

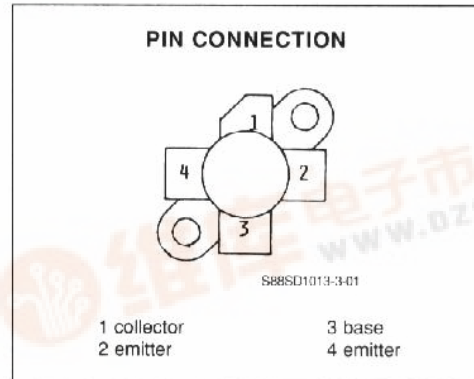
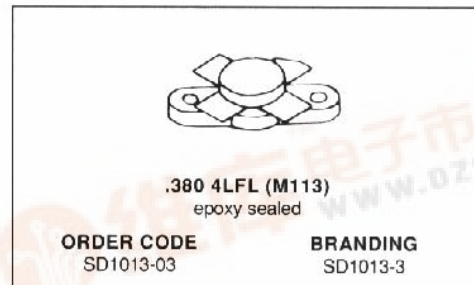


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SD1013-3

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 SD1013-3 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°C)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector - Base Voltage	65	V
V _{CE0}	Collector - Emitter Voltage	35	V
V _{CES}	Collector - Emitter Voltage	65	V
V _{EB0}	Emitter - Base Voltage	4	V
I _C	Collector Current	1	A
P _{tot}	Total Power Dissipation	13	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	13.5	°C/W
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March 1989

1/7

115



SD1013-3

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 200mA$	$I_E = 0$	65			V
BV_{CES}	$I_C = 200mA$	$V_{BE} = 0$	65			V
BV_{CEO}	$I_C = 200mA$	$I_B = 0$	35			V
BV_{EBO}	$I_E = 10.0mA$	$I_C = 0$	4			V
I_{CBO}	$V_{CB} = 30.0V$	$I_E = 0$			1	mA
h_{FE}	$V_{CE} = 5.0V$	$I_C = 200mA$	5		200	

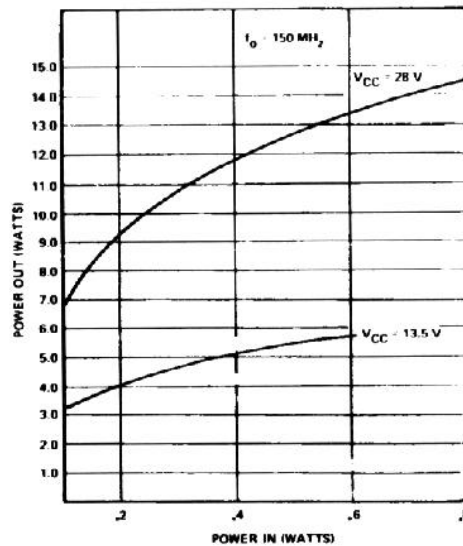
DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P_O	$f = 150MHz$	$V_{CC} = 28V$	10			W
G_P	$f = 150MHz$	$V_{CC} = 28V$	10			dB
C_{dB}	$f = 1MHz$	$V_{CB} = 30V$			15	pF

When used $V_{CC} = 13.5V$ performances are :
 $P_{OUT} = 3.5Watt$ typical.
 $G_P = 10.5dB$ typical.

APPLICATION INFORMATION (typical curves)

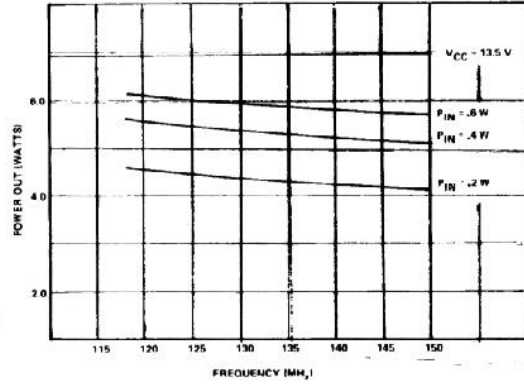
POWER OUT VS POWER IN



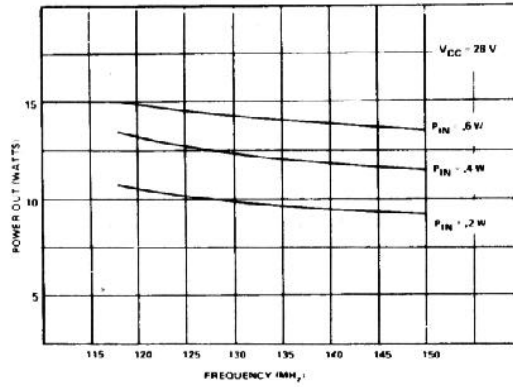
S88-SD1013-3-02

APPLICATION INFORMATION (typical curves)

POWER OUT VS FREQUENCY (13.5V, 28V)



V_{CC} = 13.5 V
S88-SD1013-3-03

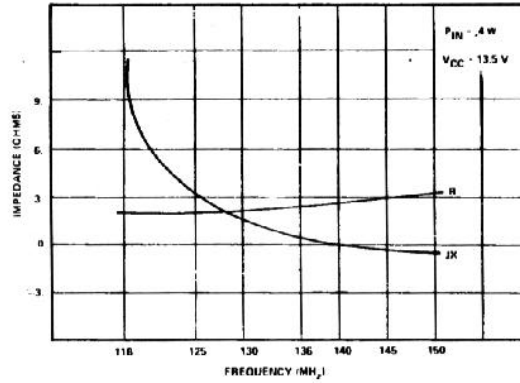


V_{CC} = 28 V
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SD1013-3

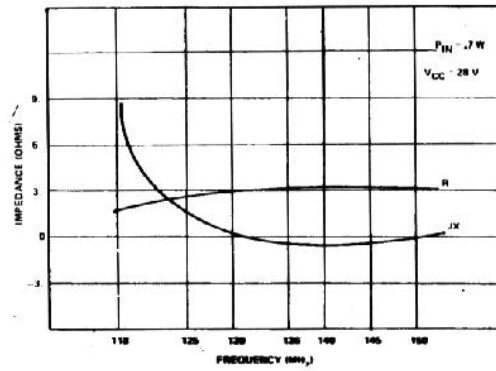
IMPEDANCES DATAS (typical)

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



$V_{CC} = 13.5 V$

S88-SD1013-3-05

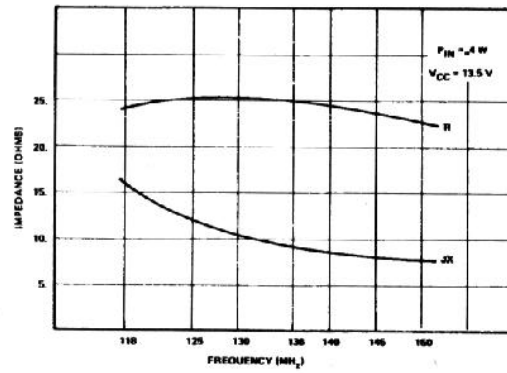


$V_{CC} = 28 V$

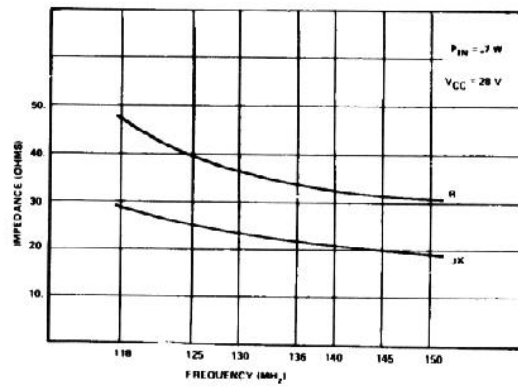
S88-SD1013-3-06

IMPEDANCES DATAS (typical)(continued)

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


 $V_{CC} = 13.5\text{ V}$

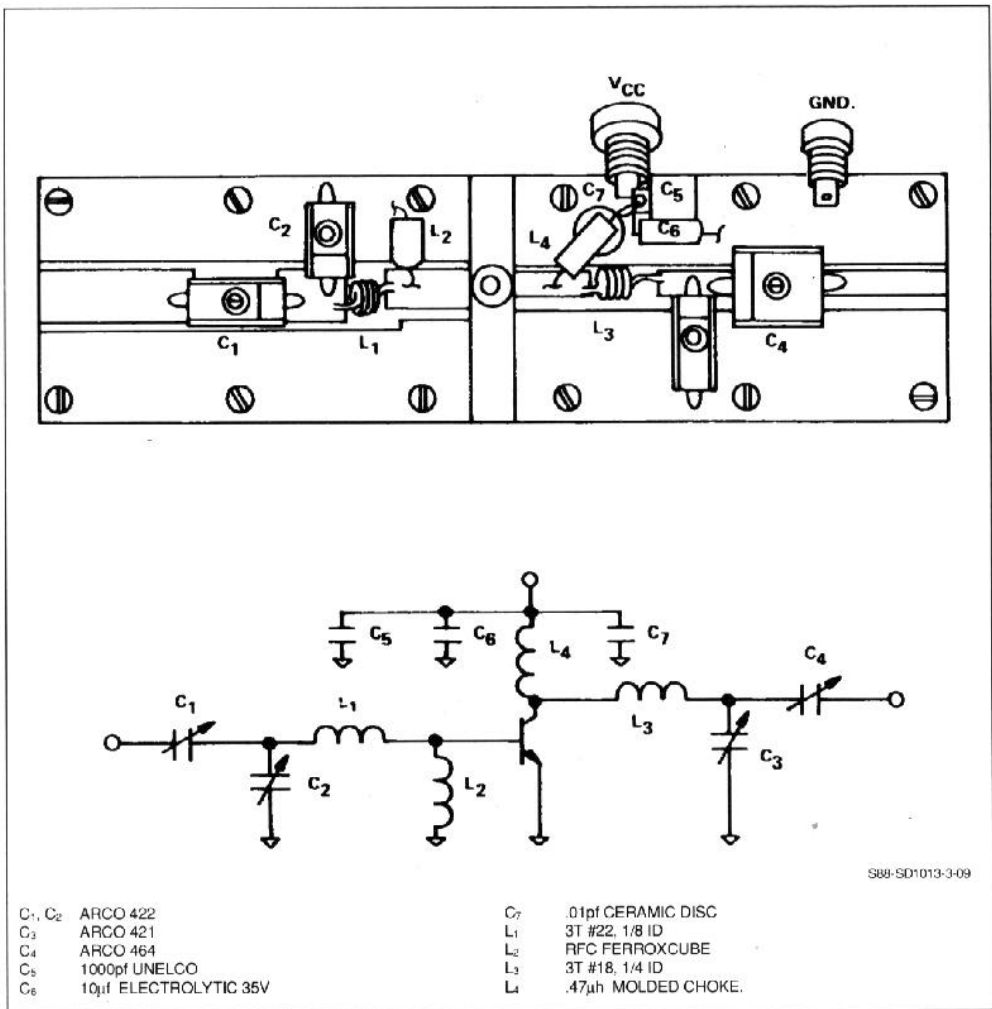
S88-SD1013-3-07


 $V_{CC} = 28\text{ V}$

S88-SD1013-3-08

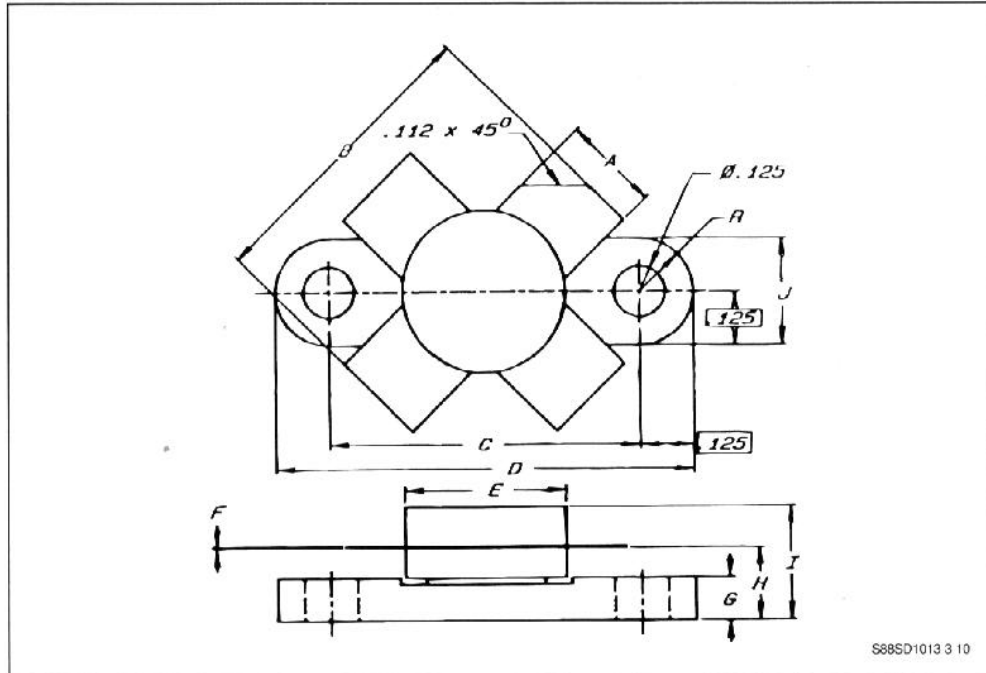
SD1013-3

TEST FIXTURE



PACKAGE MECHANICAL DATA

.380 4LFL



S88SD1013 3 10

	Minimum Inches/mm	Maximum Inches/mm
A	.220/5.59	.230/5.84
B	.785/19.94	
C	.720/18.29	.730/18.54
D	.970/24.64	.980/24.89
E		.385/9.78
F	.004/0.10	.006/0.15
G	.085/2.16	.105/2.67
H	.160/4.06	.180/4.57
I		.280/7.11
J	.240/6.10	.255/6.48