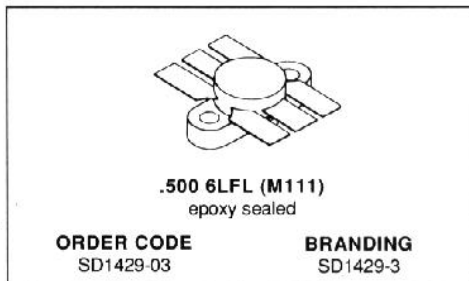


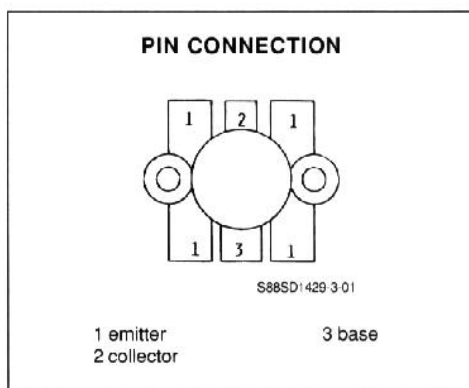
RF & MICROWAVE TRANSISTORS
450-512MHz CLASS C, MOBILE APPLICATIONS

- CLASS C TRANSISTOR
- FREQUENCY 470MHz
- VOLTAGE 12.5V
- POWER OUT 15.0W
- POWER GAIN 7.5dB
- COMMON EMITTER



DESCRIPTION

The type SD1429-3 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for UHF communications. It withstands infinite 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	V
I_C	Collector Current	3.4	A
P_{tot}	Total Power Dissipation	37.5	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	4.6	$^{\circ}C/W$
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SD1429-3

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

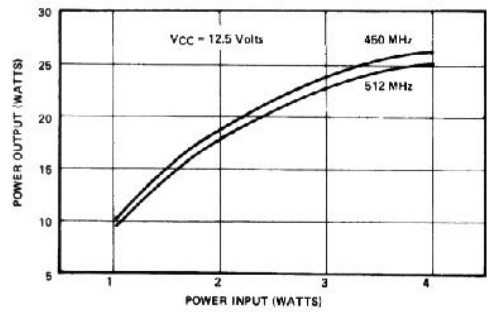
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 50\text{mA}$	$V_{BE} = 0$	36.0			V
BV_{CEO}	$I_E = 50\text{mA}$	$I_B = 0$	16.0			V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0$	4.0			V
I_{CES}	$V_{CE} = 15\text{V}$	$V_{BE} = 0$			5.0	mA
h_{FE}	$V_{CE} = 5.0\text{V}$	$I_C = 500\text{A}$	20.0			

DYNAMIC

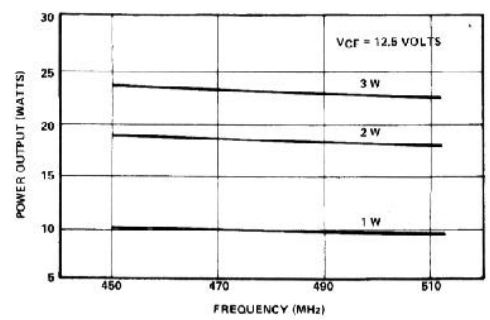
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P_O	$f = 470\text{MHz}$	$V_{CE} = 12.5\text{V}$	15.0			W
G_P	$f = 470\text{MHz}$	$V_{CE} = 12.5\text{V}$	7.5			dB
C_{Ob}	$f = 1\text{MHz}$	$V_{CB} = 12.0\text{V}$			50.0	pF

APPLICATION INFORMATION (typical curves)



POWER OUTPUT VS POWER INPUT

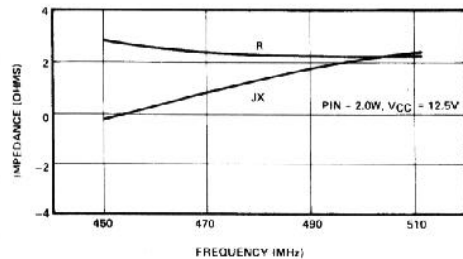
S88SD1429-3-02



POWER OUTPUT VS FREQUENCY

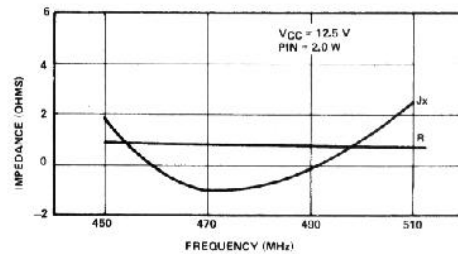
S88SD1429-3-03

IMPEDANCE INFORMATION



COLLECTOR LOAD IMPEDANCE VS FREQUENCY

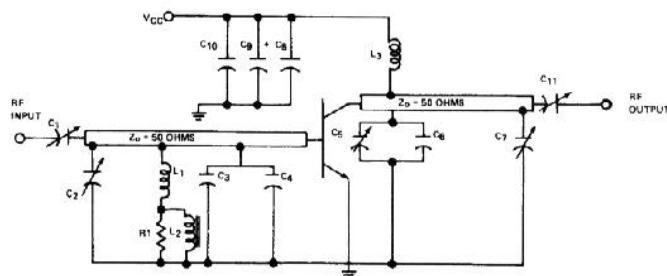
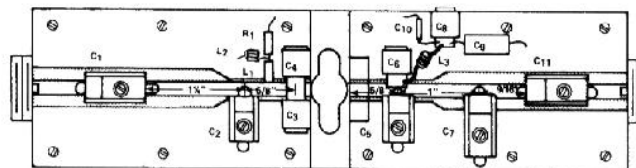
S88SD1429-3-04



SOURCE IMPEDANCE VS FREQUENCY

S88SD1429-3-05

TEST CIRCUIT



S88SD1429-3-06

COMPONENT LIST

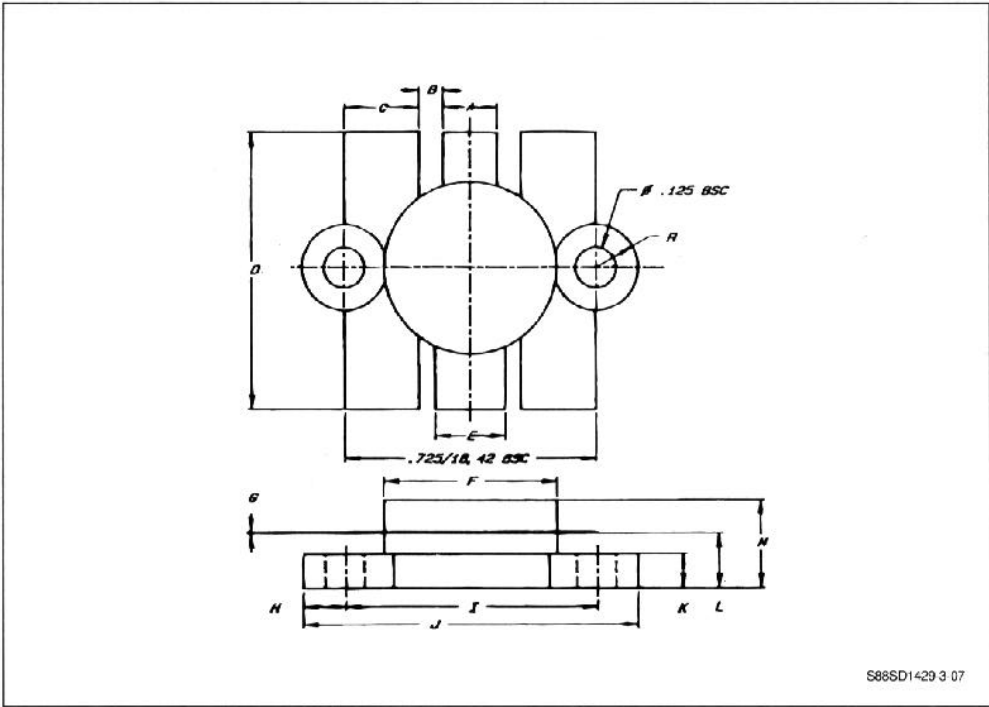
C1, C11 4-40pF, ARCO 422
 C2, 0.9-7pF, ARCO400
 C3, C4, 20pF, UNELCO
 C5, 1.5-20pF, ARCO
 C6, 15pF, UNELCO
 C7, 2-25pF, ARCO421
 C8, 1000pF, UNELCO
 C9, 10μF, ELECTROLYTIC, 35VDC

C10, 0.47μF, ERIE RED CAP
 L1, 0.10μH, MOLDED CHOKE
 L2, 6 TURNS #28 AWG THRU FERROCUBE SLEEVE #3B1
 L3, 6 TURNS, #20AWG, 0.20ID
 R1, 56Ω, 1/4 WATT
 Z0, 50Ω LINE
 BOARD MATERIAL - DOUBLE SIDED
 COPPER 1/16"THK, 3M-K-6098
 MOUNTED ON 3/8" BRASS PLATES

SD1429-3

PACKAGE MECHANICAL DATA

.500 6LFL



	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