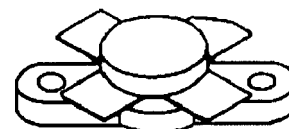


PRELIMINARY INFORMATION
VRF150
**BROADBAND HF/VHF VERTICAL D-MOS
ISM & MILITARY/COMMERCIAL COMMUNICATIONS APPLICATIONS**
Features

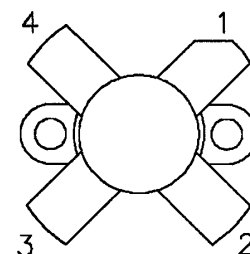
- 150W WITH 10dB TYPICAL GAIN @ 150MHz, 50V
- 150W WITH 18dB MIN GAIN @ 30MHz, 50V
- EXCELLENT STABILITY & LOW IMD
- COMMON SOURCE CONFIGURATION
- 30:1 LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- NITRIDE PASSIVATED
- REFRACTORY GOLD METALLIZATION

DESCRIPTION:

The VRF150 is a gold metallized silicon, n-channel RF power transistor designed for broadband commercial and military applications requiring high power and gain without compromising reliability, ruggedness, and intermodulation distortion.



.500 4LFL (M174)
epoxy sealed

PIN CONNECTION


1. DRAIN 3. GATE
2. SOURCE 4. SOURCE

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{(BR)DSS}	Drain-Source Voltage	125	V
V _{DGO}	Drain-Gate Voltage	125	V
V _{GS}	Gate-Source Voltage	±40	V
I _D	Drain Current	16	A
P _{DISS}	Total Device Power Dissipation	300	W
T _J	Max Operating Junction Temperature	+200	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

R _{θ(J-C)}	Thermal Resistance Junction-Case	0.6	°C/W
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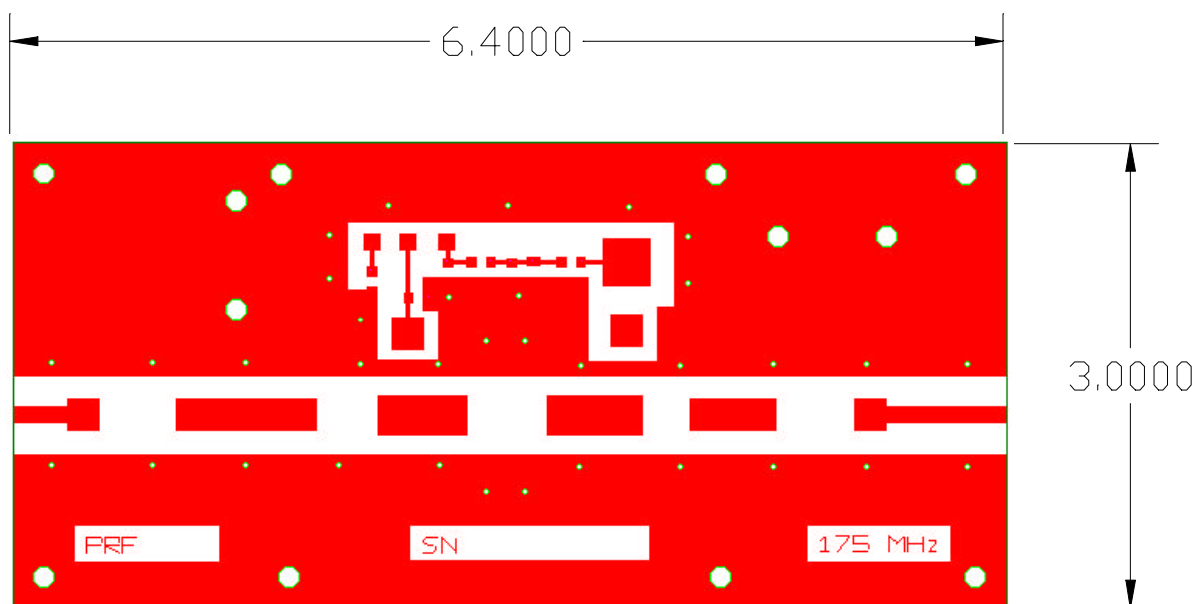
ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions			Value		
				Min.	Typ.	Max.
Off Characteristics:						
V _{(BR)DSS}	V _{GS} = 0V	I _{DS} = 100mA	125	---	---	V
I _{DSS}	V _{GS} = 0V	V _{DS} = 50V	---	---	5.0	mA
I _{GSS}	V _{GS} = 20V	V _{DS} = 0V	---	---	1.0	μA
On Characteristics:						
V _{GS(Q)}	V _{DS} = 10V	I _D = 250mA	1.0	3.0	5.0	V
V _{DS(ON)}	V _{GS} = 10V	I _D = 10A	1.0	2.0	5.0	V
G _{FS}	V _{DS} = 10V	I _D = 250mA	5.0	---	---	mho
Dynamic Characteristics:						
C _{ISS}	V _{GS} = 0V	V _{DS} = 50V	f = 1 MHz	---	480	pF
C _{OSS}	V _{GS} = 0V	V _{DS} = 50V	f = 1 MHz	---	230	pF
C _{RSS}	V _{GS} = 0V	V _{DS} = 50V	f = 1 MHz	---	40	pF

FUNCTIONAL TESTS

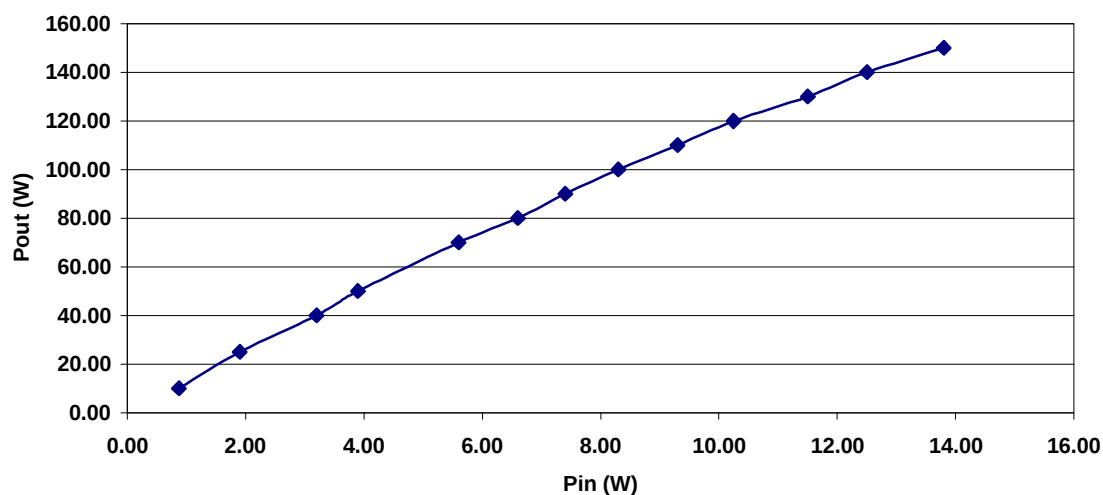
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P _{OUT}	f = 150MHz	V _{DD} = 50V I _{DQ} = 250mA	150		---	W
G _{PS}	f = 150MHz	V _{DD} = 50V P _{OUT} = 150W _{PEP} I _{DQ} = 250mA	---	10	---	dB
G _{PS}	f = 30MHz	V _{DD} = 50V P _{OUT} = 150W _{PEP} I _{DQ} = 250mA	---	18	---	dB
η _D	f = 150MHz	V _{DD} = 50V P _{OUT} = 150W _{PEP} I _{DQ} = 250mA	---	50	---	%
IMD _(d3)	f ₁ = 30MHz f ₂ = 30.001MHz	P _{OUT} = 150W _{PEP} V _{DD} = 50V I _{DQ} = 250mA	---	-32	---	dBc
Load Mismatch	f = 30MHz	V _{DD} = 50V P _{OUT} = 150W _{PEP} V _{DQ} = 250mA 30:1 VSWR - All Phase Angles	No degradation in Output Power			

TEST CIRCUIT INFORMATION



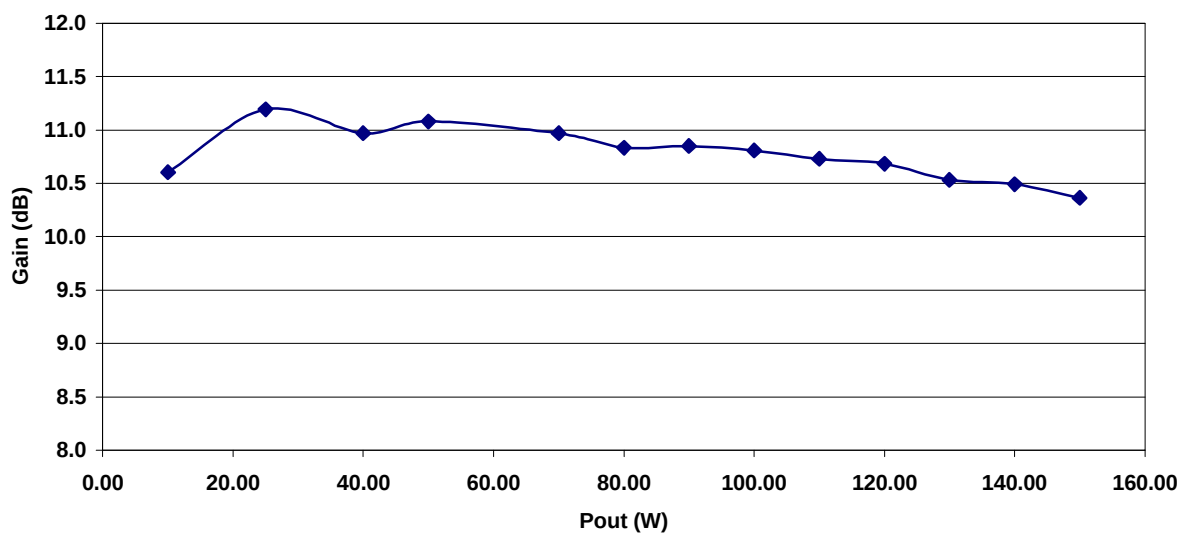
Power Out vs. Power In

Vdd = 50V, Idq = 250mA, Freq = 175 MHz



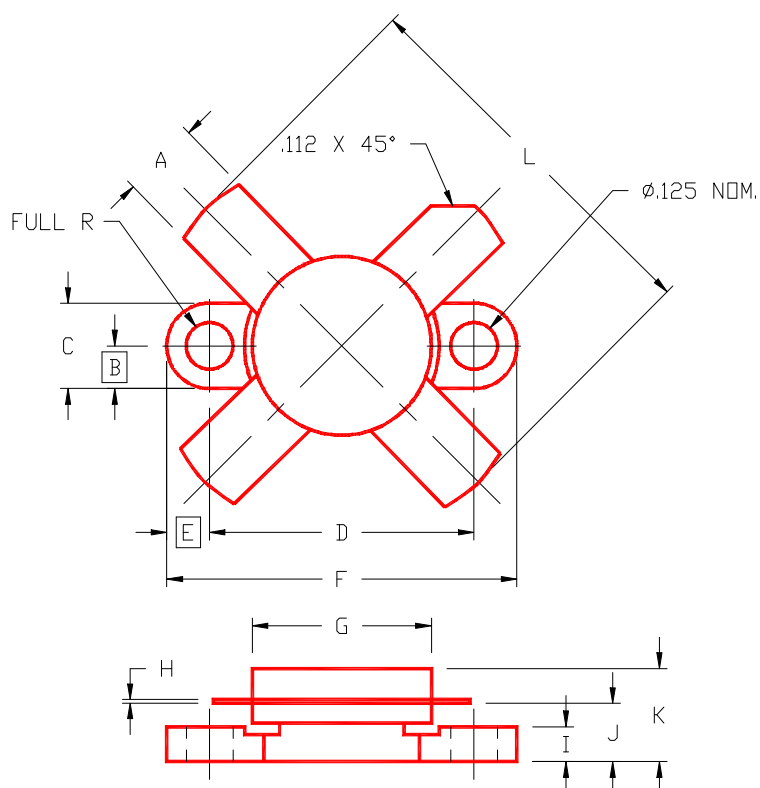
Gain vs. Power Out

Vdd = 50V, Idq = 250mA, Freq = 175 MHz



PACKAGE MECHANICAL DATA

PACKAGE STYLE M174



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.090/2,29	.110/2,79
B	.125/3,18		J	.160/4,06	.175/4,45
C	.245/6,22	.255/6,48	K		.280/7,11
D	.720/18,28	.730/18,54	L		1.050/26,67
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			