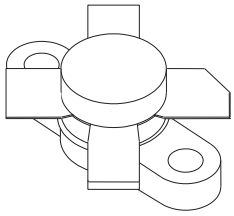
SD1407R
125W, 28V, 30MHz RF Power Transistor

Introduction

The SD1407 is a gold metalized, planar epitaxial N-P-N Silcon RF transistor. The device is ideal for SSB high power communications transmitters.



.500 4 lead flange

Figure 1. Available Packages

Table 1. Thermal Characteristics

Parameter	Sym	Value	Unit
Thermal Resistance, Junction to Case FLANGED	R_{th}	0.65	C/W

Table 2. Absolute Maximum Ratings *

Parameter	Sym	Value	Unit
Collector-Emitter Voltage	BV_{CEO}	36	Vdc
Emitter-Base Voltage	BV_{EBO}	3	Vdc
Collector-Base Voltage	BV_{CBO}	65	Vdc
Collector Current Peak	I_C	20	Adc
Total Dissipation at T_C = 25 C	P_D	270	W
Operating Junction Temperature	T_J	200	C
Storage Temperature Range	T_{STG}	- 65, +150	C

* Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Caution: Device contains Beryllium Oxide

Features

- RoHS Compliant
- Gold Metalized
- Characterized at 30MHz
- 15dB Gain @ 30MHz
- 125 Watts RF Pout

Electrical Charateristics

Recommended operating conditions apply unless otherwise specified: T_C = 25 C .

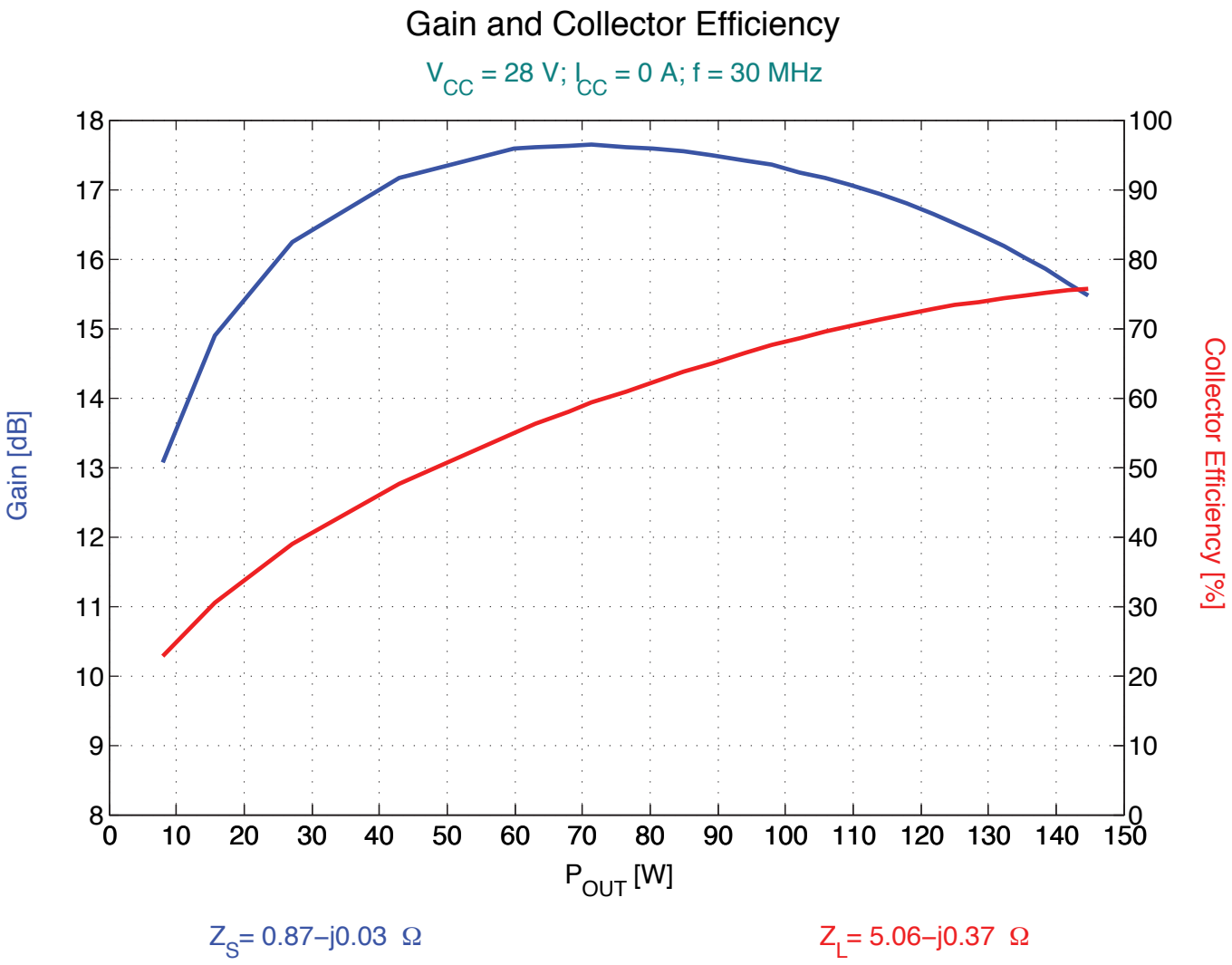
Table 3. DC Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage (IC=100mA, IE=0mA)	BVCBO	65	---	---	V
Collector-Emitter Breakdwon Voltage (IC=100mA, IB=0mA)	BVCES	65	---	---	V
Collector-Emitter Breakdwon Voltage (IC=100mA, IB=0mA)	BVCEO	35	---	---	V
Emitter-Base Breakdown Voltage (IE=50mA, IC=0mA)	BVEBO	3	---	---	V
Collector Cut-off Current (VCE=30mA, IE=0mA)	ICES	---	---	15	mA
DC Current Gain (VCE=5V, IC=5A)	HFE	10	---	200	---

Table 4. Dynamic

Parameter	Symbol	Min	Typ	Max	Unit
f=30MHz, Pin=3.95W, VCE=28V	Pout	125			W
f=30MHz, Pin=3.95W, VCE=28V	Gp	15	16		dB
f=30MHz, ICQ=100mA, VCE=28V	IMD		-34	-30	dB
f=1MHz, VCB=28V	COB		250		pF

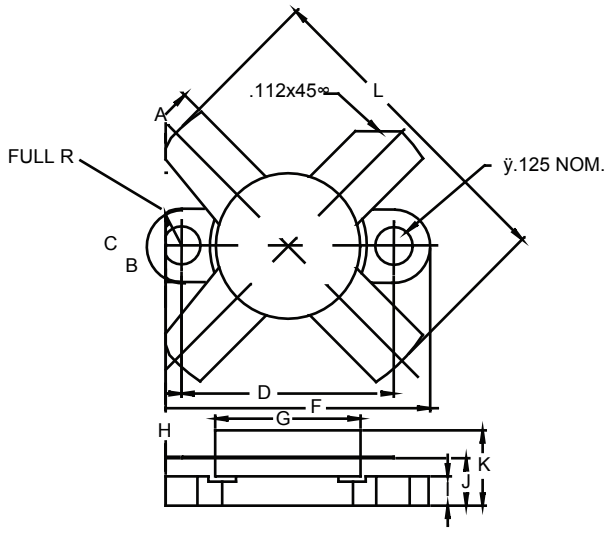
Note: IMD test Pout=100W PEP, fo = 30 + 30.001MHz



Z_S= 0.87–j0.03 Ω

Z_L= 5.06–j0.37 Ω

Package Outline



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.125 / 3.18	
C	.245 / 6.22	.255 / 6.48
D	.720 / 18.28	.7.30 / 18.54
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	.150 / 3.81	.175 / 4.45
K		.280 / 7.11
L	.980 / 24.89	1.050 / 26.67