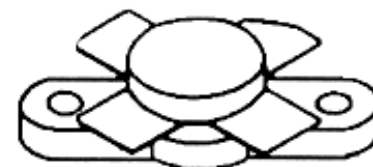


SD1018-06

RF AND MICROWAVE TRANSISTORS VHF AND FM MOBILE APPLICATIONS

Features

- FM CLASS C TRANSISTOR
- 175 MHz
- 12.5 Volts
- $P_{OUT} = 40 \text{ W MIN.}$
- $G_P = 4.5 \text{ dB GAIN}$
- EFFICIENCY 70%
- COMMON EMITTER

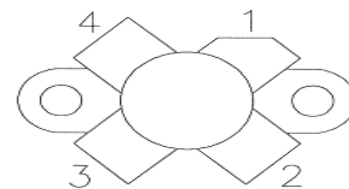


.380 4LFL (M113)
epoxy sealed

DESCRIPTION:

The SD1018-06 is an epitaxial silicon NPN planar transistor designed primarily for VHF mobile and marine transmitters. The device utilizes ballasted emitter resistors and improved metallization systems to achieve extreme ruggedness under severe operating conditions.

PIN CONNECTION



1. Collector 3. Base
2. Emitter 4. Emitter

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	36.0	V
V _{CEO}	Collector-Emitter Voltage	18.0	V
V _{ces}	Collector-Emitter Voltage	36.0	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Collector Current	6.0	A
P _{DISS}	Power Dissipation	80.0	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

R _{TH(j-c)}	Junction-Case Thermal Resistance	2.2	°C/W
----------------------	----------------------------------	-----	------

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 20 mA V_{BE} = 0 V	36			V
BV_{CEO}	I_C = 100 mA I_B = 0 mA	18			V
BV_{EBO}	I_E = 10 mA I_C = 0 mA	4.0			V
I_{CB0}	V_{CB} = 15 V I_E = 0 mA			2.5	mA
h_{FE}	V_{CE} = 5 V I_C = 1 A	5			

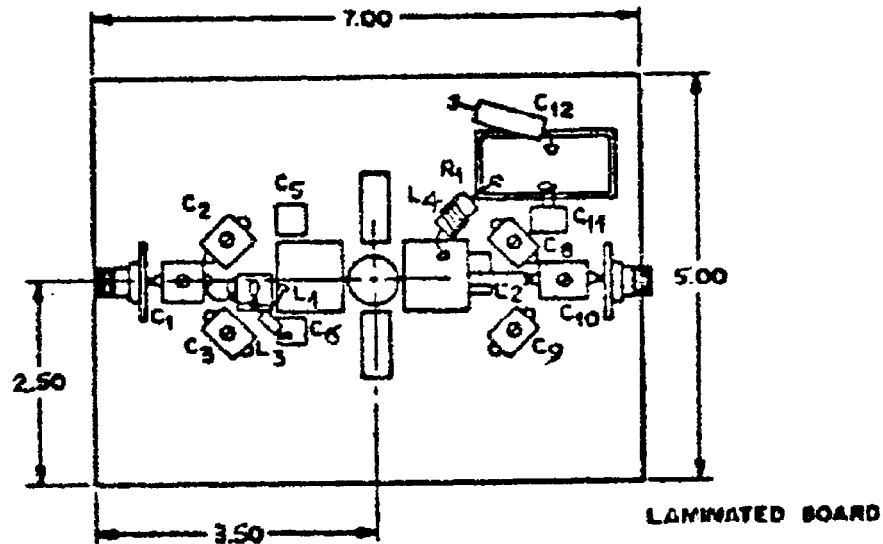
DYNAMIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz V_{CE} = 12.5 V	40			W
G_P	f = 175 MHz V_{CE} = 12.5 V	4.5			dB
η_C	f = 175 MHz V_{CE} = 12.5 V	70			%
C_{OB}	f = 1 MHz V_{CB} = 15 V I_E = 0			200	pF

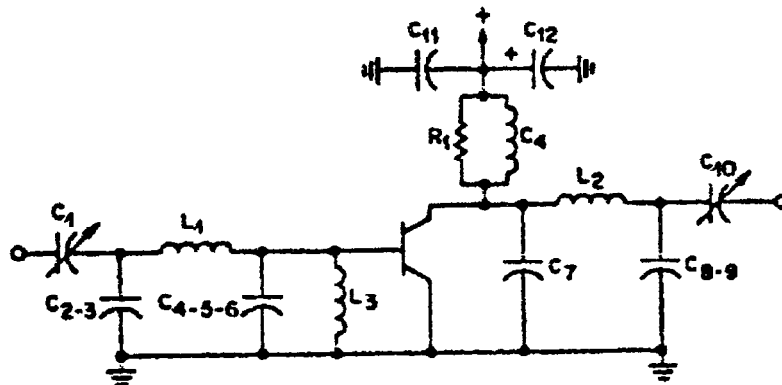
IMPEDANCE DATA

P_{IN} (W)	P_{OUT} (W)	Z_{IN} (Ω)	Z_{CL} (Ω)
4	21.7	0.8 – j 1.1	2.2 – j 0.3
8	37.1	0.8 – j 1.3	1.7 – j 0.5
12	46.5	0.8 – j 1.6	1.6 – j 0.3

F_o = 175 MHz
 V_{CC} = 12.5 V

TEST CIRCUIT


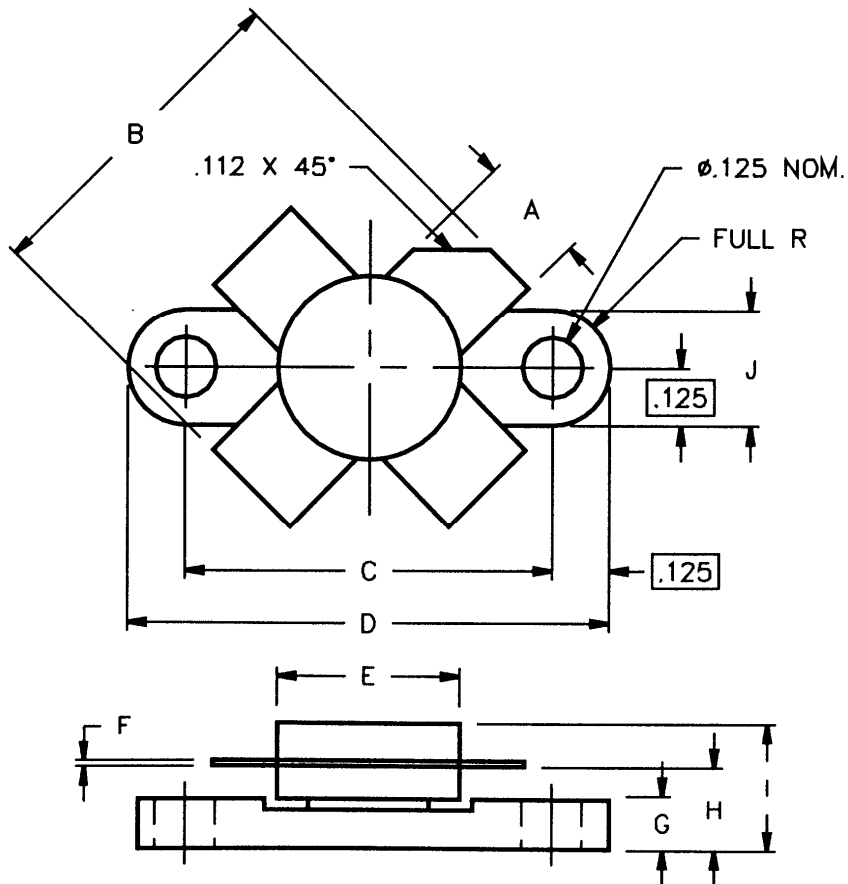
1. Material: Epoxy Glass Board with Copper Lands for Base and Collector Contacts
2. Clamp: DE-STA-CO No. 205S



C1	: ARCO 462	L1	: 1 1/2 Turns #14 AWG, 1/4" I.D. x 1/2" Long
C2,C3,C4	: ARCO 403	L2*	: 1/8" Wide Brass Strap x 1 1/2" Long
C4,C5,C6	: Unelco 100pF	L3	: Ferrite Bead 48
C7	: Unelco 200pF	L4	: 4 Turns, #16 AWG, 3/4" Long Wound on R1
C8,C9,C10	: ARCO 404	R1	: 510Ω
C11	: Unelco 500pF		
C12	: 33μF 15V		

L2*



PACKAGE MECHANICAL DATA


	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I		.260/7,11
B	.785/19,94		J	.240/6,10	.255/6,48
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			