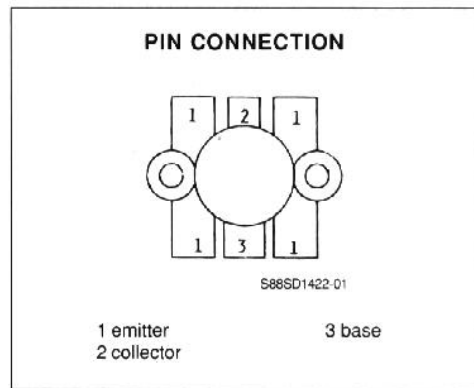
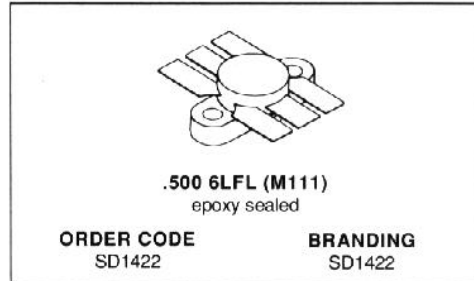


RF & MICROWAVE TRANSISTORS
450 - 512MHz CLASS C, MOBILE APPLICATIONS

- CLASS C TRANSISTOR
- FREQUENCY 470MHz
- VOLTAGE 12.5V
- POWER OUT 25.0W
- POWER GAIN 6.2dB
- COMMON EMITTER
- GOLD METALLIZATION



DESCRIPTION

The SD1422 is a 12.5V epitaxial silicon NPN planar transistor designed for broadband applications in the 450-512MHz land mobile radio band. This device utilizes diffused emitter resistors to withstand 20:1 VSWR at rated operating conditions.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	36.0	V
V_{CEO}	Collector - Emitter Voltage	16.0	V
V_{CES}	Collector - Emitter Voltage	36	V
V_{EBO}	Emitter - Base Voltage	4.0	A
I_C	Collector Current	4.8	W
P_{tot}	Total Power Dissipation	70.0	$^{\circ}C$
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	2.5	$^{\circ}C/W$
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SD1422

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

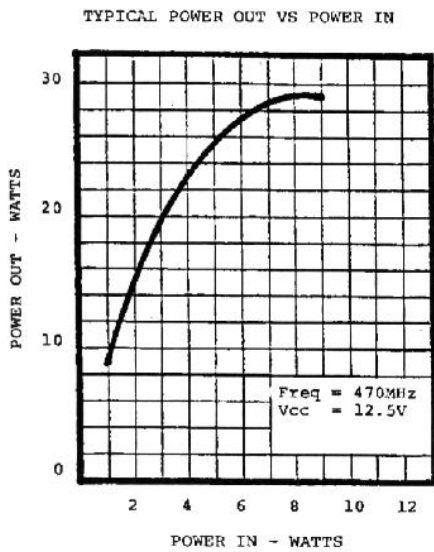
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 10mA$	$V_{BE} = 0$	36.0			V
BV_{CEO}	$I_C = 50mA$	$I_B = 0$	16.0			V
BV_{EBO}	$I_E = 5mA$	$I_C = 0$	4.0			V
I_{CES}	$V_{CE} = 12.5V$	$V_{BE} = 0$			5.0	mA
h_{FE}	$V_{CE} = 5.0V$	$I_C = 1.0A$	10.0			

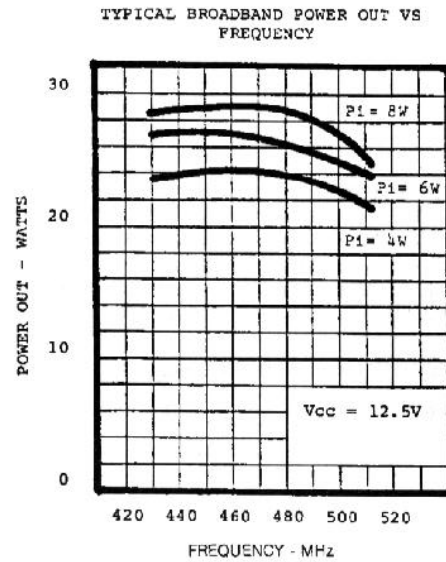
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_O	$f = 470MHz$	$V_{CE} = 12.5V$				25.0	W
G_p	$f = 470MHz$	$V_{CE} = 12.5V$				6.2	dB
C_{ob}	$f = 1MHz$	$V_{CB} = 12.5V$	$I_E = 0$			70.0	pF

APPLICATION INFORMATION (typical curves)

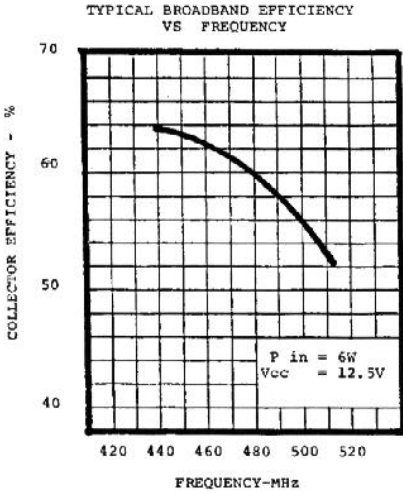


S88SD1422-02

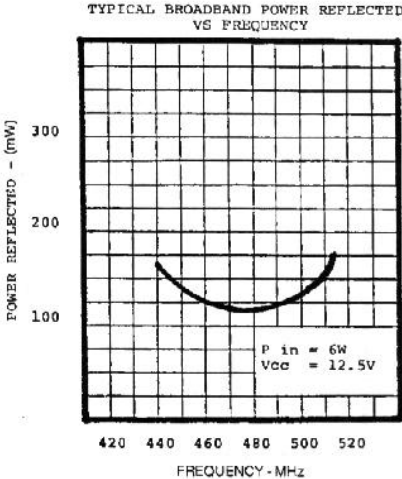


S88S1422 03

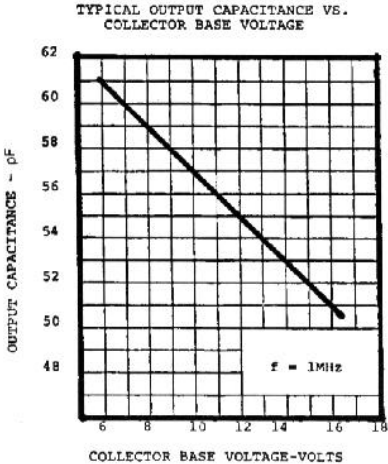
APPLICATION INFORMATION (typical curves) (continued)



S88SD1422-04

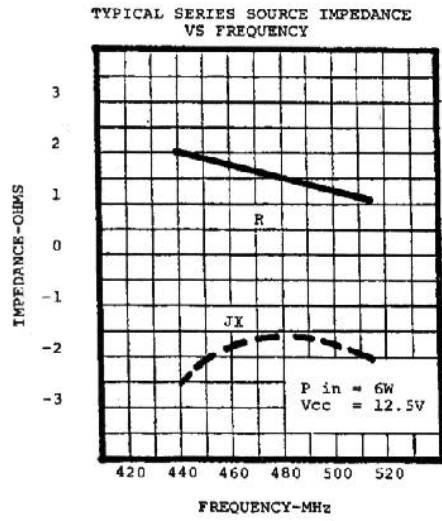


S88S1422-05

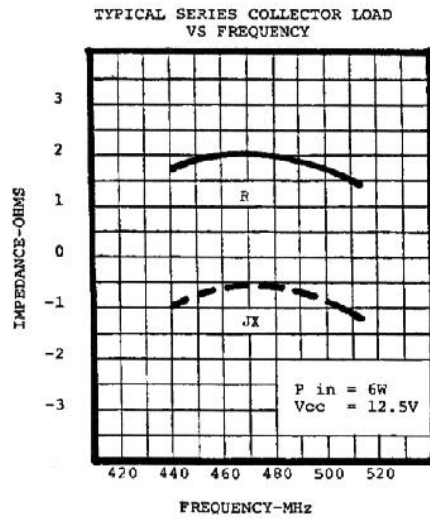


S88SD1422-06

IMPEDANCE DATA (typical)

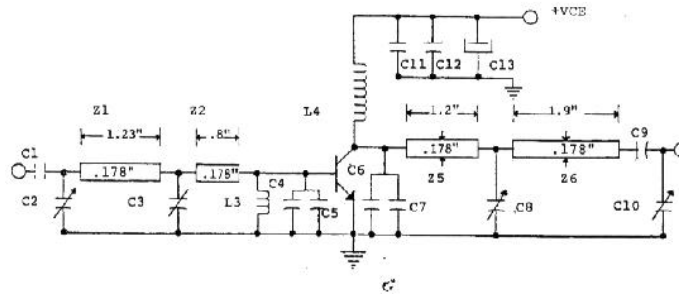
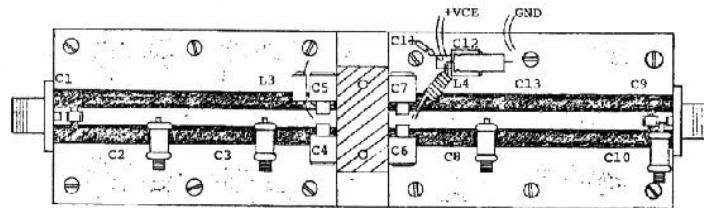


S88SD1422-07



S88SD1422-08

TEST CIRCUIT



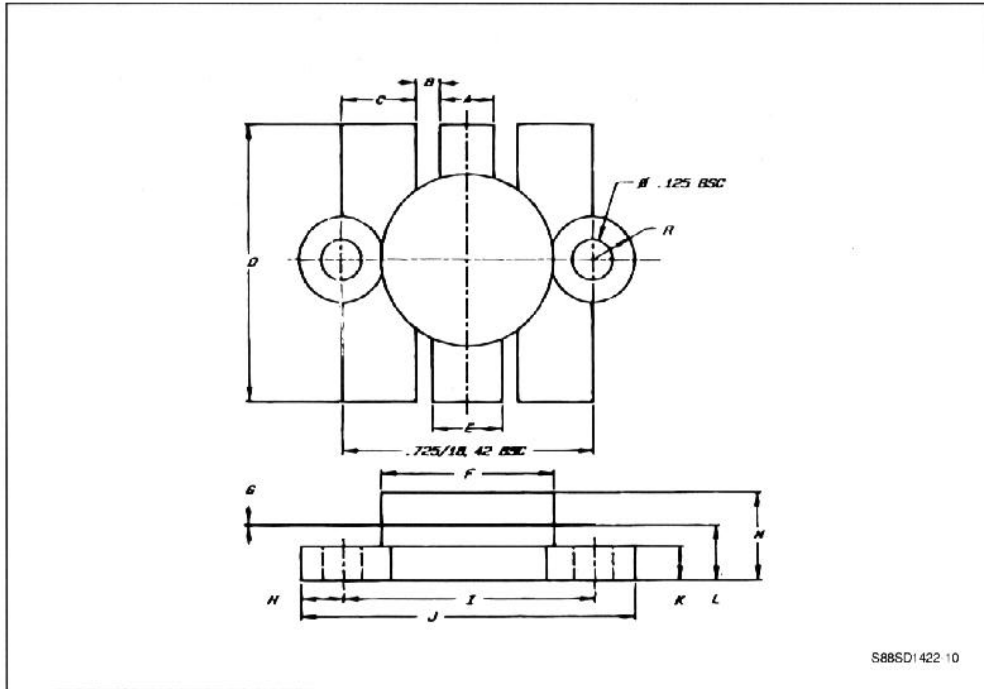
S88S1422-09

C1	ATC 100 Mils Chip Capacitor 75pF	C13	Electronic Capacitor 8.2 μ F @ 25VDC
C2, C3, C8,	Voltronics Air Variable 1-14pF	Z1	50 Ω Microstrip .178"x1.23"
C10		Z2	50 Ω Microstrip .178"x.8"
C4, C5	Unelco 27pF	L3	VK200 21/4B Ferracube 1 1/2 Turn
C6, C7	Unelco 38pF	L4	7 Turns /18AWG .2" I.D. with Wiring Spacing
C9	ATC 100 Mils Chip Capacitor 750pF	Z5	50 Ω Microstrip .178"x1.2"
C11	Eric Disk Capacitor .10 μ F @ 25VDC	Z6	50 Ω Microstrip .178"x1.9"
C12	Unelco 1000pF		BOARD MATERIAL 3M-K6098 1/16" Thick

SD1422

PACKAGE MECHANICAL DATA

.500 6LPL



	Minimum Inches/mm	Maximum Inches/mm
A	.150/3.43	.160/4.06
B	.045/1.14 BSC	
C	.210/5.33	.220/5.59
D	.835/21.21	.865/21.97
E	.200/5.08	.210/5.33
F	.490/12.45	.510/12.95
G	.002/0.05	.007/0.18

	Minimum Inches/mm	Maximum Inches/mm
H	.125/3.18 BSC	
I	.720/18.29	.730/18.54
J	.970/24.64	.980/24.89
K	.095/2.41	.105/2.67
L	.150/3.81	.170/4.32
M		.280/7.11