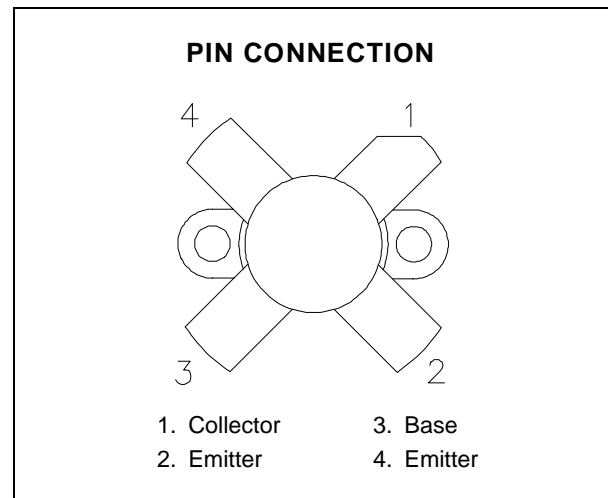
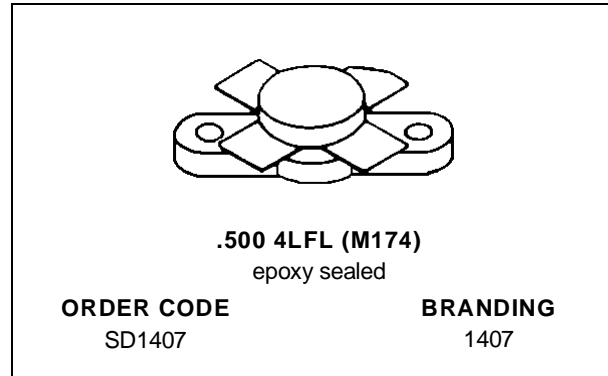


**RF & MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**

- 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
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# SD1407

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

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CB0</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	—

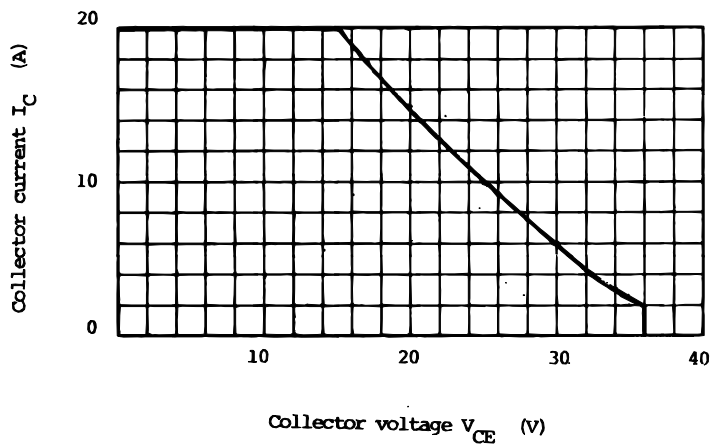
### DYNAMIC

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

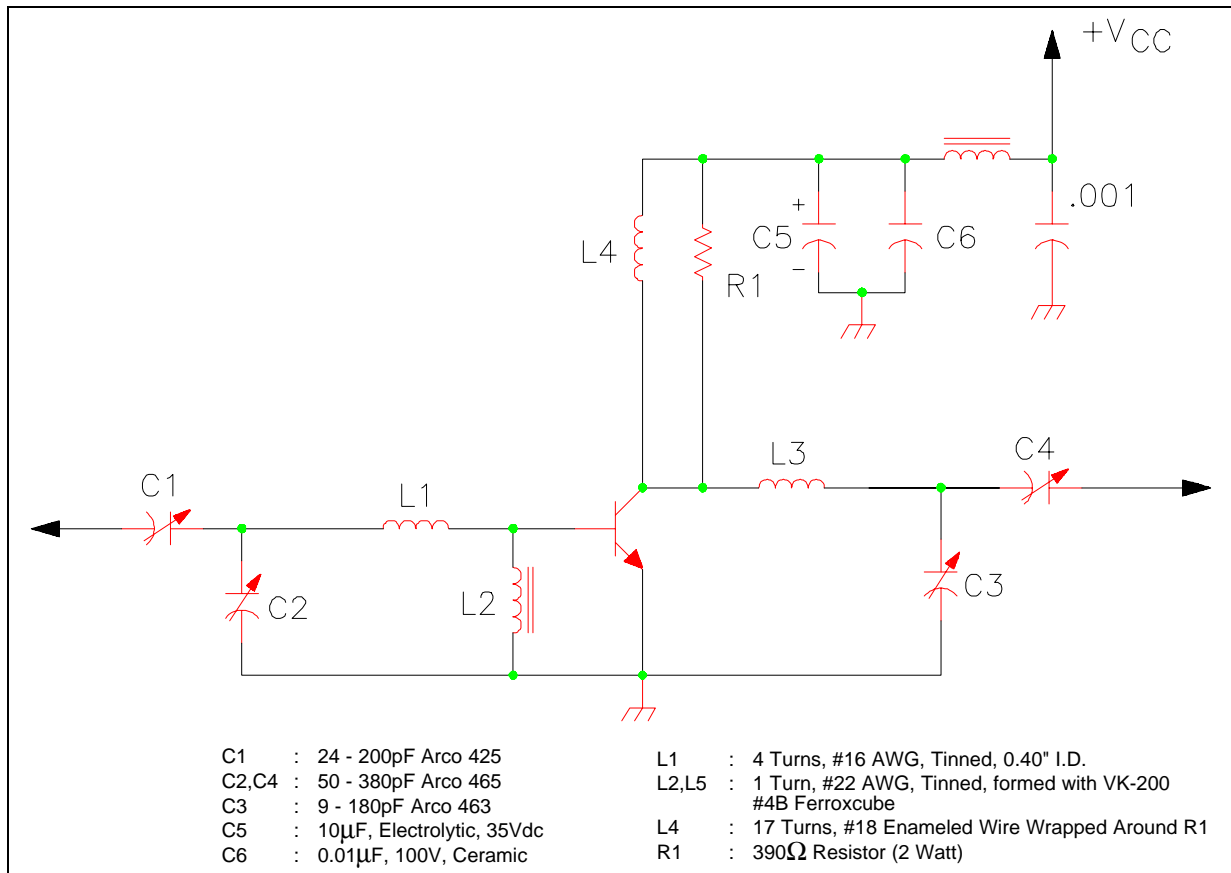
Note: \*P<sub>OUT</sub> = 100W PEP, f<sub>0</sub> = 30 + 30.001 MHz

### TYPICAL PERFORMANCE

#### SAFE OPERATING AREA

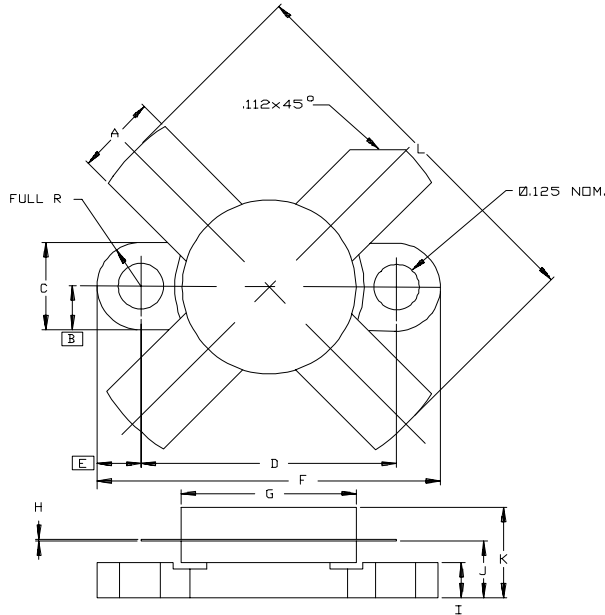


## TEST CIRCUIT



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
B	.125/3,18		L
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	

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