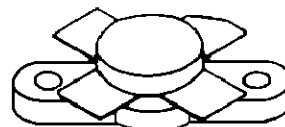


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 30 MHz
- 28 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 125\text{ W MIN. WITH } 15\text{ dB GAIN}$



.500 4LFL (M174)
epoxy sealed

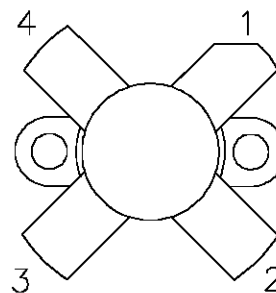
ORDER CODE
SD1407

BRANDING
1407

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.

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

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	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.65	$^{\circ}\text{C/W}$
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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}	$I_C = 100\text{mA}$	$I_E = 0\text{mA}$	65	—	—	V
BV_{CES}	$I_C = 100\text{mA}$	$V_{BE} = 0\text{V}$	65	—	—	V
BV_{CEO}	$I_C = 100\text{mA}$	$I_B = 0\text{mA}$	35	—	—	V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0\text{mA}$	4.0	—	—	V
I_{CES}	$V_{CE} = 30\text{V}$	$I_E = 0\text{mA}$	—	—	15	mA
h_{FE}	$V_{CE} = 5\text{V}$	$I_C = 5\text{A}$	10	—	200	—

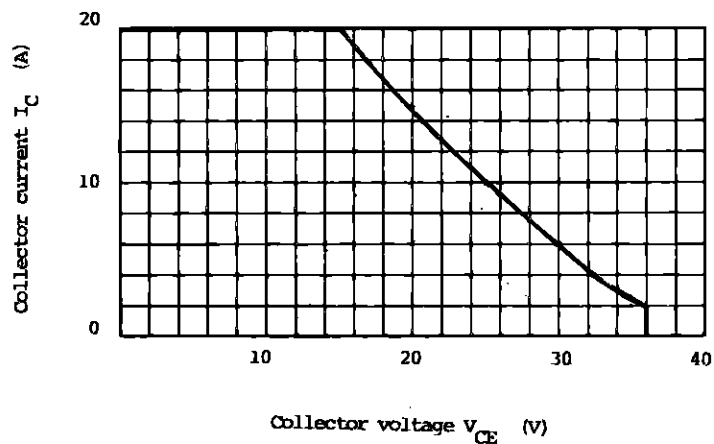
DYNAMIC

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

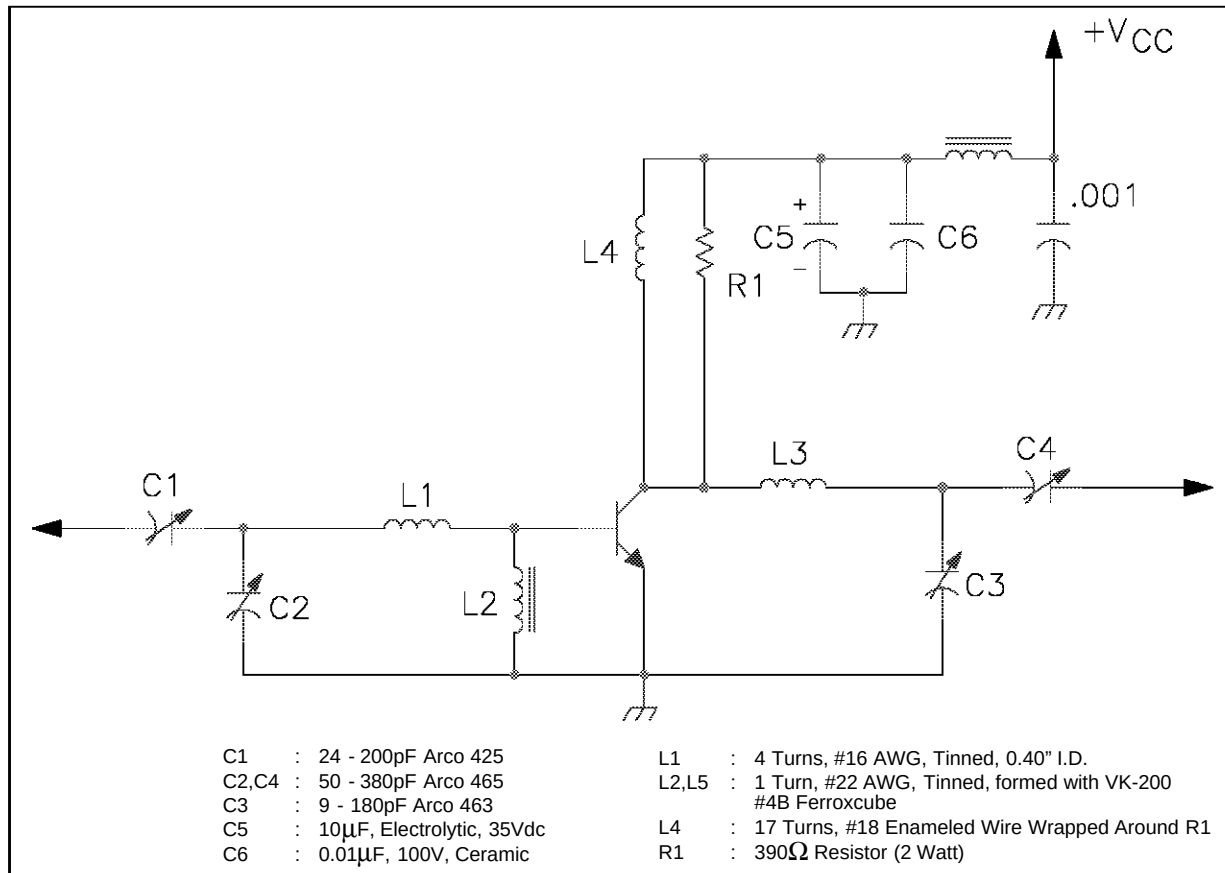
Note: * $P_{OUT} = 100\text{W PEP}$, $f_0 = 30 + 30.001\text{ MHz}$

TYPICAL PERFORMANCE

SAFE OPERATING AREA

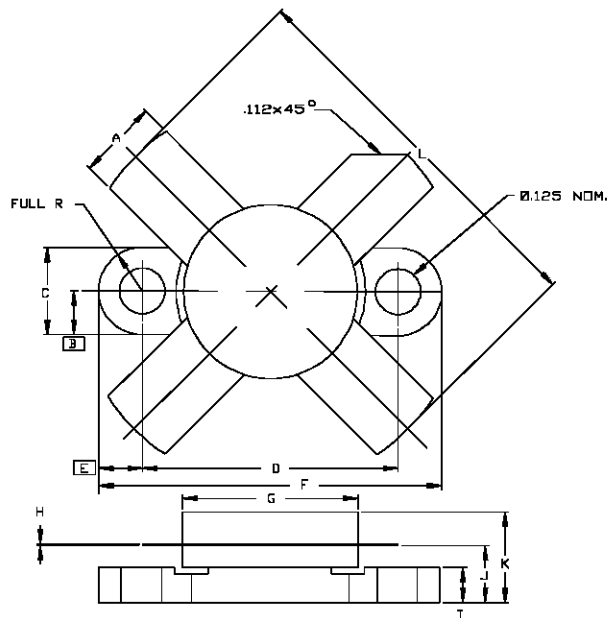


TEST CIRCUIT



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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