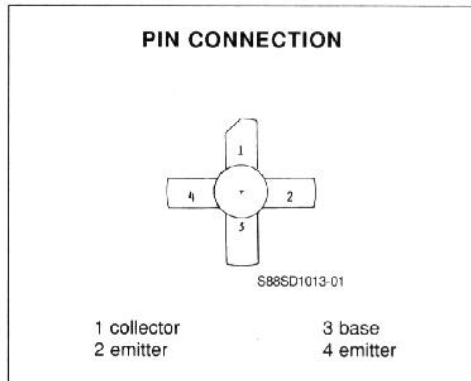
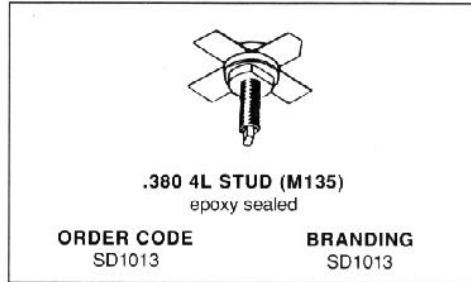


**RF & MICROWAVE TRANSISTORS
108-152MHz APPLICATIONS**

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



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	65.0	V
V_{CEO}	Collector - Emitter Voltage	35.0	V
V_{CES}	Collector - Emitter Voltage	65.0	V
V_{EBO}	Emitter - Base Voltage	4.0	V
I_C	Collector Current	1.0	A
P_{tot}	Total Power Dissipation	13.0	W
T_{stg}	Storage Temperature	- 65 to 150	$^{\circ}C$
T_J	Junction Temperature	200	$^{\circ}C$

THERMAL DATA

$R_{th(j-c)}$	Junction-case Thermal Resistance	13.5	$^{\circ}C/W$
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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			

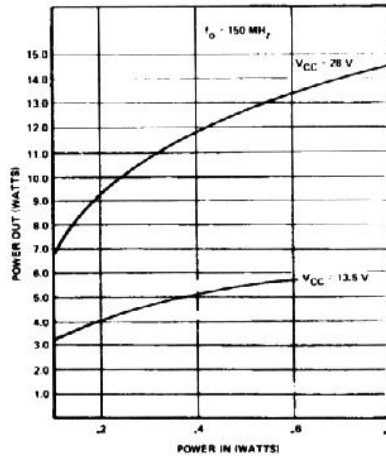
DYNAMIC

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)

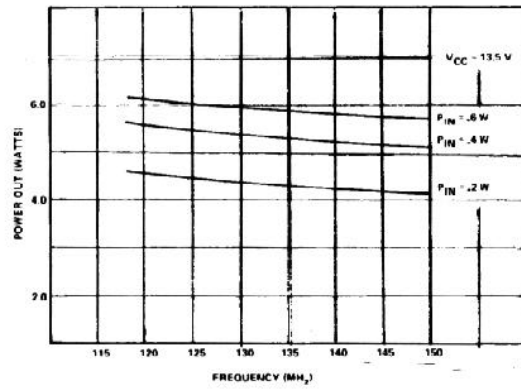
POWER OUT VS POWER IN



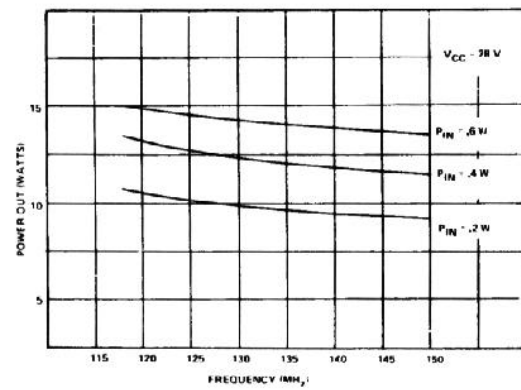
S88-SD1013-02

APPLICATION INFORMATION (typical curves)

POWER OUT VS FREQUENCY (13.5V, 28V)



S88-SD1013-03

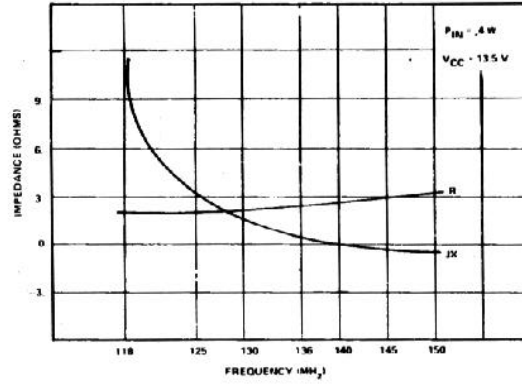


S88-SD1013-04

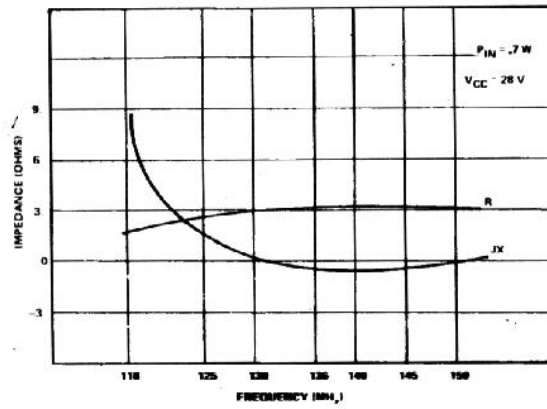
SD1013

IMPEDANCES DATAS (typical)

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



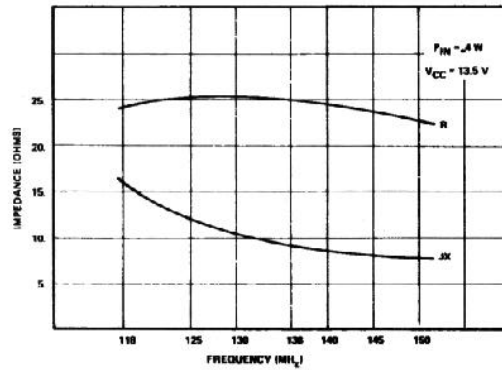
S88-SD1013-05



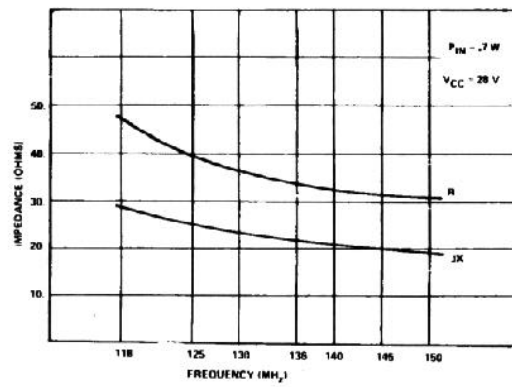
S88-SD1013-06

IMPEDANCES DATAS (typical)(continued)

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

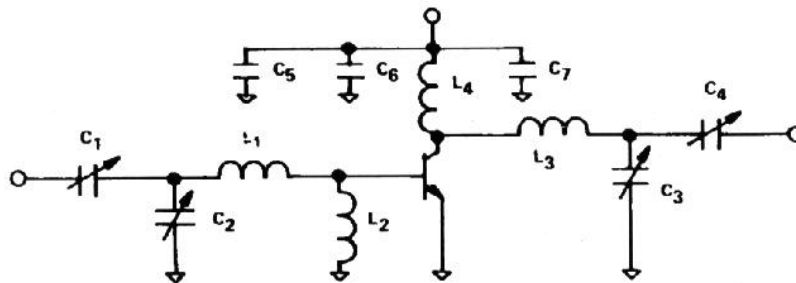
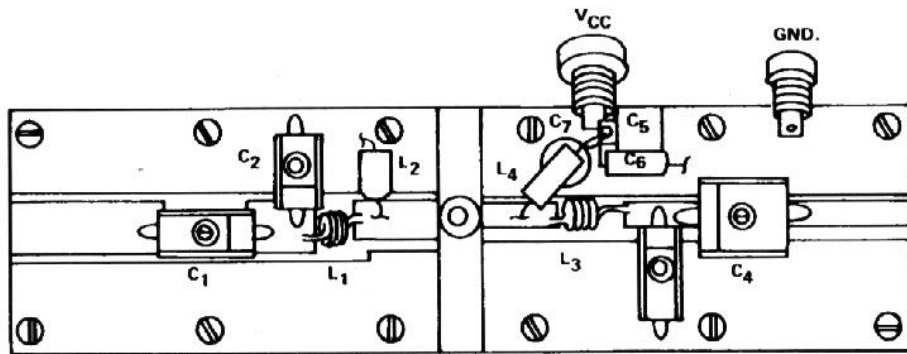


S88-SD1013-07



S88-SD1013-08

TEST FIXTURE



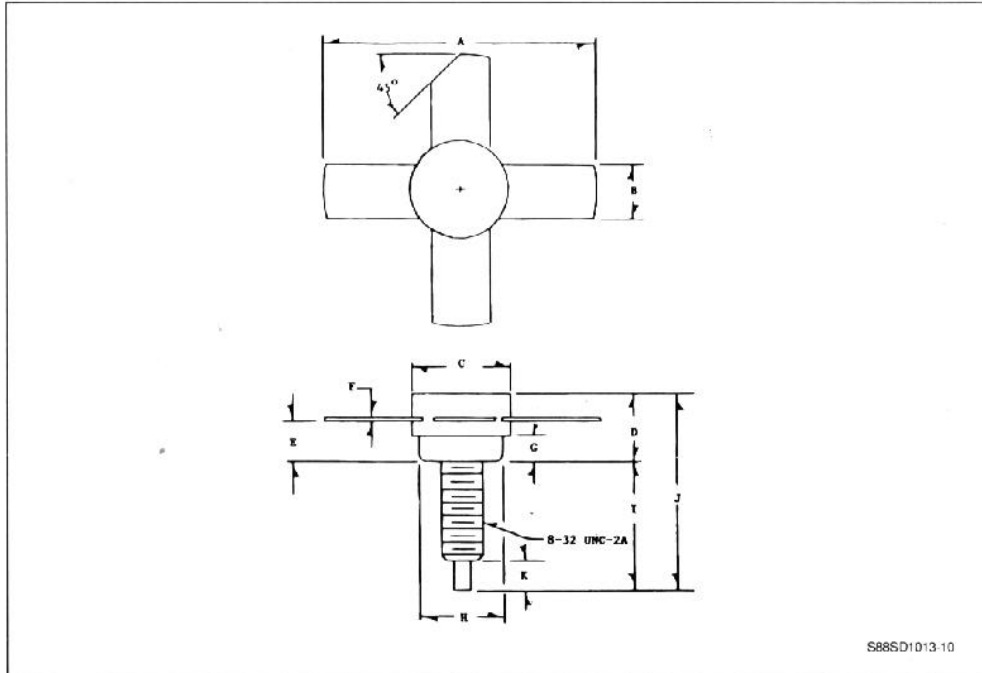
S88-GD1013-09

- C₁, C₂ ARCO 422
- C₃ ARCO 421
- C₄ ARCO 464
- C₅ 1000pf UNELCO
- C₆ 10μf, ELECTROLYTIC 35V

- C₇ .01pf CERAMIC DISC
- L₁ 3T #22, 1/8 ID
- L₂ RFC FERROXCUBE
- L₃ 3T #18, 1/4 ID
- L₄ .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