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HVV1214-075 PRODUCT OVERVIEW

L-Band Radar Pulsed Power Transistor
1200-1400 MHz, 200µs Pulse, 10% Duty
for Ground Based Radar Applications

DESCRIPTION

The high power HVV1214-075 device is a high voltage silicon enhancement mode RF transistor designed for L-Band pulsed radar applications operating over the frequency range from 1.2GHz to 1.4GHz.

FEATURES

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

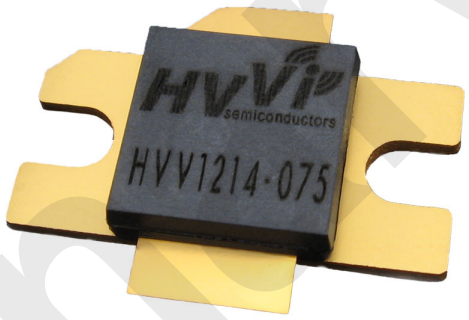
ABSOLUTE MAXIMUM RATINGS

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	250	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	0.70	°C/W

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-750D, Method 1071.6, Test Condition C.

RUGGEDNESS

The HVV1214-075 device is capable of withstanding an output load mismatch corresponding to a 20:1 VSWR over all phase angles and 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} = 75W F = 1400MHz	20:1	VSWR

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	µA
I_{GSS}	Gate Leakage Current	VGS=5V,VDS=0V	<1	µA
G_P[1]	Power Gain	P_{OUT}=75W,F=1200MHz,1400MHz	21	dB
IRL[1]	Input Return Loss	P_{OUT}=75W,F=1200MHz,1400MHz	9	dB
η_D[1]	Drain Efficiency	P_{OUT}=75W,F=1200MHz,1400MHz	44	%
PD[1]	Pulse Droop	P_{OUT}=75W,F=1200MHz,1400MHz	<0.6	dB

[1]Under Pulse Conditions: Pulse Width = 200µsec, Pulse Duty Cycle = 10% at VDD = 48V, IDQ = 50mA
[2]Rated at T_{CASE} = 25°C

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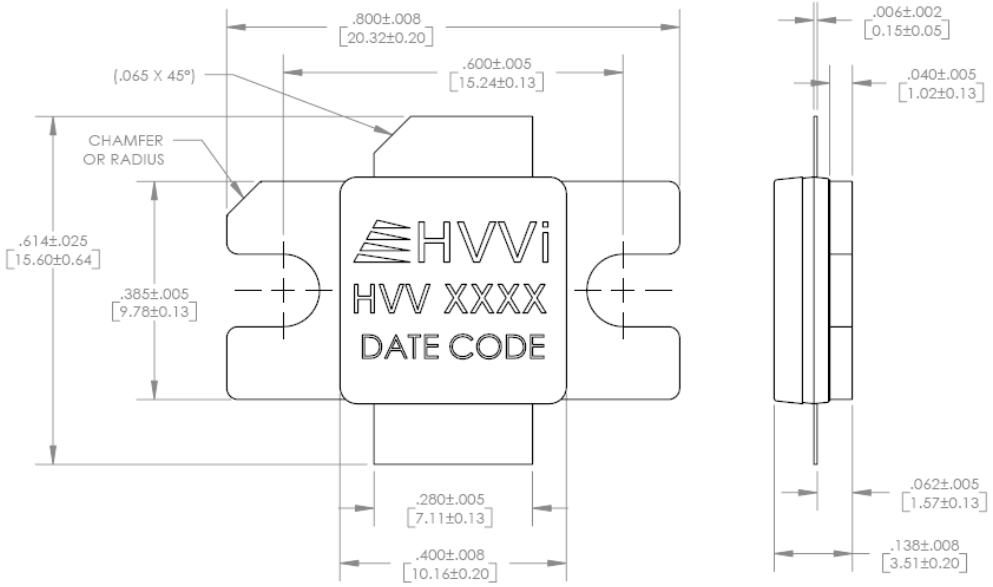
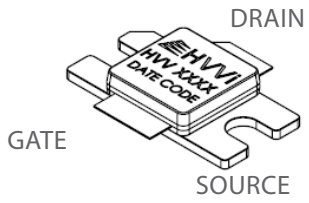
PACKAGE DIMENSIONS





Note: Drawing is not actual size.