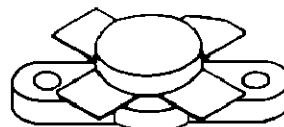


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 30 MHz
- 12.5 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 100\text{ W MIN. WITH }12.0\text{ dB GAIN}$



.500 4LFL (M174)
epoxy sealed

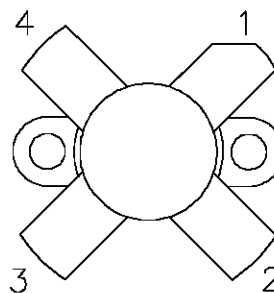
ORDER CODE
SD1487

BRANDING
SD1487

DESCRIPTION

The SD1487 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for HF communications. This device utilizes state-of-the-art diffused emitter ballasting to achieve extreme ruggedness under severe operating conditions.

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	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	20	A
P_{DISS}	Power Dissipation	290	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	0.6	$^{\circ}\text{C/W}$
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SD1487

ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

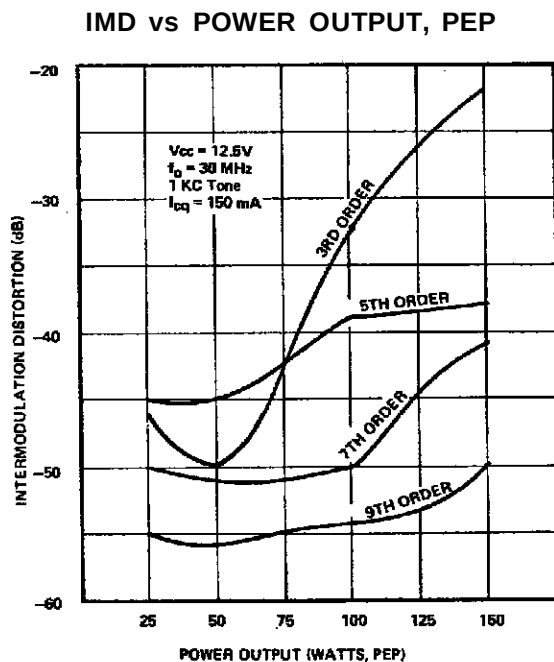
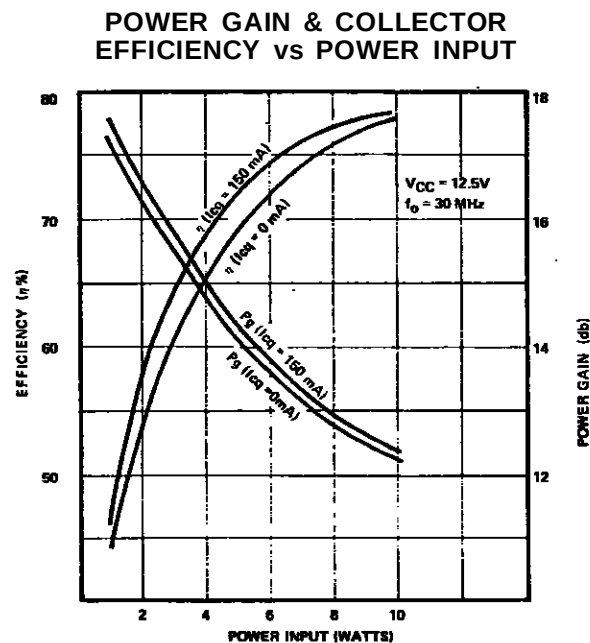
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 100mA$ $I_E = 0mA$	36	—	—	V
BV_{CES}	$I_C = 100mA$ $V_{BE} = 0V$	36	—	—	V
BV_{CEO}	$I_C = 100mA$ $I_B = 0mA$	18	—	—	V
BV_{EBO}	$I_E = 20mA$ $I_C = 0mA$	4.0	—	—	V
I_{CES}	$V_{CE} = 15V$ $I_E = 0mA$	—	—	20	mA
h_{FE}	$V_{CE} = 5V$ $I_C = 5A$	10	—	200	—

DYNAMIC

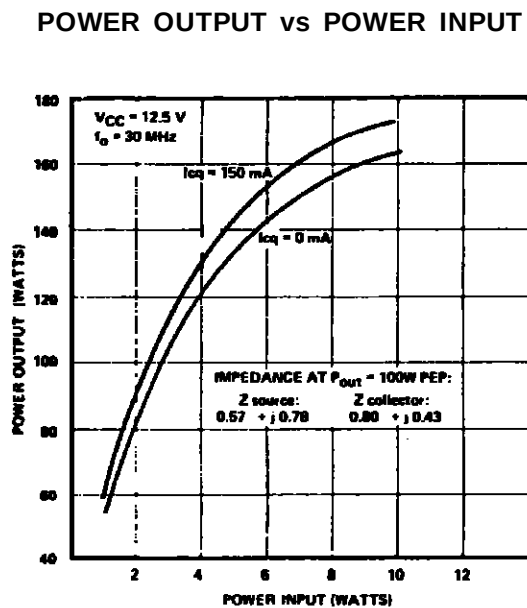
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$ $V_{CE} = 12.5\text{ V}$ $I_{CQ} = 150mA$	100	—	—	W
G_P	$f = 30\text{ MHz}$ $V_{CE} = 12.5\text{ V}$ $I_{CQ} = 150mA$	11	13	—	dB
IMD_3^*	$P_{OUT} = 100W_{PEP}$ $V_{CE} = 12.5\text{ V}$ $I_{CQ} = 150mA$	—	—	-30	dBc
C_{OB}	$f = 1\text{ MHz}$ $V_{CB} = 12.5\text{ V}$	—	400	—	pF

*Note: $f = 30 + 30.001MHz$

TYPICAL PERFORMANCE



TYPICAL PERFORMANCE (cont'd)



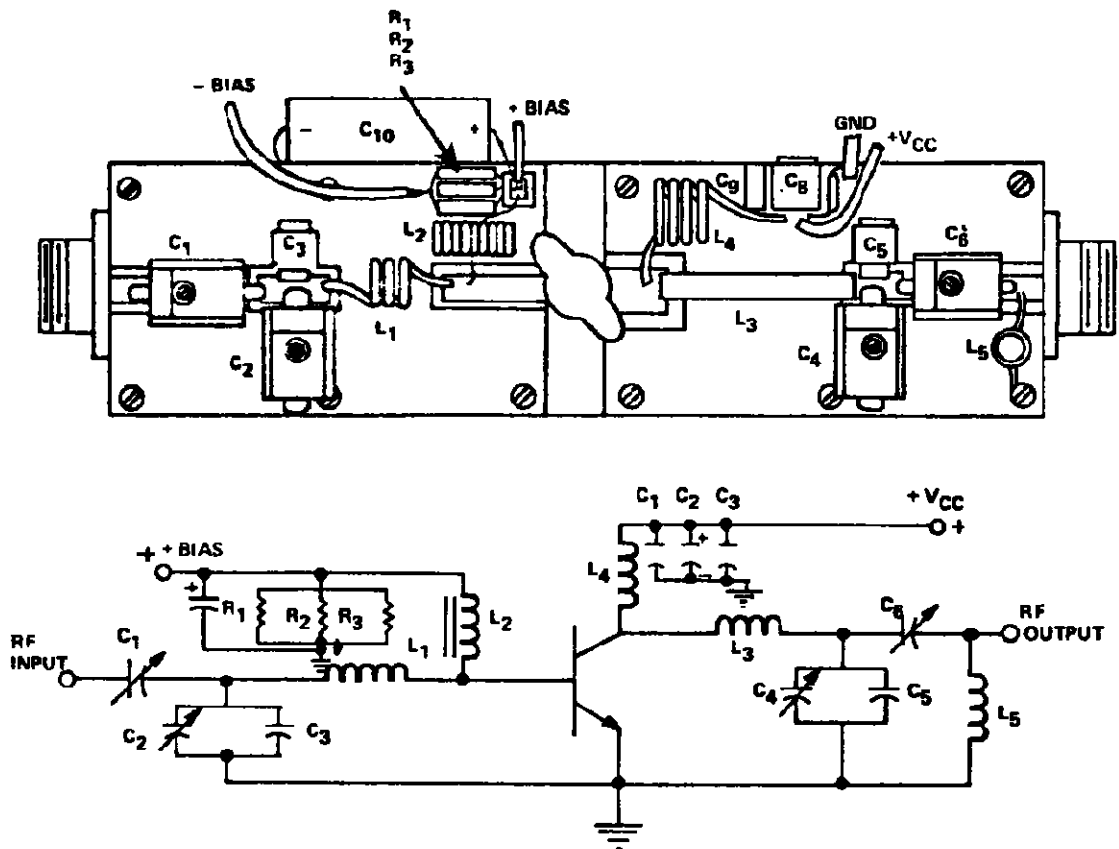
IMPEDANCE DATA

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
30 MHz	$0.57 + j 0.78$	$0.80 + j 0.43$

$P_{OUT} = 100 \text{ W PEP}$

$V_{CE} = 12.5 \text{ V}$

TEST CIRCUIT



C1 : 9 - 180pF Arco 463
 C2 : 5 - 380pF Arco 465
 C3 : 200pF Arco 465
 C4, C6 : 170pF Arco 469
 C7 : 0.1 μ F Ceramic Disc
 C5, C8 : 1000pF Unelco
 C9 : 10 μ F Electrolytic, 35Vdc
 C10 : 1000 μ F Electrolytic, 35Vdc

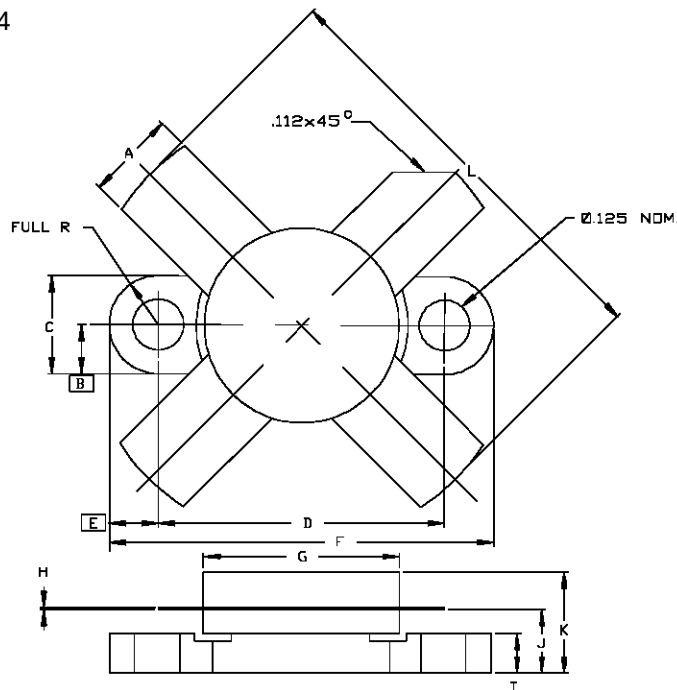
L1 : 2 1/2 Turns, #14 AWG, I.D. Loose Wound
 L2 : 16 Turns, #16 AWG, Enameled Wire on
 Micrometals Torroid #T-94

L3 : Copper Strap 1/4" Width, Length 1 1/2,
 Height 1/2"
 L4 : 4 Turns, #16 AWG, Enameled Wire 3/8" I.D.
 L5 : 5 Turns, #18 AWG on 1/4" I.D. Coil Form
 Length 1/2", Ferrite Slug

R1, R2,
 R3 : 1.5 Ohm, 1 Watt Carbon

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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