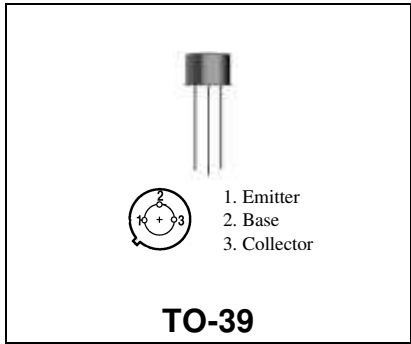


SD1444

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

Features

- 470 MHz
- 12.5 VOLTS
- P_{OUT} = 4.0 WATTS
- G_p = 12.0 dB MINIMUM
- 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 _{CBO}	Collector-Base Voltage	36.0	V
V _{CEO}	Collector-Emitter Voltage	16.0	V
V _{EBO}	Emitter – Base Voltage	4.0	V
I _C	Collector Current	0.40	A
P _{tot}	Total Power Dissipation	5.0	W
T _{STG}	Storage Temperature	-65 + 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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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 50 mA	V_{BE} = 0	36	---	---	V
BV_{CEO}	I_C = 50 mA	I_B = 0	16	---	---	V
BV_{EBO}	I_E = 1 mA	I_C = 0	4.0	---	---	V
I_{CBO}	V_{CB} = 15 V	I_E = 0	---	---	1.0	mA
H_{FE}	V_{CE} = 5 V	I_C = 50 mA	20	---	200	---

DYNAMIC

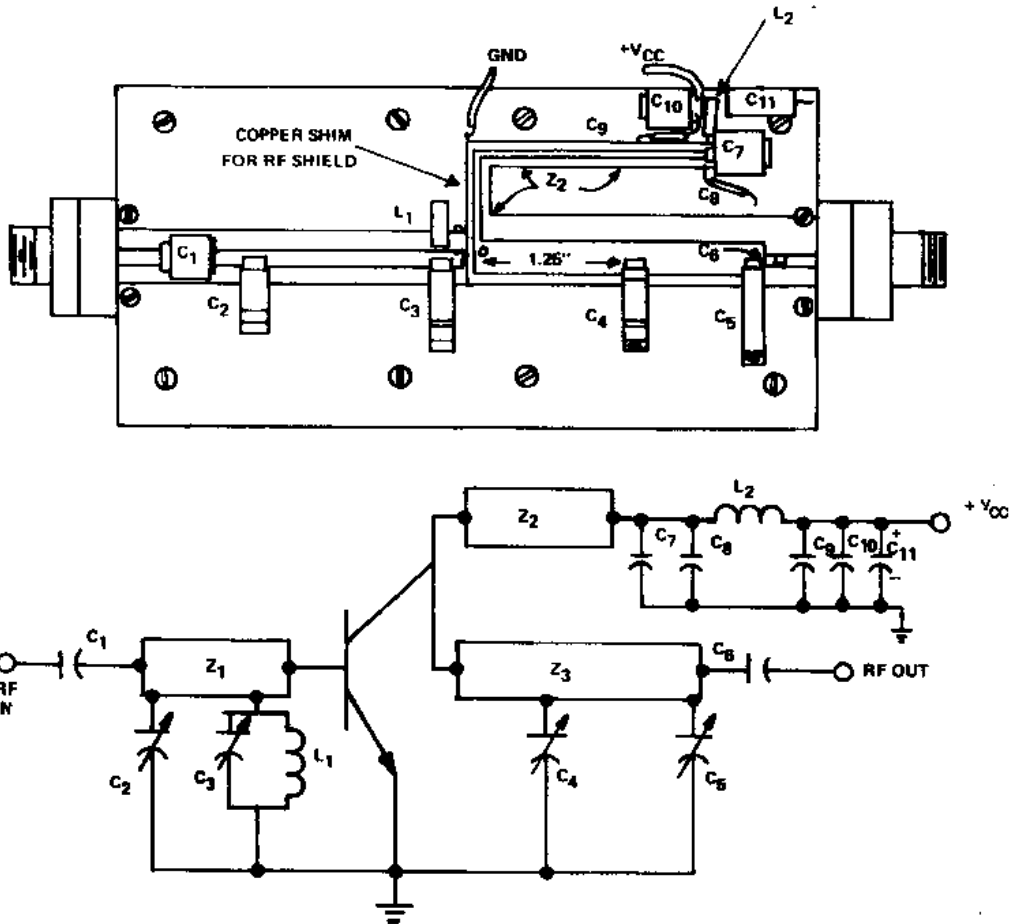
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz	V_{CE} = 12.5 V	2.0	---	---	W	
G_{PE}	f = 470 MHz	V_{CE} = 12.5 V	8.0	---	---	dB	
Cob	V_{CE} = 15.0 V	f = 1 MHz	I_E = 0	---	---	15.0	pf

IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
470 MHz	2.9 + j 0.6	15.6 – j 10.2

P_{OUT} = 2W
V_{CC} = 12.5V

TEST CIRCUIT



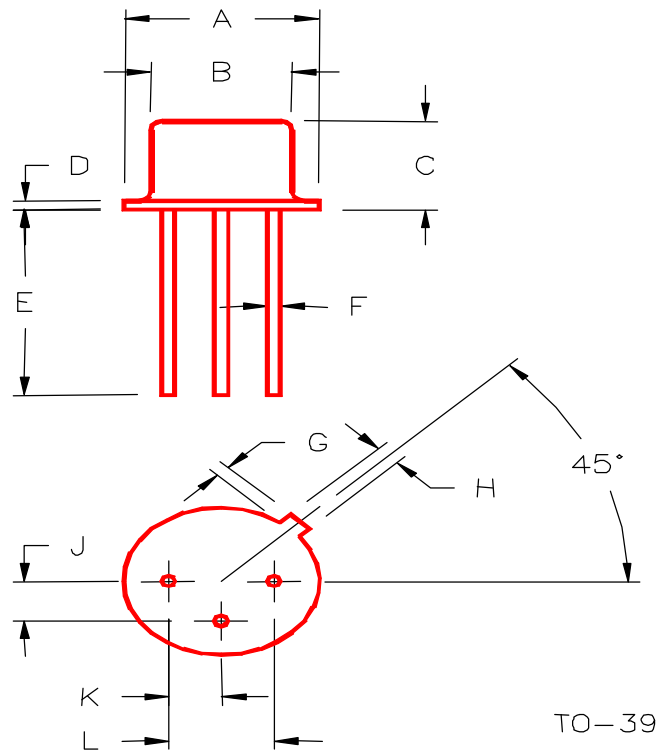
S68SD1444-06

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,
C ₁₁	10μf, 35V ELECTROLYTIC		1/16" THK

PACKAGE MECHANICAL DATA

PACKAGE STYLE M246



TO-39

	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.350/8,89	.370/9,40	J	.095/2,41	.105/2,67
B	.315/8,00	.335/8,51	K	.095/2,41	.105/2,67
C	.240/6,10	.260/6,60	L	.190/4,83	.210/5,33
D	.015/0,38	.045/1,14			
E	.500/12,70				
F	.016/0,41	.019/0,48			
G	.029/0,74	.040/1,02			
H	.028/0,71	.034/0,86			