATION INFORMATION** (typical curves)

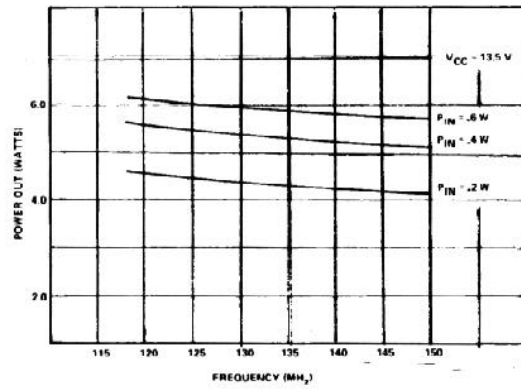
**POWER OUT VS POWER IN**



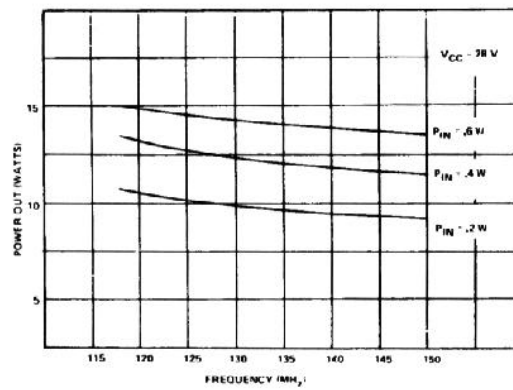
S88-SD1013-02

## APPLICATION INFORMATION (typical curves)

POWER OUT VS FREQUENCY (13.5V, 28V)



S88-SD1013-03

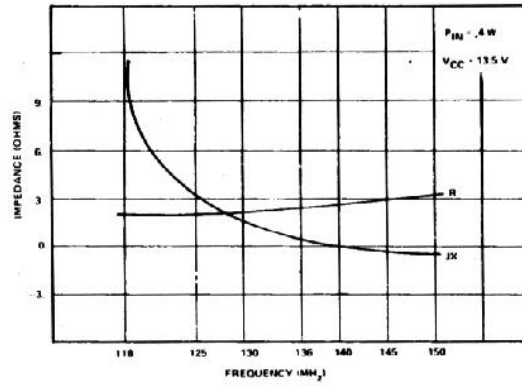


S88-SD1013-04

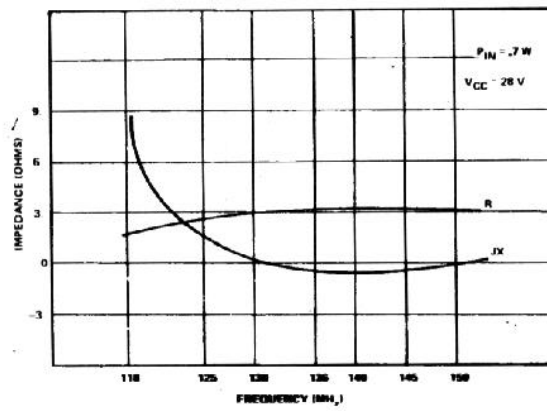
**SD1013**

**IMPEDANCES DATAS (typical)**

SERIES SOURCE IMPEDANCE VS FREQUENCY (13.5V, 28V)



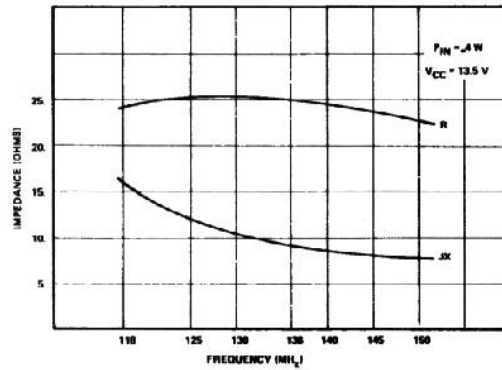
S88-SD1013-05



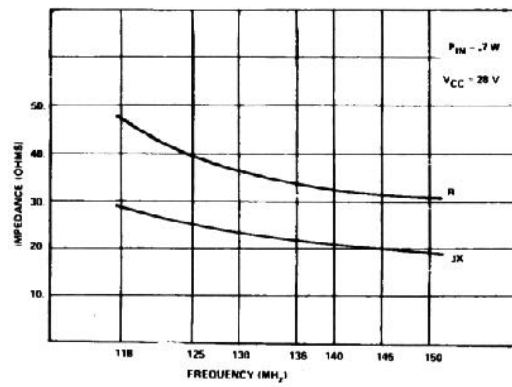
S88-SD1013-06

## IMPEDANCES DATAS (typical)(continued)

SERIES COLLECTOR LOAD IMPEDANCE VS FREQUENCY (13.5V, 28V)

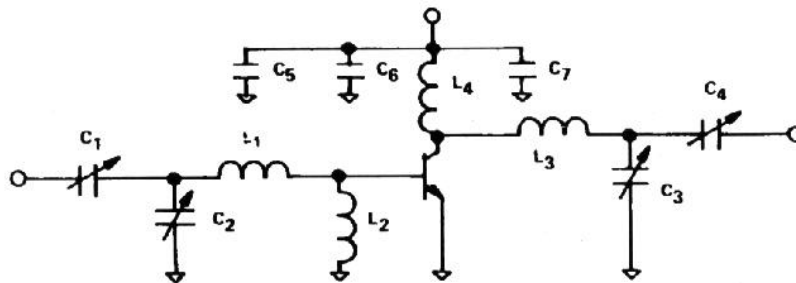
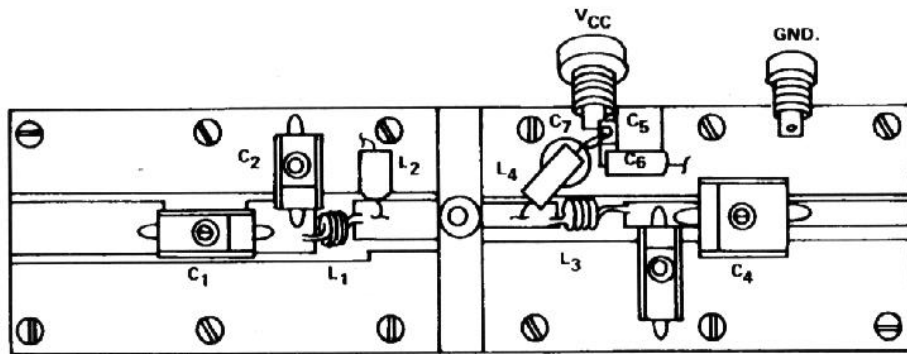


S88-SD1013-07



S88-SD1013-08

TEST FIXTURE



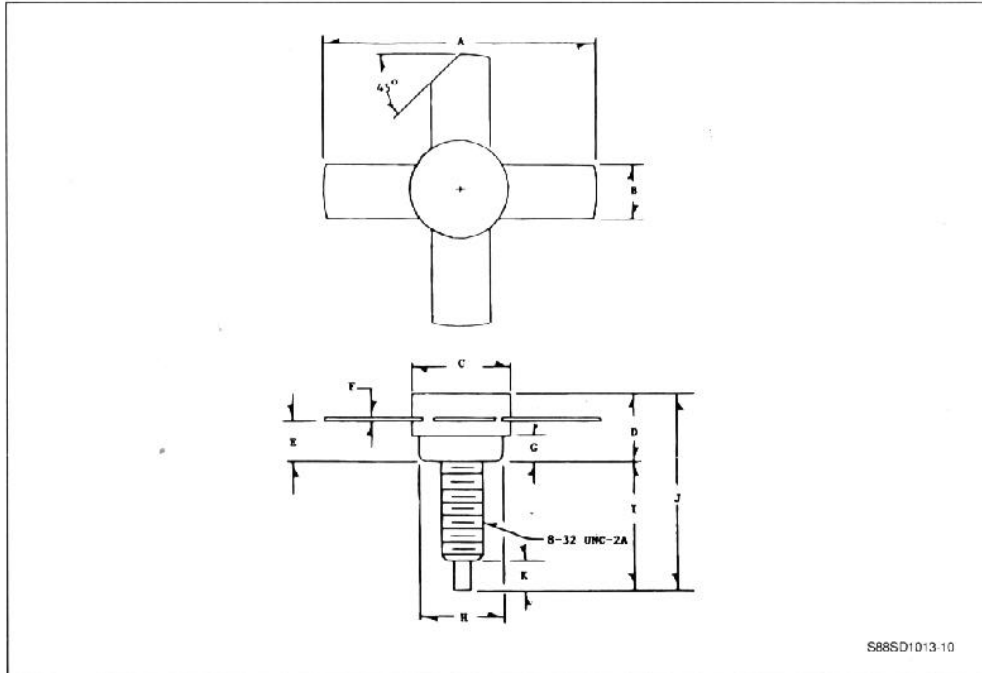
S88-GD1013-09

- C<sub>1</sub>, C<sub>2</sub> ARCO 422
- C<sub>3</sub> ARCO 421
- C<sub>4</sub> ARCO 464
- C<sub>5</sub> 1000pf UNELCO
- C<sub>6</sub> 10μf, ELECTROLYTIC 35V

- C<sub>7</sub> .01pf CERAMIC DISC
- L<sub>1</sub> 3T #22, 1/8 ID
- L<sub>2</sub> RFC FERROXCUBE
- L<sub>3</sub> 3T #18, 1/4 ID
- L<sub>4</sub> .47μh MOLDED CHOKE.

## PACKAGE MECHANICAL DATA

.380 4L STUD



	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