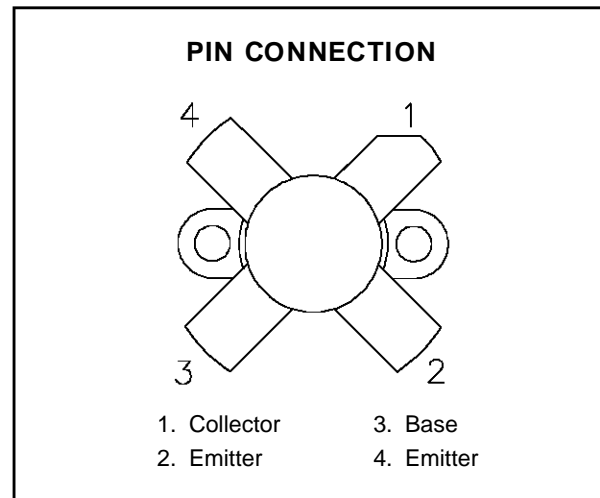
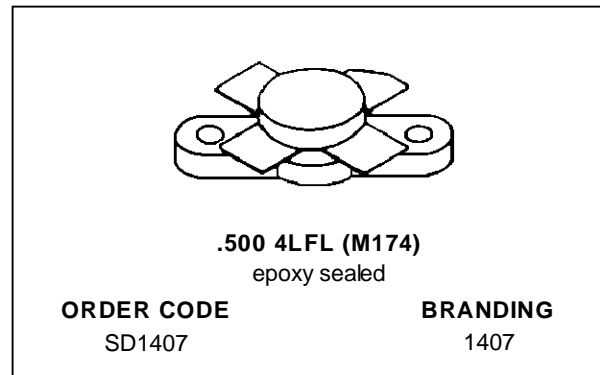


**RF & MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**

- 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>CB0</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 ( $T_{\text{case}} = 25^{\circ}\text{C}$ )

#### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 100\text{mA}$	$I_{\text{E}} = 0\text{mA}$	65	—	—	V
$BV_{\text{CES}}$	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0\text{V}$	65	—	—	V
$BV_{\text{CEO}}$	$I_{\text{C}} = 100\text{mA}$	$I_{\text{B}} = 0\text{mA}$	35	—	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
$I_{\text{CES}}$	$V_{\text{CE}} = 30\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	15	mA
$h_{\text{FE}}$	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 5\text{A}$	10	—	200	—

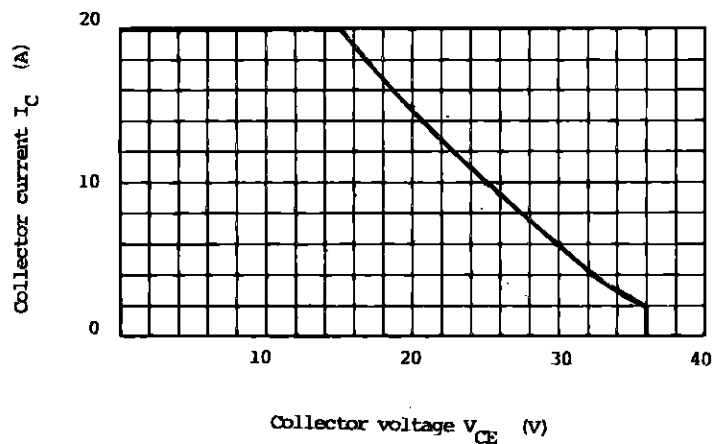
#### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{\text{OUT}}$	$f = 30\text{ MHz}$	$P_{\text{IN}} = 3.95\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	125	—	—	W
$G_{\text{P}}$	$f = 30\text{ MHz}$	$P_{\text{IN}} = 3.95\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	15	16	—	dB
IMD*	$f = 30\text{ MHz}$	$V_{\text{CE}} = 28\text{ V}$	$I_{\text{CQ}} = 100\text{ mA}$	—	-34	-30	dB
$C_{\text{OB}}$	$f = 1\text{ MHz}$	$V_{\text{CB}} = 30\text{ V}$		—	250	—	pF

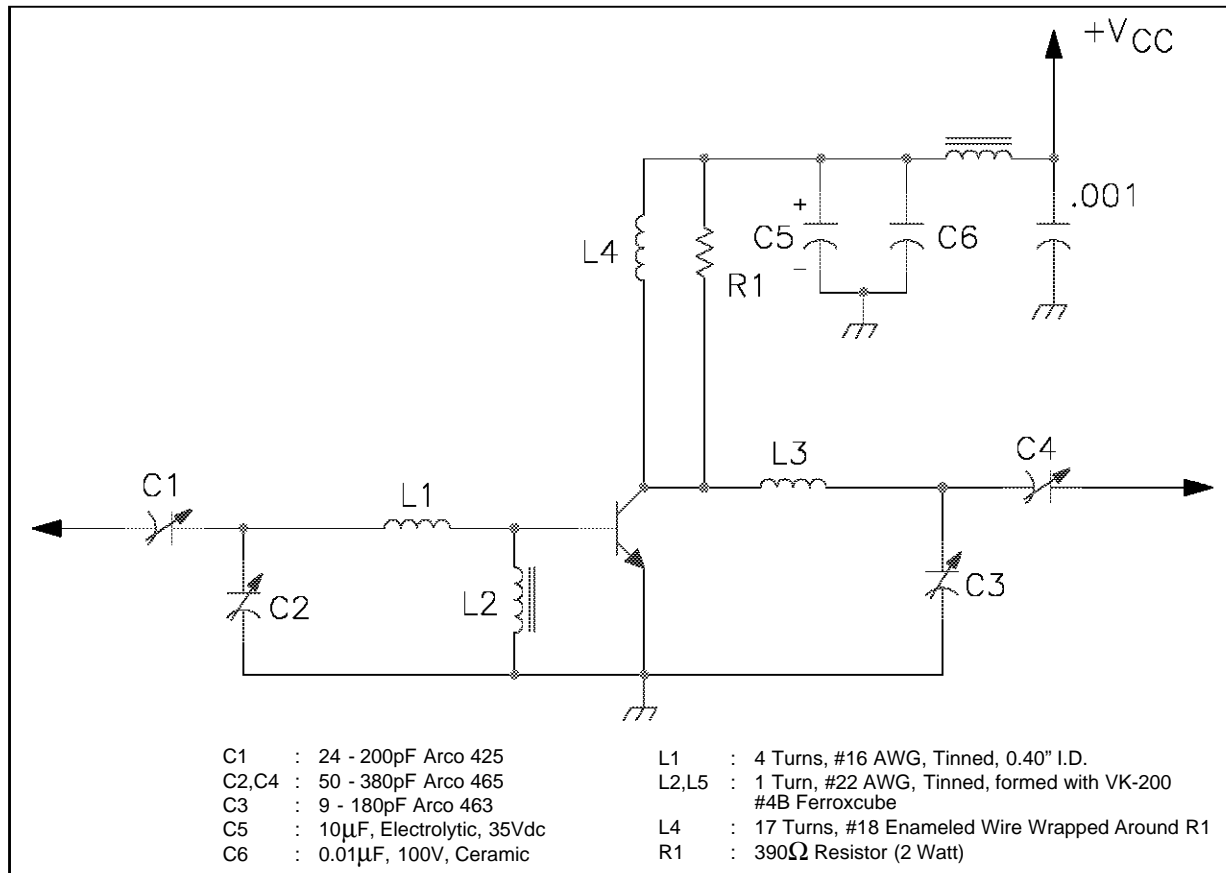
Note: \* $P_{\text{OUT}} = 100\text{W PEP}$ ,  $f_0 = 30 + 30.001\text{ MHz}$

#### TYPICAL PERFORMANCE

##### SAFE OPERATING AREA

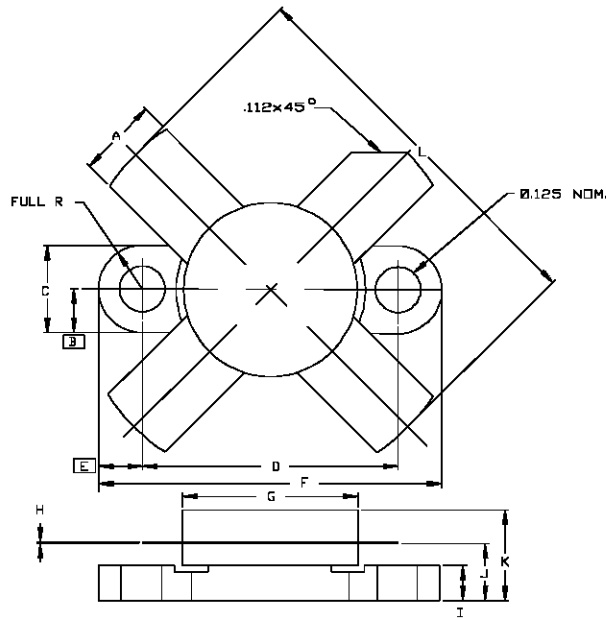


## TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		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			

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