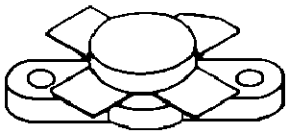
SGS-THOMSON MICROELECTRONICS

SD1224-02

RF & MICROWAVE TRANSISTORS VHF APPLICATIONS

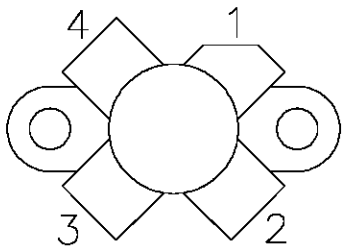
- 175 MHz
- 28 VOLTS
- EFFICIENCY 60%
- COMMON EMITTER
- GOLD METALLIZATION
- P_{OUT} = 40 W MIN. WITH 7.6 dB GAIN



.380 4LFL (M113)
epoxy sealed

ORDER CODE	BRANDING
SD1224-02	SD1224-2

PIN CONNECTION



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

DESCRIPTION

The SD1224-02 is an epitaxial silicon NPN planar transistor designed primarily for 12.5 V AM Class C RF amplifiers functional in the aviation band 118 - 136 MHz and for 28 V FM Class C RF amplifiers utilized in ground station transmitters. It withstands extremely high VSWR under operating conditions.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CEO}	Collector-Emitter Voltage	35	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	5.0	A
P_{DISS}	Power Dissipation	60	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	2.9	°C/W

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

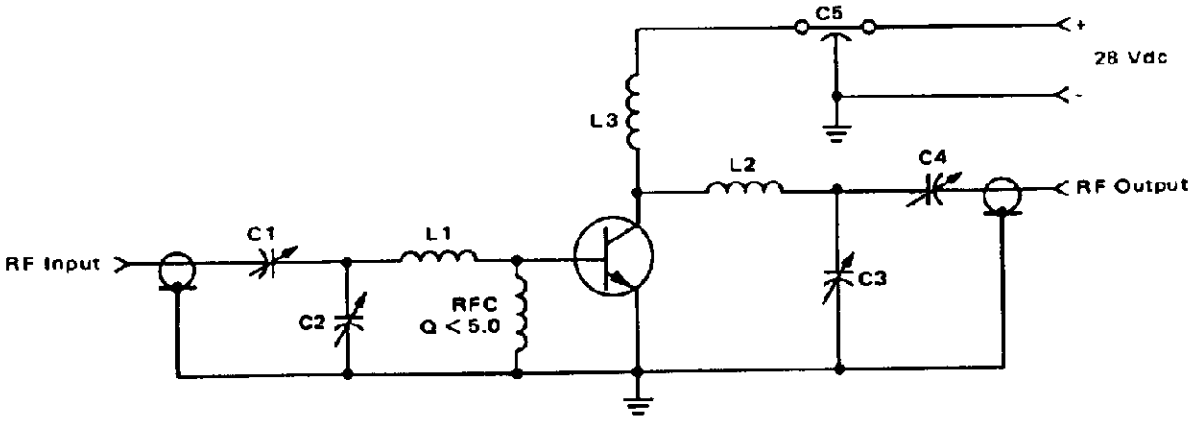
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10 mA	V_{BE} = 0 V	65	—	—	V
BV_{CES}	I_C = 200 mA	V_{BE} = 0 V	65	—	—	V
BV_{CEO}	I_C = 200 mA	I_B = 0 mA	35	—	—	V
BV_{EBO}	I_E = 10 mA	I_C = 0 mA	4.0	—	—	V
I_{CBO}	V_{CB} = 30 V	I_E = 0 mA	—	—	1	mA
h_{FE}	V_{CE} = 5 V	I_C = 500 mA	5	—	—	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz	P_{IN} = 7 W	V_{CC} = 28 V	40	—	—	W
η_c	f = 175 MHz	P_{OUT} = 40 W	V_{CC} = 28 V	60	—	—	%
P_G	f = 175 MHz	P_{IN} = 7 W	V_{CC} = 28 V	7.6	—	—	dB
C_{OB}	f = 1 MHz	V_{CB} = 30 V		—	—	65	pF

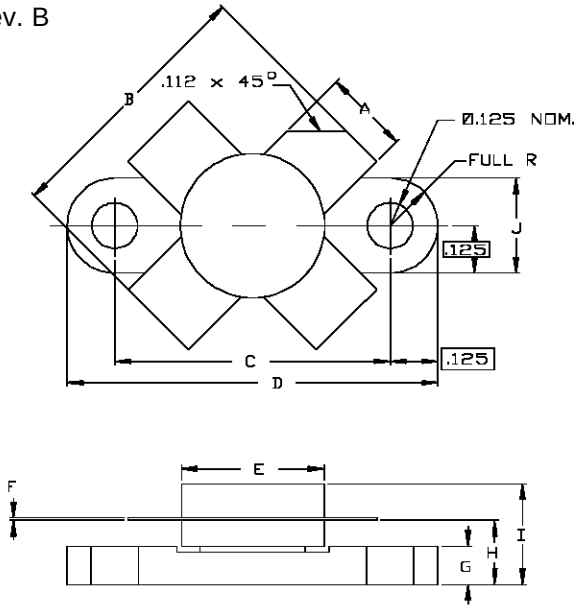
TEST CIRCUIT



C1,C2, C3,C4 : ARCO 464, 25-280pF
C5 : 0.1µF
L1 : 1" Straight #16 AWG
L2 : 1 Turn, #16 AWG, 1/4" I.D.
L3 : 0.22µH

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0113 rev. B



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.785/19,94	
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
I		.280/7,11
J	.240/6,10	.255/6,48