

DESCRIPTION

The high power HVV1011-500L device is a high voltage silicon enhancement mode RF transistor designed for L-band pulsed applications operating at 1030 MHz using a 2.4ms pulse burst (32 μ s on/18 μ s off x 48) repeated every 24ms.

FEATURES

- High Power Gain
- Excellent Ruggedness
- 50V Supply Voltage

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage	95	V
V _{GS}	Gate-Source Voltage	-10 to +10	V
I _{DSX}	Drain Current	40	A
P _D ²	Power Dissipation	970	W
T _S	Storage Temperature	-65 to +150	°C
T _J	Junction Temperature	200	°C

THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
θ_{JC}^1	Thermal Resistance	0.18	°C/W

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Typ	Units
V _{BR(DSS)}	Drain-Source Breakdown	V _{GS} =0V, I _D =10mA	102	V
I _{DSS}	Drain Leakage Current	V _{GS} =0V, V _{DS} =50V	<300	μ A
I _{GSS}	Gate Leakage Current	V _{GS} =5V, V _{DS} =0V	<2	μ A
G _p ¹	Power Gain	P _{OUT} =500W, F=1030 MHz	16.5	dB
IRL ¹	Input Return Loss	P _{OUT} =500W, F=1030 MHz	12	dB
η_p ¹	Drain Efficiency	P _{OUT} =500W, F=1030 MHz	51	%
PD ¹	Pulse Droop	P _{OUT} =500W, F=1030 MHz	0.2	dB
BD ¹	Burst Droop	P _{OUT} =500W, F=1030 MHz	0.9	dB

¹Under Pulse Conditions: 32 μ s on/18 μ s off x 48, Period = 24ms at V_{DD} = 50V, I_{DQ} = 100mA

²Rated at T_{CASE} = 25°C

PACKAGE



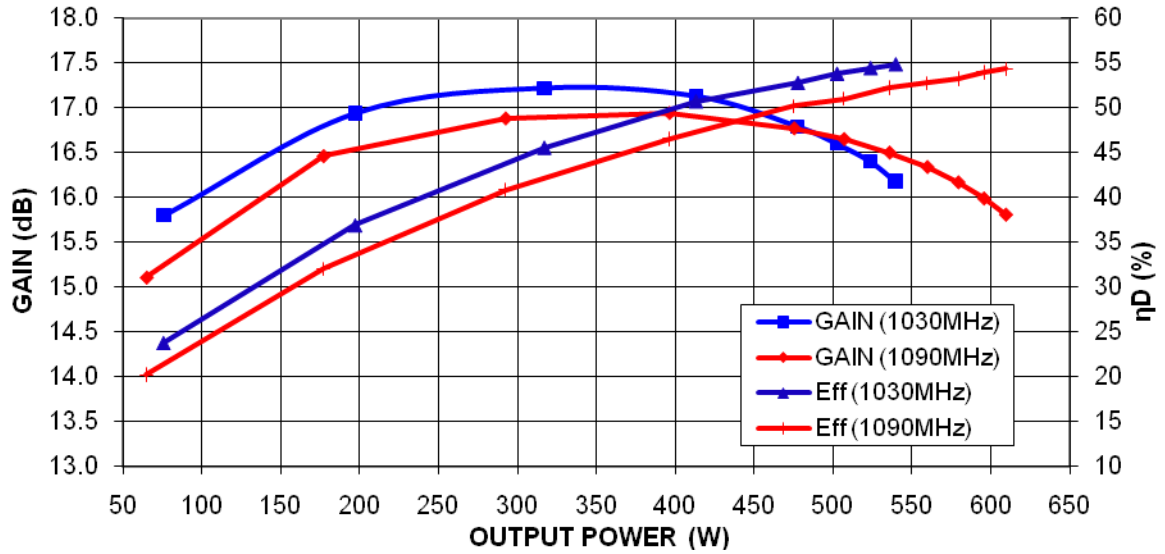
The device utilizes a RoHS compliant metal ceramic flanged package with a ceramic lid. The HV800 package style is qualified for gross leak test – MIL-STD-883, Method 1014.

RUGGEDNESS

The HVV1011-500L device is capable of withstanding an output load mismatch corresponding to a 20:1 VSWR at rated output power over all phase angles and operating voltage across the frequency band of operation.

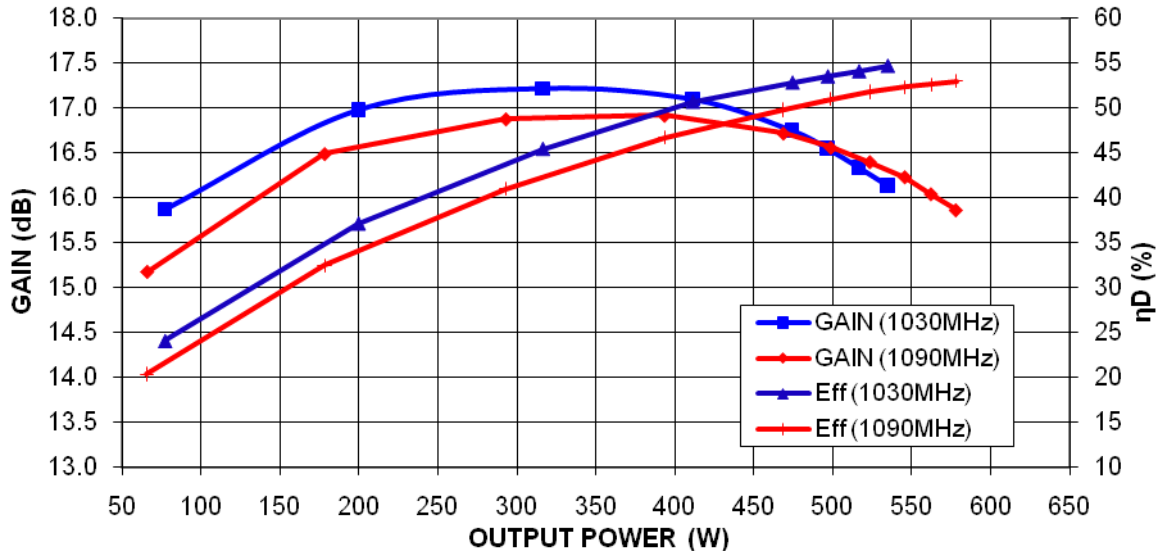
Symbol	Parameter	Test Condition	Max	Units
LMT ¹	Load Mismatch Tolerance	P _{OUT} = 500W F = 1030 MHz	20:1	VSWR

**Typical Power Performance
in a Broadband Matched Circuit**



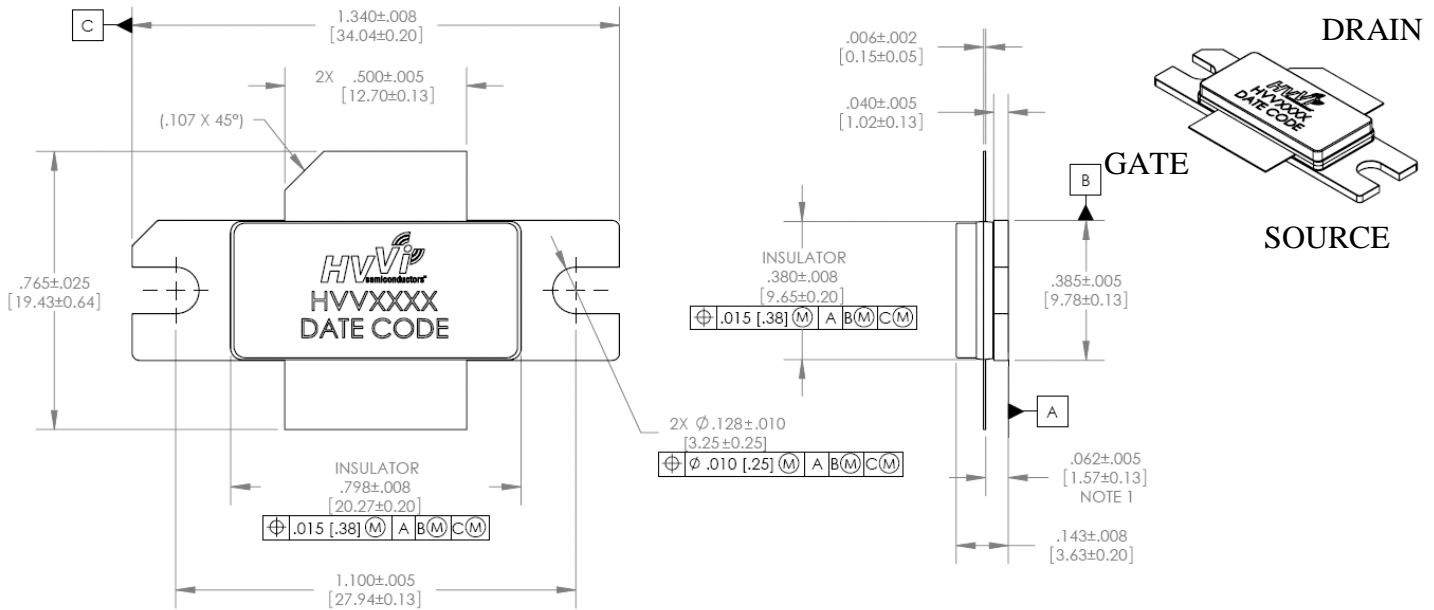
Typical device performance under Class AB mode of operation and RF signal conditions of 50μs pulse width and 2% duty cycle with VDD = 50V and IDQ = 100mA.

**Typical Power Performance
in a Broadband Matched Circuit**



Typical device performance under Class AB mode of operation and RF burst conditions of 32μs on/18μs off x 48, repeated every 24ms with VDD = 50V and IDQ = 100mA.

PACKAGE DIMENSIONS



Note: Drawing is not actual size.

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