

DESCRIPTION

The high power HVV1214-25 device is a high voltage silicon enhancement mode RF transistor designed for L-Band pulsed radar applications operating over the frequency range from 1.2 GHz to 1.4 GHz.

FEATURES

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

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	105	V
V_{GS}	Gate-Source Voltage	10	V
I_{DSX}	Drain Current	2	A
P_D^2	Power Dissipation	116	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	1.5	°C/W

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Typ	Units
$V_{BR(DSS)}$	Drain-Source Breakdown	$V_{GS}=0V, I_D=1mA$	110	V
I_{DSS}	Drain Leakage Current	$V_{GS}=0V, V_{DS}=48V$	<10	µA
I_{GSS}	Gate Leakage Current	$V_{GS}=5V, V_{DS}=0V$	<1	µA
G_p^1	Power Gain	$P_{OUT}=25W, F=1200, 1400MHz$	17.5	dB
IRL^1	Input Return Loss	$P_{OUT}=25W, F=1200, 1400MHz$	8	dB
η_D^1	Drain Efficiency	$P_{OUT}=25W, F=1200, 1400MHz$	49	%
PD^1	Pulse Droop	$P_{OUT}=25W, F=1200, 1400MHz$	<0.2	dB

- 1.) Under Pulse Conditions: Pulse Width = 200 µsec, Pulse Duty Cycle = 10% at $V_{DD} = 48V$, $IDQ = 15mA$
- 2.) Rated at $T_{CASE} = 25°C$

PACKAGE

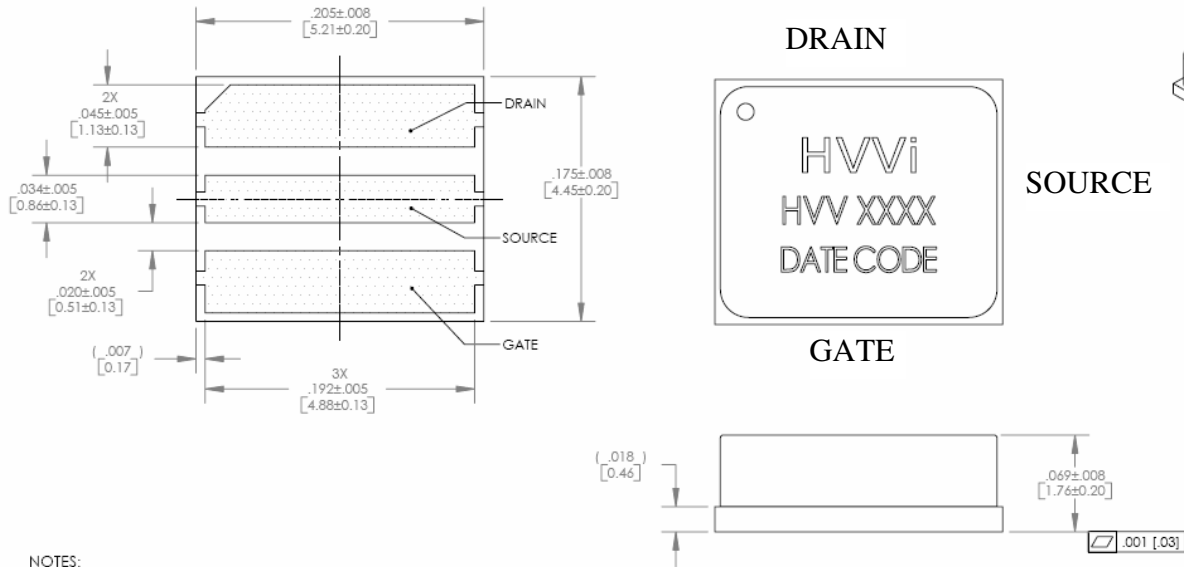


The device resides in a Surface Mount Transistor Package with a ceramic lid. The SMT package style is qualified for gross leak test – MIL-STD-750D, Method 1071.6, Test Condition C.

RUGGEDNESS

The HVV1214-25 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	$P_{OUT} = 25W$ $F = 1400 MHz$	20:1	VSWR

PACKAGE DIMENSIONS


Note: Drawing is not actual size.

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