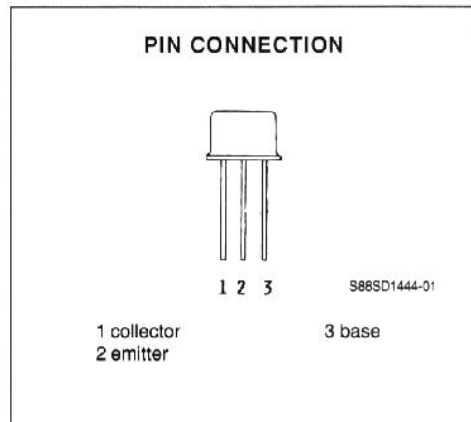
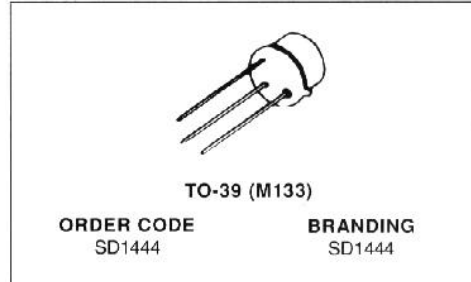


**RF & MICROWAVE TRANSISTORS
450-512MHz CLASS C MOBILE APPLICATIONS**

- CLASS C TRANSISTOR
- FREQUENCY 470MHz
- VOLTAGE 12.5V
- POWER OUT 2W
- POWER GAIN 8.0dB
- COMMON EMITTER



DESCRIPTION

The SD1444 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for UHF communications. This device is packaged in a grounded emitter TO-39 package for increased power gain and optimum heat dissipation.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector - Base Voltage	36.0	V
V _{CE0}	Collector - Emitter Voltage	16.0	V
V _{EB0}	Emitter - Base Voltage	4.0	V
I _C	Collector Current	.40	A
P _{tot}	Total Power Dissipation	5.0	W
T _{stg}	Storage Temperature	- 65 to + 200	°C
T _J	Junction Temperature	+ 200	°C

THERMAL DATA

R _{th(j-c)}	Junction-case Thermal Resistance	35.0	°C/W
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SD1444

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

STATIC

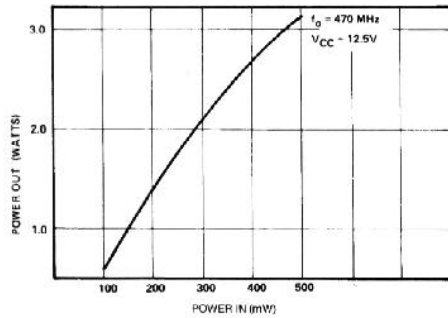
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 50mA$	$V_{BE} = 0$	36.0			V
BV_{CEO}	$I_C = 50mA$	$I_B = 0$	16.0			V
BV_{EBO}	$I_E = 1mA$	$I_C = 0$	4.0			V
I_{CBO}	$V_{CB} = 15.0V$	$I_E = 0$			1.0	mA
h_{FE}	$V_{CE} = 5.0V$	$I_C = 50mA$	20.0		200.0	

DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P_O	$f = 470MHz$	$V_{CE} = 12.5V$	2.0			W
G_P	$f = 470MHz$	$V_{CE} = 12.5V$	8.0			dB
C_{OB}	$f = 1MHz$	$V_{CB} = 12.5V$			15.0	pF

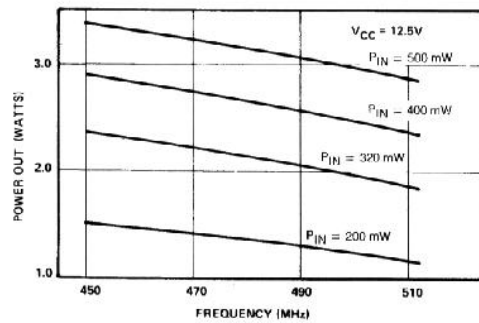
APPLICATION INFORMATION (typical curves)

POWER OUT VS. POWER IN



S88SD1444-02

POWER OUT VS. FREQUENCY

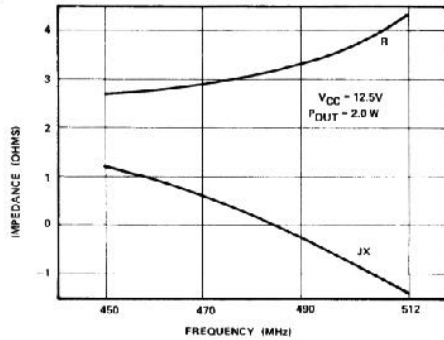


S88S1444-03

IMPEDANCE DATA (typical)

$$Z_s = 2.9 + j 0.6\Omega$$

$$Z_{CL} = 15.6 + j 10.2\Omega$$

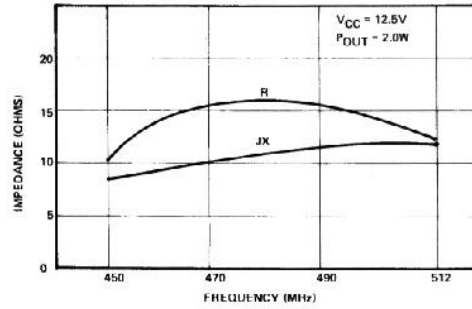
SOURCE IMPEDANCE VS. FREQUENCY

S88SD1444-04

$$F = 470\text{MHz}$$

$$V_{CE} = 12.5\text{V}$$

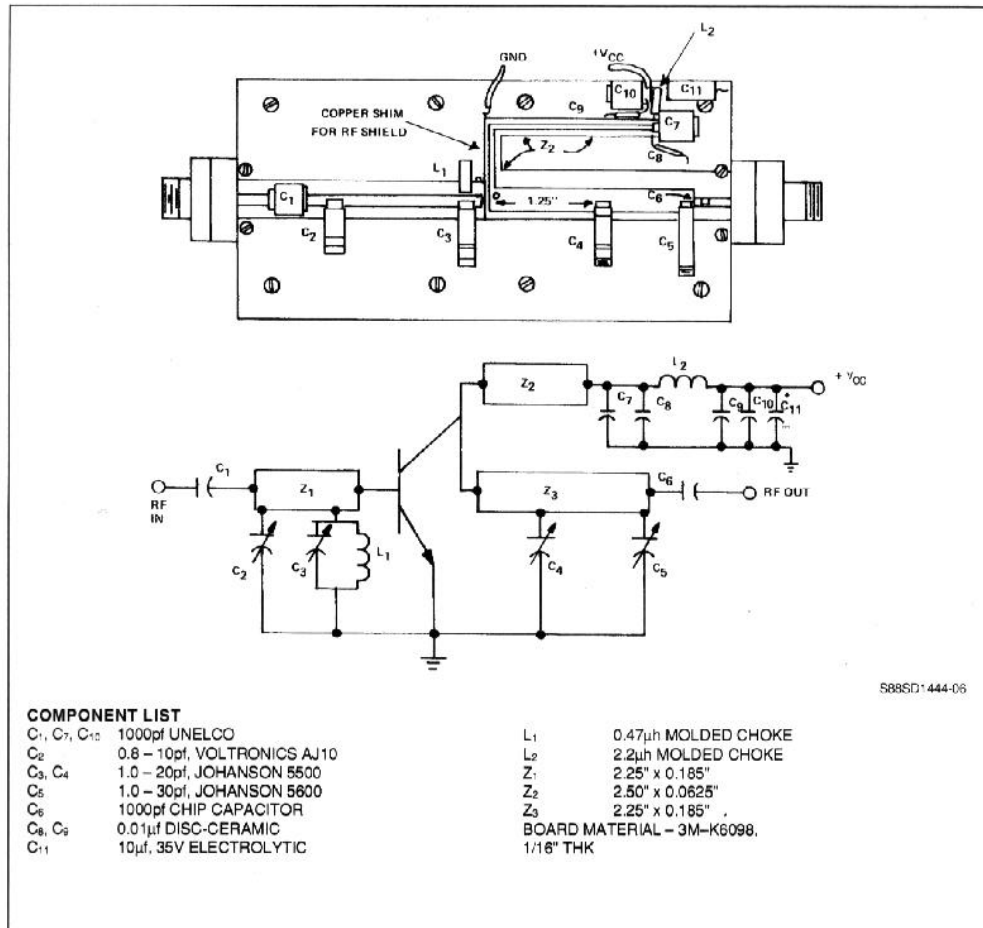
$$P_O = 2\text{W}$$

COLLECTOR LOAD IMPEDANCE VS. FREQUENCY

S88S1444-05

SD1444

TEST CIRCUIT

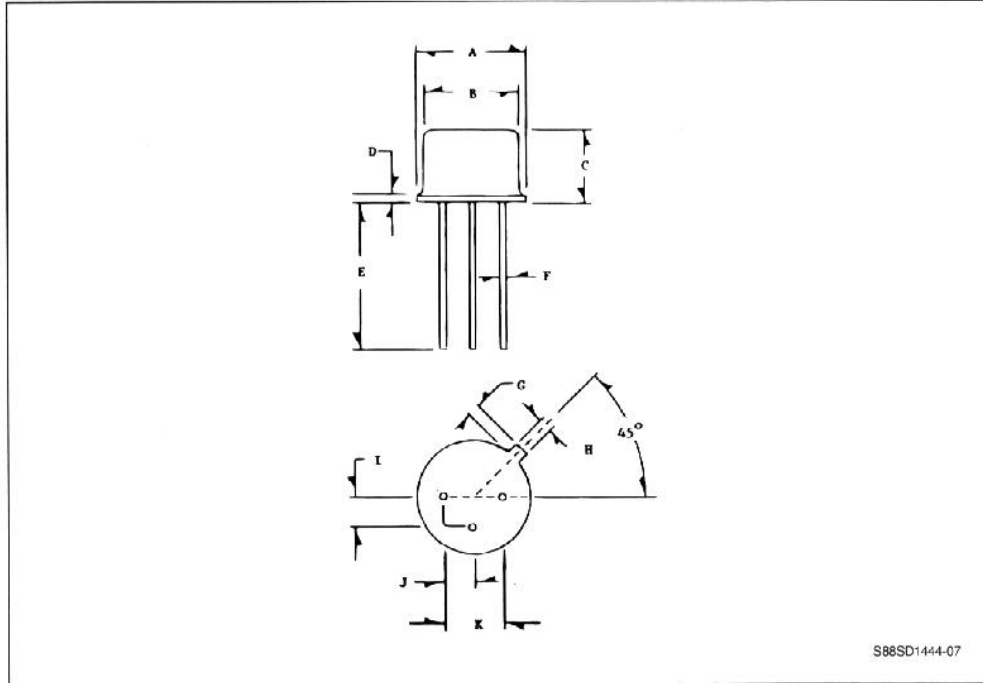


COMPONENT LIST

C ₁ , C ₇ , C ₁₀	1000pf UNELCO	L ₁	0.47μh MOLDED CHOKE
C ₂	0.8 - 10pf, VOLTRONICS AJ10	L ₂	2.2μh MOLDED CHOKE
C ₃ , C ₄	1.0 - 20pf, JOHANSON 5500	Z ₁	2.25" x 0.185"
C ₅	1.0 - 30pf, JOHANSON 5600	Z ₂	2.50" x 0.0625"
C ₆	1000pf CHIP CAPACITOR	Z ₃	2.25" x 0.185"
C ₈ , C ₉	0.01μf DISC-CERAMIC	BOARD MATERIAL - 3M-K6098, 1/16" THK	
C ₁₁	10μf, 35V ELECTROLYTIC		

PACKAGE MECHANICAL DATA

TO-39



	Minimum Inches	Maximum Inches
A	.350	.370
B	.315	.335
C	.240	.260
D	.015	.045
E	.500	
F	.016	.019

	Minimum Inches	Maximum Inches
G	.029	.040
H	.028	.034
I	.095	.105
J	.095	.105
K	.190	.210