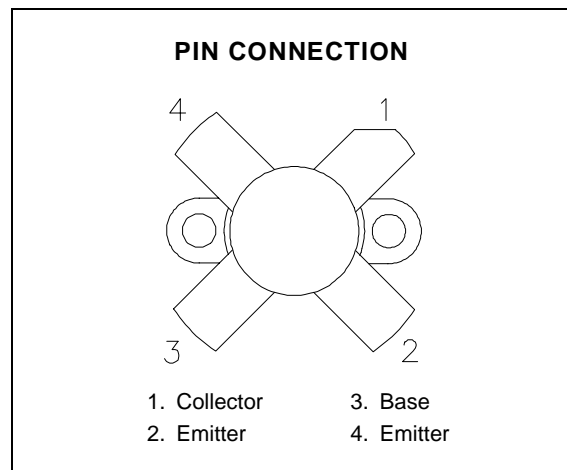
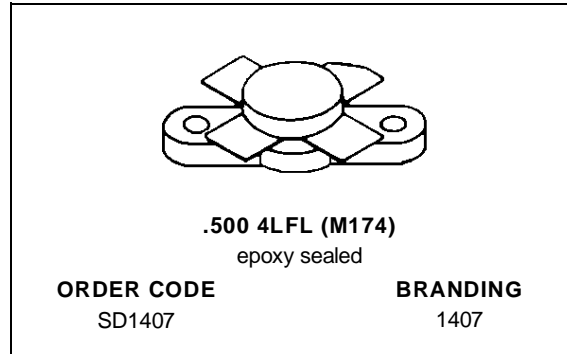


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 30 MHz
- 28 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- P_{OUT} = 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_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	65	V
V _{CEO}	Collector-Emitter Voltage	36	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Device Current	20	A
P _{DISS}	Power Dissipation	270	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	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_{CBO}	$I_{\text{C}} = 100\text{mA}$	$I_{\text{E}} = 0\text{mA}$	65	—	—	V
BV_{CES}	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0\text{V}$	65	—	—	V
BV_{CEO}	$I_{\text{C}} = 100\text{mA}$	$I_{\text{B}} = 0\text{mA}$	35	—	—	V
BV_{EBO}	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CES}	$V_{\text{CE}} = 30\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	15	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 5\text{A}$	10	—	200	—

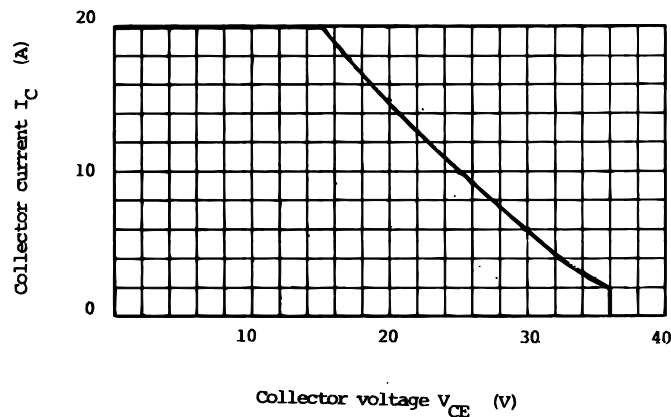
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$	$P_{\text{IN}} = 3.95\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	125	—	—	W
G_{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_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 30\text{ V}$		—	250	—	pF

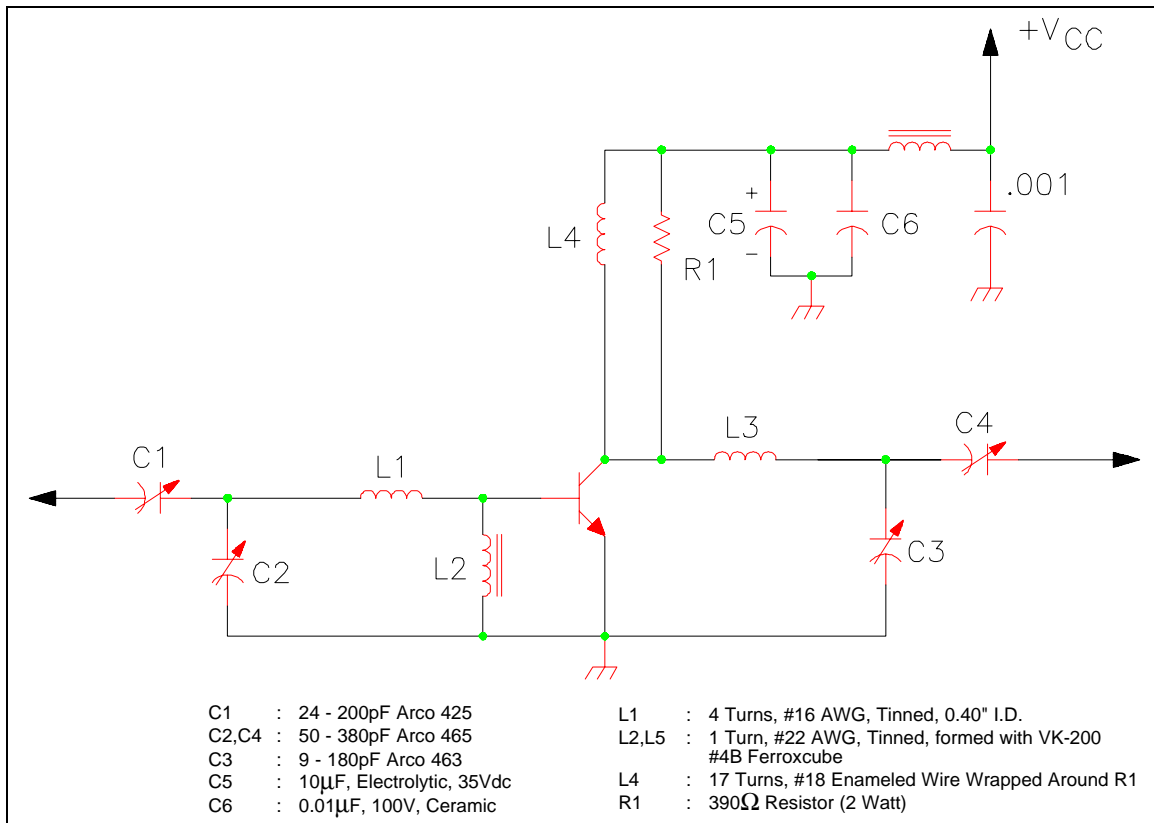
Note: * $P_{\text{OUT}} = 100\text{W PEP}$, $f_{\text{O}} = 30 + 30.001\text{ MHz}$

TYPICAL PERFORMANCE

SAFE OPERATING AREA

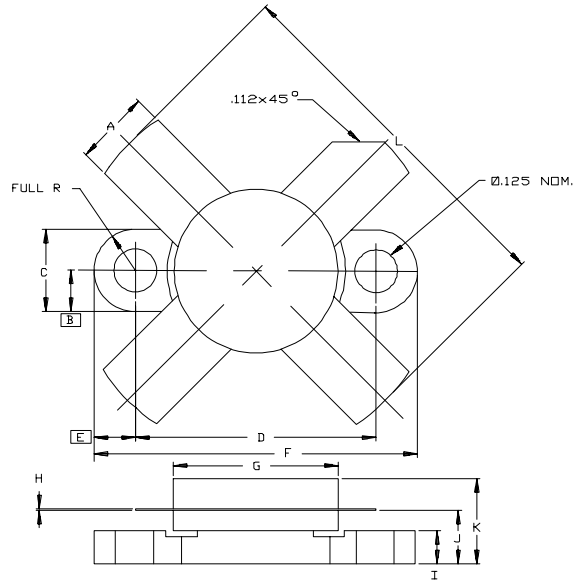


TEST CIRCUIT



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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