

## DESCRIPTION

The high power HVV1214-025 device is a high voltage silicon enhancement mode RF transistor designed for L-band pulsed radar applications operating over the frequency range of 1200 MHz and 1400 MHz.

## FEATURES

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

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V <sub>DSS</sub>	Drain-Source Voltage	95	V
V <sub>GS</sub>	Gate-Source Voltage	-10, 10	V
I <sub>DSX</sub>	Drain Current	2	A
P <sub>D</sub> <sup>2</sup>	Power Dissipation	116	W
T <sub>S</sub>	Storage Temperature	-65 to +150	°C
T <sub>J</sub>	Junction Temperature	200	°C

## THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
θ <sub>JC</sub> <sup>1</sup>	Thermal Resistance	1.5	°C/W

## PACKAGE



The device resides in the SM200 surface mount package with a ceramic lid.

## RUGGEDNESS

The HVV1214-025 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 <sup>1</sup>	Load Mismatch Tolerance	P <sub>OUT</sub> = 25W F = 1300 MHz	20:1	VSWR

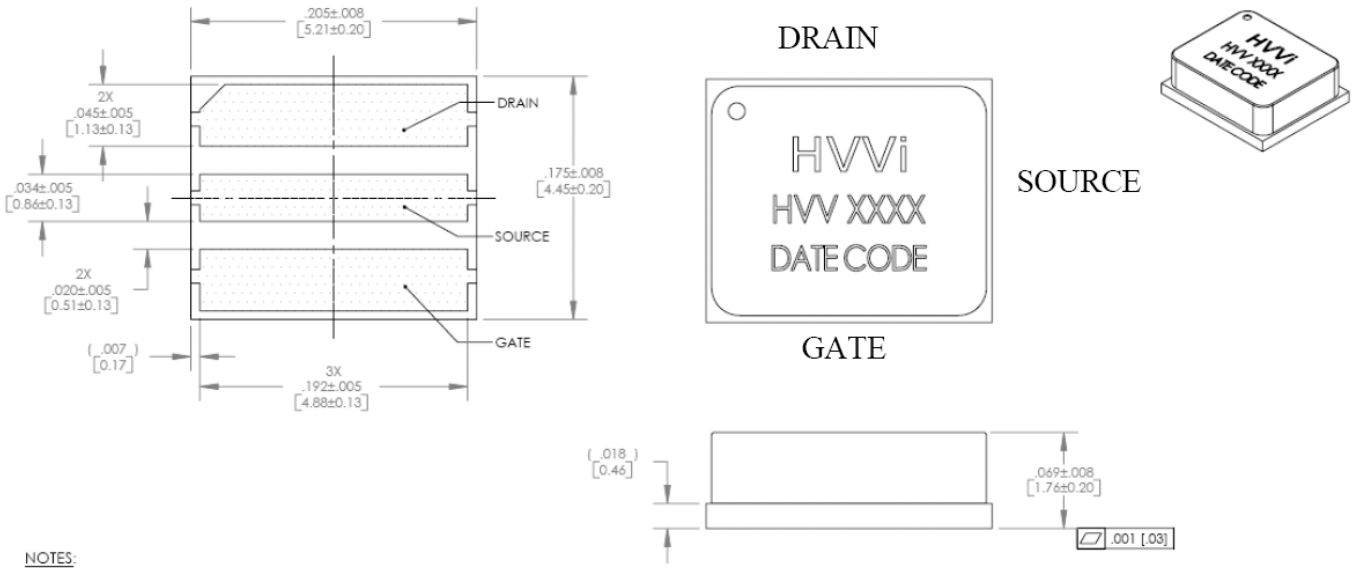
## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V <sub>BR(DSS)</sub>	Drain-Source Breakdown	VGS=0V, ID=2mA	95	102		V
I <sub>DSS</sub>	Drain Leakage Current	VGS=0V, VDS=50V		15	50	µA
I <sub>GSS</sub>	Gate Leakage Current	VGS=5V, VDS=0V		2	10	µA
G <sub>p</sub> <sup>1</sup>	Power Gain	P <sub>OUT</sub> =25W, F=1300 MHz	19	20.5		dB
IRL <sup>1</sup>	Input Return Loss	P <sub>OUT</sub> =25W, F=1300 MHz		-12	-8	dB
η <sub>D</sub> <sup>1</sup>	Drain Efficiency	P <sub>OUT</sub> =25W, F=1300 MHz	40	42		%
PD <sup>1</sup>	Pulse Droop	P <sub>OUT</sub> =25W, F=1300 MHz		0.3	0.6	dB
VGS(Q)	Gate Quiescent Voltage	VDD=50V, IDQ=15mA	1.0	1.4	1.7	V
VTH	Threshold Voltage	VDD=5V, ID=300µA	0.7	1.2	1.7	V

<sup>1</sup>Under Pulse Conditions: Pulse Width = 200µs, Pulse Duty Cycle = 10% at VDD = 50V, IDQ = 15mA

<sup>2</sup>Rated at T<sub>CASE</sub> = 25°C

**PACKAGE DIMENSIONS**



NOTES:  
1. HATCHED AREA WAS METALIZED AND PLATED.

Note: Drawing is not actual size.

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