

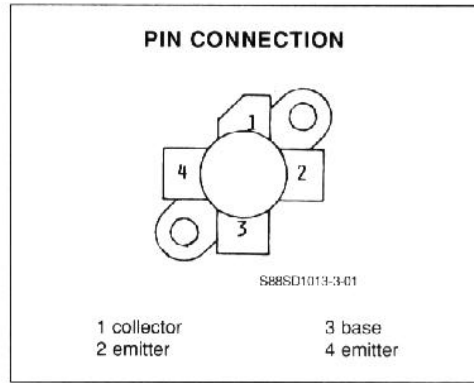
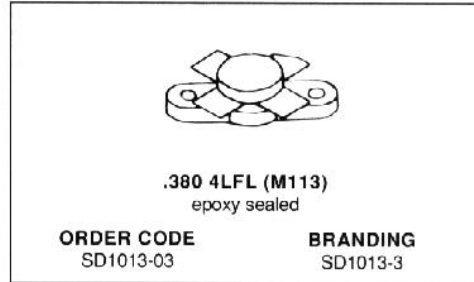


140 Commerce Drive
 Montgomeryville, PA 18936-1013
 Tel: (215) 631-9840

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	65	V
V_{CEO}	Collector - Emitter Voltage	35	V
V_{CES}	Collector - Emitter Voltage	65	V
V_{EBO}	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	$^{\circ}C$
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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SD1013-3

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	

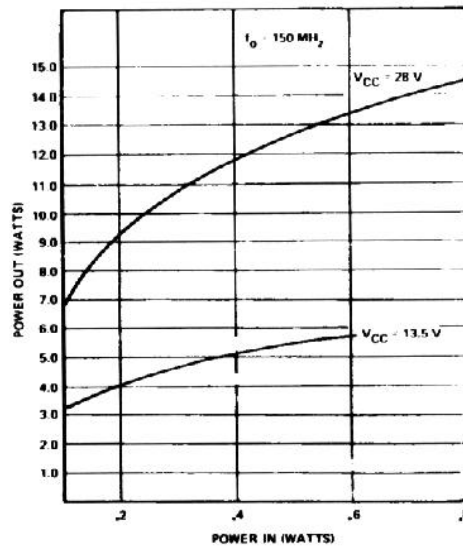
DYNAMIC

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_{ob}	$f = 1MHz$ $V_{CB} = 30V$ $I_E = 0$			15	pF

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

APPLICATION INFORMATION (typical curves)

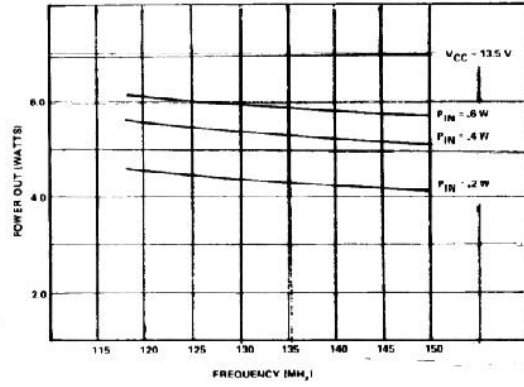
POWER OUT VS POWER IN



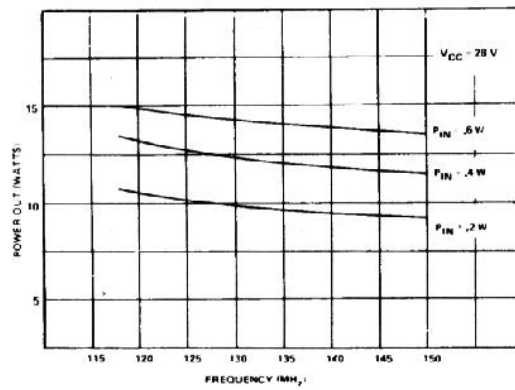
S88-SD1013-3-02

APPLICATION INFORMATION (typical curves)

POWER OUT VS FREQUENCY (13.5V, 28V)



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

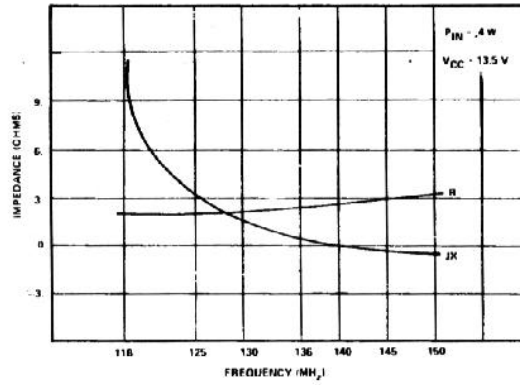


$V_{CC} = 28\text{ V}$
S88-SD1013-3-04

SD1013-3

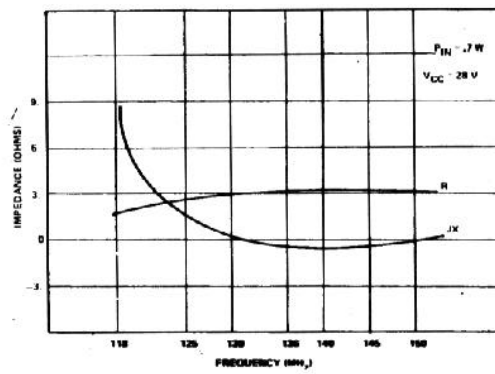
IMPEDANCES DATAS (typical)

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



$V_{CC} = 13.5 V$

S88-SD1013-3-05

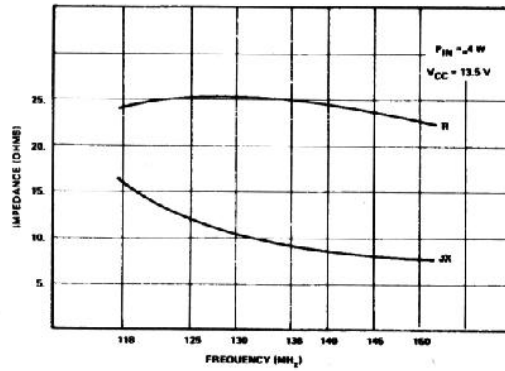


$V_{CC} = 28 V$

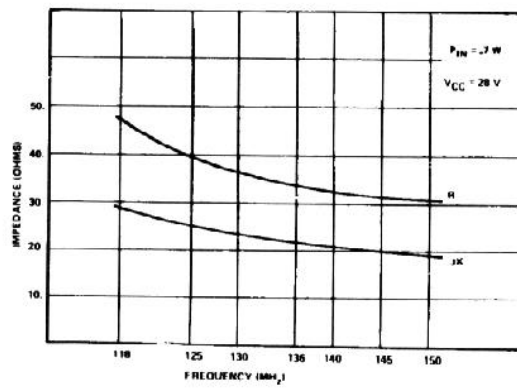
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IMPEDANCES DATAS (typical)(continued)

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

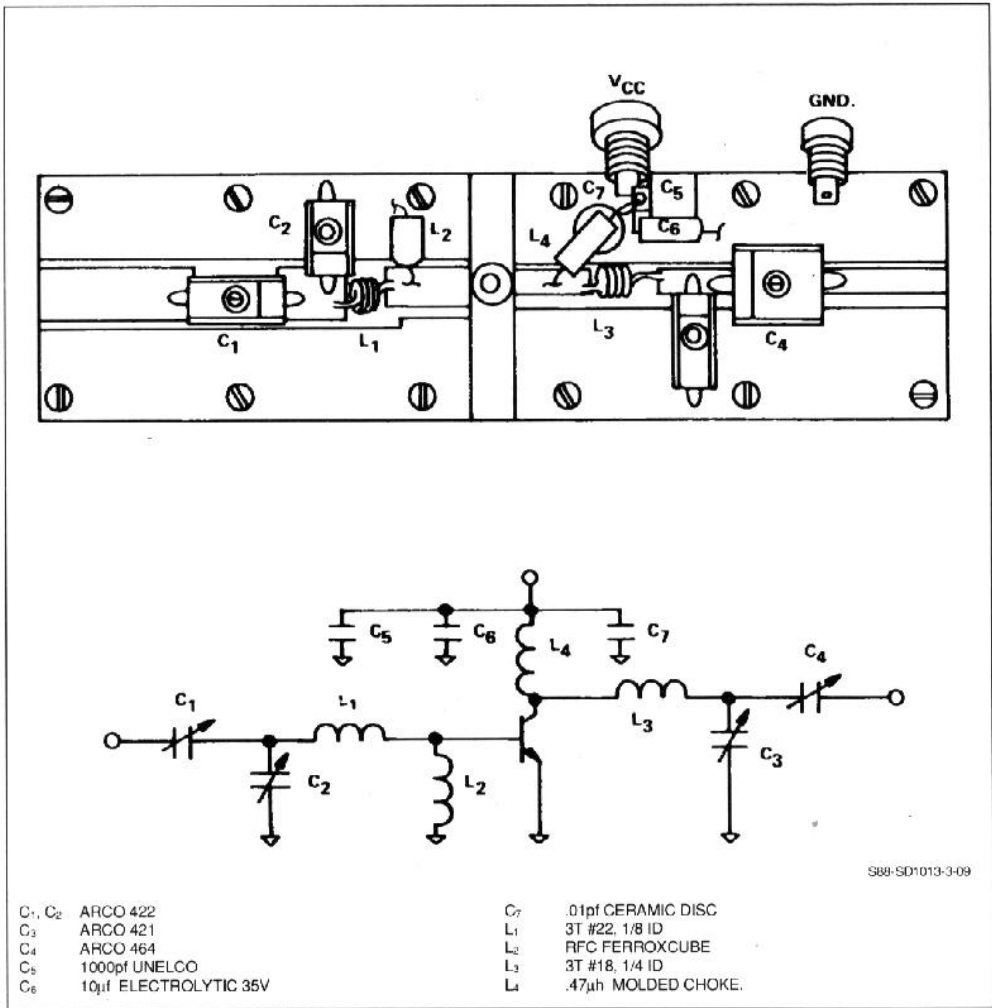
 $V_{CC} = 13.5 V$

S88-SD1013-3-07

 $V_{CC} = 28 V$

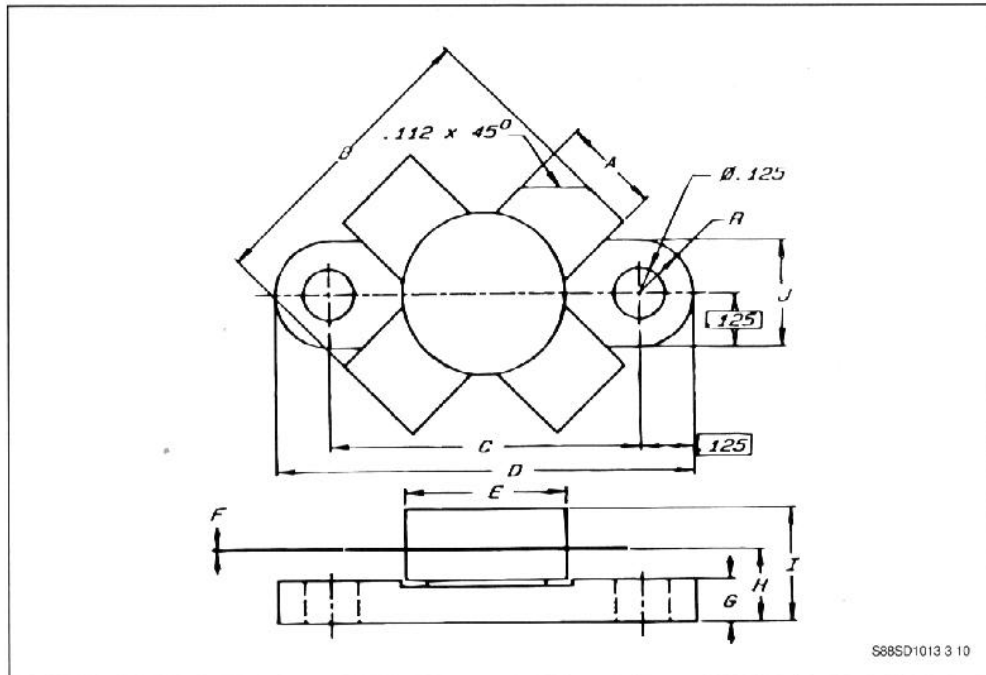
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TEST FIXTURE



PACKAGE MECHANICAL DATA

380 4LFL



	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