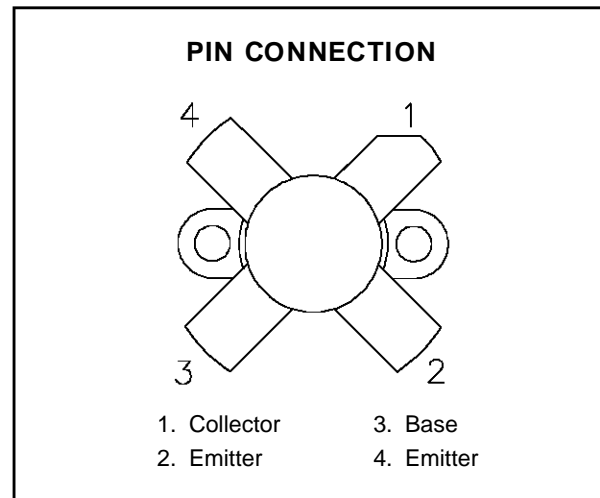
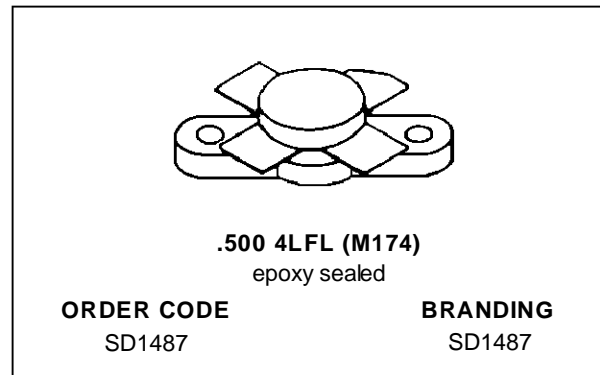


**RF & MICROWAVE TRANSISTORS
HF SSB APPLICATIONS**

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


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.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°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	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	0.6	°C/W
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SD1487

ELECTRICAL SPECIFICATIONS (T_{case} = 25°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	—

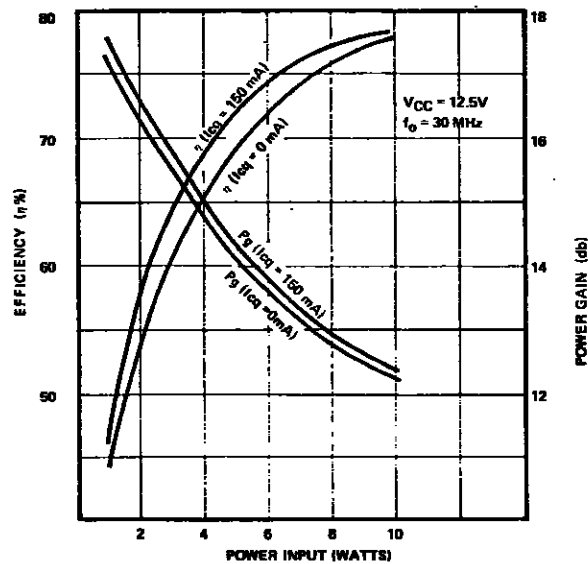
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 30 MHz	V _{CE} = 12.5 V	I _{CQ} = 150mA	100	—	—	W
G _P	f = 30 MHz	V _{CE} = 12.5 V	I _{CQ} = 150mA	11	13	—	dB
IMD ₃ *	P _{OUT} = 100WPEP	V _{CE} = 12.5 V	I _{CQ} = 150mA	—	—	-30	dBc
C _{OB}	f = 1 MHz	V _{CB} = 12.5 V		—	400	—	pF

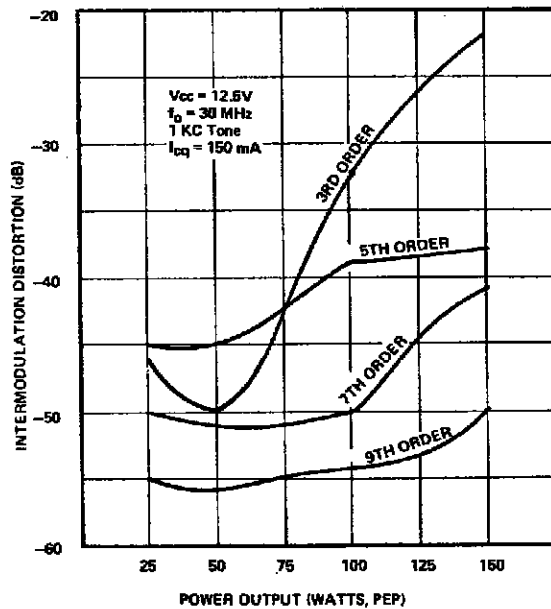
*Note: f = 30 + 30.001MHz

TYPICAL PERFORMANCE

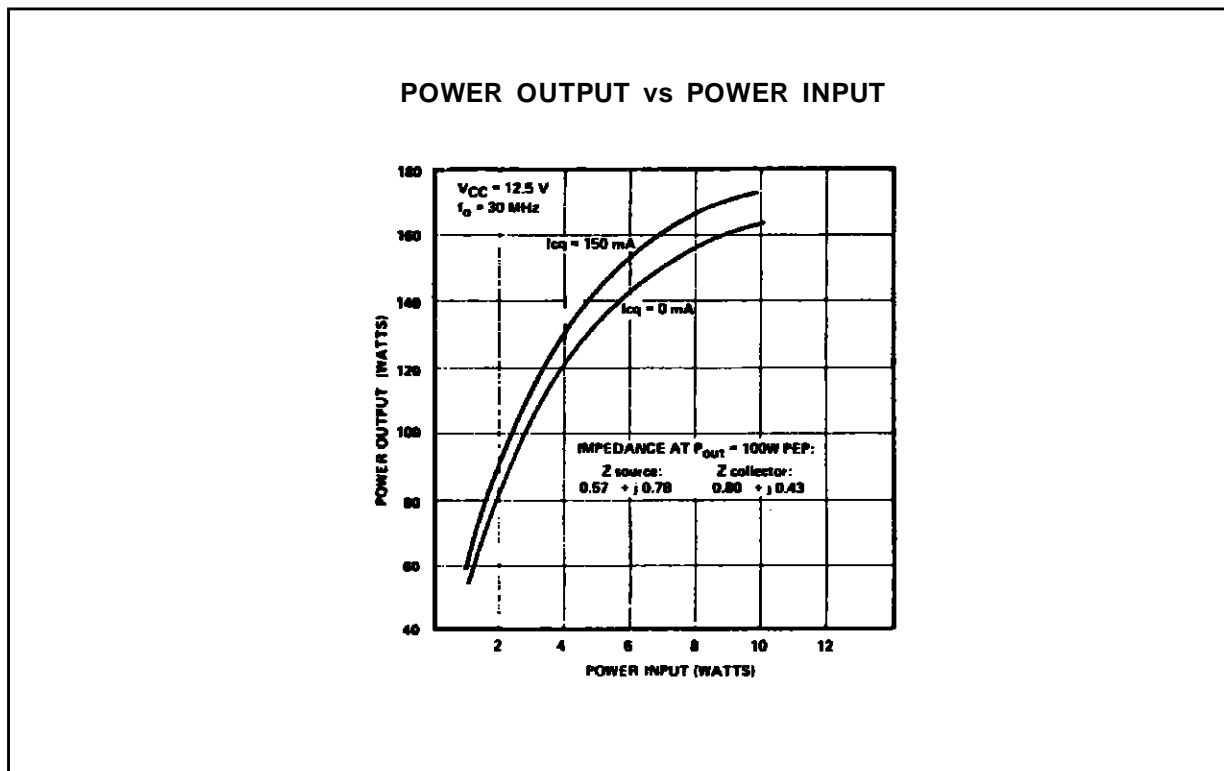
POWER GAIN & COLLECTOR EFFICIENCY vs POWER INPUT



IMD vs POWER OUTPUT, PEP



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

