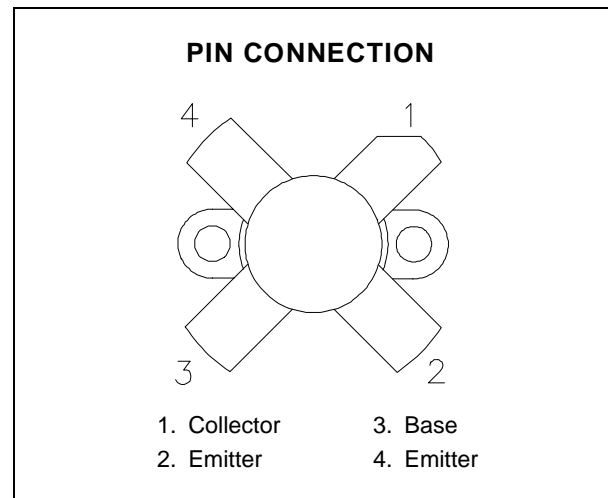
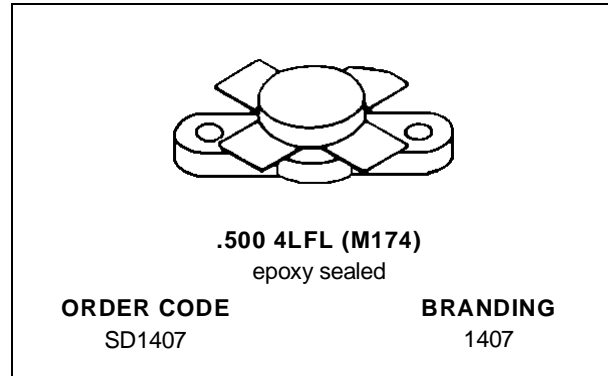


**RF & MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**

- 30 MHz
- 28 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 125 W MIN. WITH 15 dB GAIN


**DESCRIPTION**

The SD1407 is a 28 V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes state-of-the-art diffused emitter ballasting for improved ruggedness and reliability.

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	36	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	20	A
P <sub>DISS</sub>	Power Dissipation	270	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.65	°C/W
----------------------	----------------------------------	------	------

# SD1407

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 100mA	I <sub>E</sub> = 0mA	65	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 100mA	V <sub>BE</sub> = 0V	65	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 100mA	I <sub>B</sub> = 0mA	35	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10mA	I <sub>C</sub> = 0mA	4.0	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 30V	I <sub>E</sub> = 0mA	—	—	15	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 5A	10	—	200	—

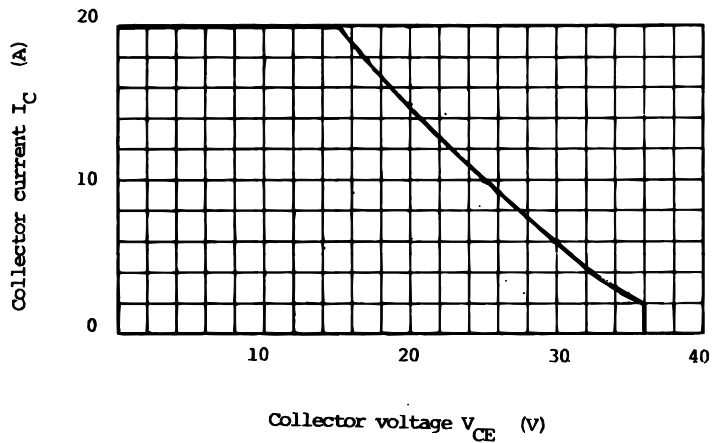
### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 30 MHz	P <sub>IN</sub> = 3.95 W	V <sub>CE</sub> = 28 V	125	—	—	W
G <sub>P</sub>	f = 30 MHz	P <sub>IN</sub> = 3.95 W	V <sub>CE</sub> = 28 V	15	16	—	dB
IMD*	f = 30 MHz	V <sub>CE</sub> = 28 V	I <sub>CQ</sub> = 100 mA	—	-34	-30	dB
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 30 V		—	250	—	pF

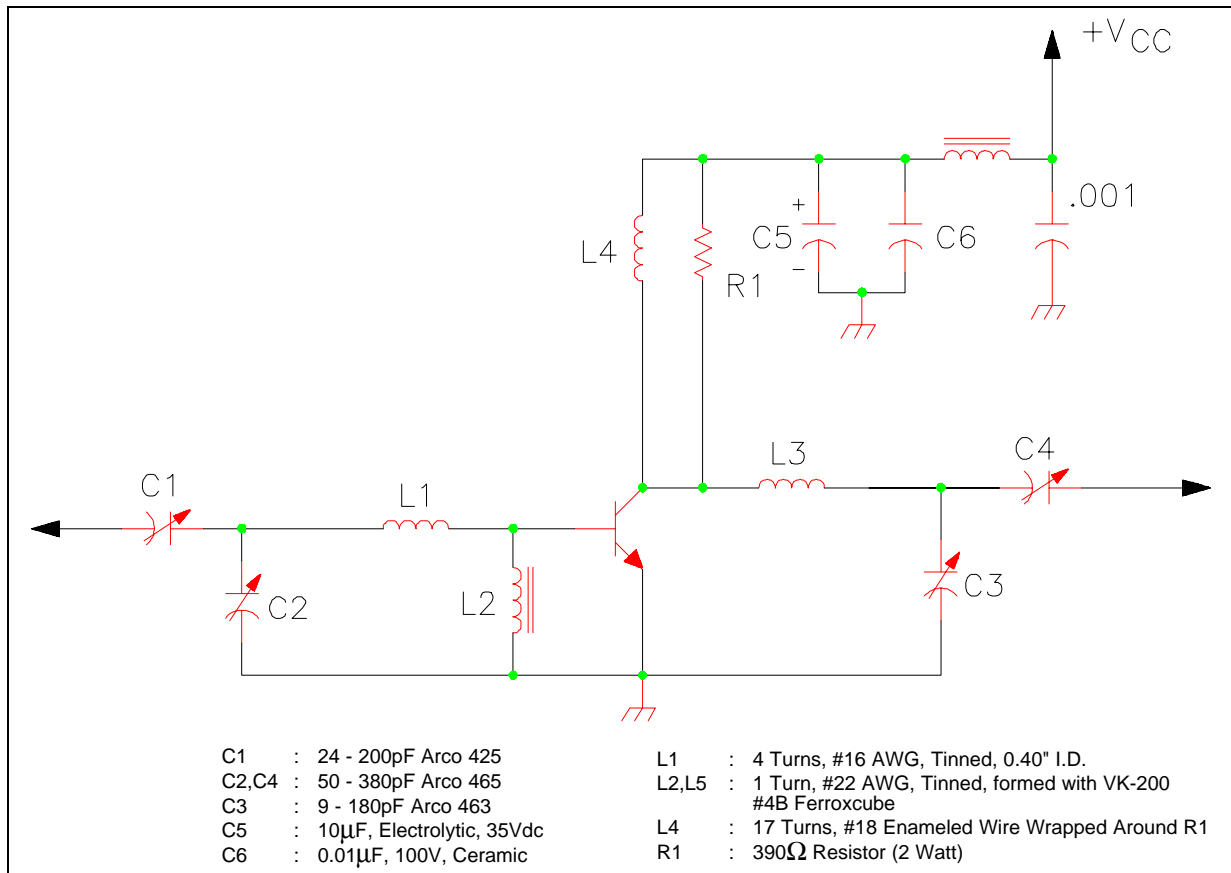
Note: \*P<sub>OUT</sub> = 100W PEP, f<sub>0</sub> = 30 + 30.001 MHz

### TYPICAL PERFORMANCE

#### SAFE OPERATING AREA

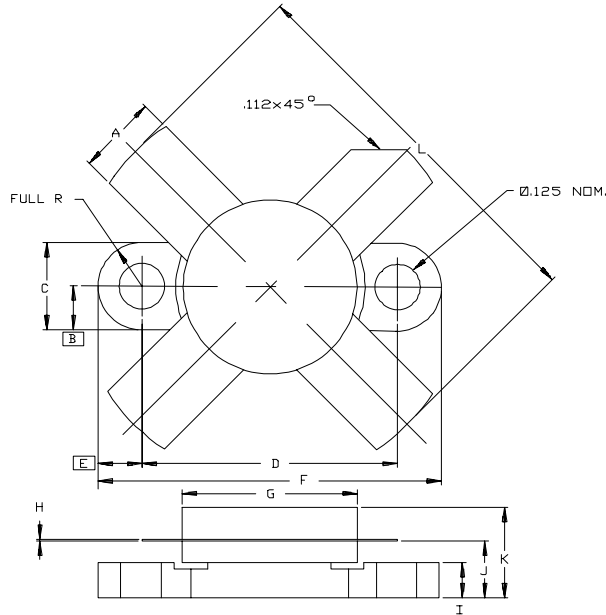


## TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



SGS-THOMSON MICROELECTRONICS		CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		
A	.220/5,59	.230/5,84	K	.280/7,11
B	.125/3,18		L	1.050/26,67
C	.245/6,22	.255/6,48		
D	.720/18,28	.730/18,54		
E	.125/3,18			
F	.970/24,64	.980/24,89		
G	.495/12,57	.505/12,83		
H	.003/0,08	.007/0,18		
I	.090/2,29	.110/2,79		
J	.160/4,06	.175/4,45		

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES  
 Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -  
 Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A