

HVV1012-100 PRODUCT OVERVIEW

L-Band Avionics Pulsed Power Transistor
1025-1150MHz, 10 μ s Pulse, 1% Duty
for DME and TCAS Applications

DESCRIPTION

The high power HVV1012-100 device is a high voltage silicon enhancement mode RF transistor designed for L-Band pulsed avionics applications operating over the frequency range from 1025MHz to 1150MHz.

FEATURES

- High Power Gain
- Excellent Ruggedness
- 48V Supply Voltage

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage	95	V
V _{GS}	Gate-Source Voltage	10	V
I _{DSX}	Drain Current	8	A
P _D ²	Power Dissipation	1250	W
T _S	Storage Temperature	-65 to +200	°C
T _J	Junction Temperature	200	°C

THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
θ_{JC}^1	Thermal Resistance	0.14	°C/W

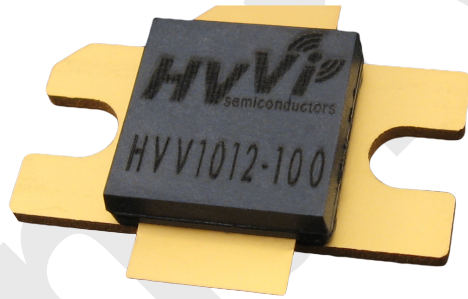
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Typ	Units
V _{BR(DSS)}	Drain-Source Breakdown	VGS=0V, ID=3mA	102	V
I _{DSS}	Drain Leakage Current	VGS=0V, VDS=48V	<80	μ A
I _{GSS}	Gate Leakage Current	VGS=5V, VDS=0V	<1	μ A
G _p ¹	Power Gain	P _{OUT} =100W, F=1025,1150MHz	20.5	dB
IRL ¹	Input Return Loss	P _{OUT} =100W, F=1025,1150MHz	11	dB
η_p^1	Drain Efficiency	P _{OUT} =100W, F=1025,1150MHz	50	%
PD ¹	Pulse Droop	P _{OUT} =100W, F=1025,1150MHz	<0.3	dB

¹Under Pulse Conditions: Pulse Width = 10 μ sec, Pulse Duty Cycle = 1% at VDD = 48V, IDQ = 50mA

²Rated at T_{CASE} = 25°

PACKAGE



The device resides in a two-lead metal flanged package with liquid crystal polymer lid. The HV400 package style is qualified for gross leak test – MIL-STD-883, Method 1014.

RUGGEDNESS

The HVV1012-100 device is capable of withstanding an output load mismatch corresponding to a 20:1 VSWR at rated output power and operating voltage across the frequency band of operation.

Symbol	Parameter	Test Condition	Max	Units
LMT ¹	Load Mismatch Tolerance	P _{OUT} = 100W F = 1150 MHz	20:1	VSWR

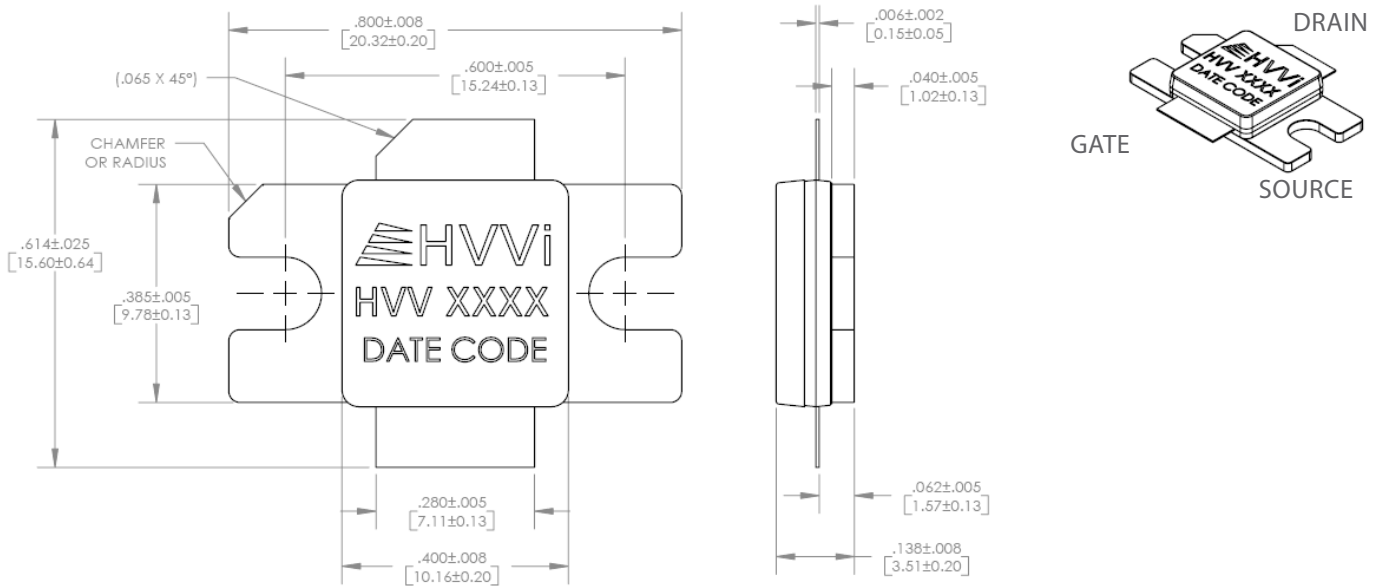


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PACKAGE DIMENSIONS



Note: Drawing is not actual size.

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