

DESCRIPTION

The high power HVV0405-1000 device is a high voltage silicon enhancement mode RF transistor designed for UHF-band pulsed RADAR applications operating over the frequency range of 420 MHz to 470 MHz.

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	80	A
P_D^2	Power Dissipation	TBD	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	TBD	°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	$V_{GS}=0V, V_{DS}=50V$	<500	μA
I_{GSS}	Gate Leakage Current	$V_{GS}=5V, V_{DS}=0V$	<10	μA
P_{OUT}	Output Power	$P_{IN}=30W, F=370-470\text{ MHz}$	1100	W
G_p^1	Power Gain	$P_{IN}=30W, F=370-470\text{ MHz}$	16.5	dB
IRL^1	Input Return Loss	$P_{IN}=30W, F=370-470\text{ MHz}$	15	dB
η_D^1	Drain Efficiency	$P_{IN}=30W, F=370-470\text{ MHz}$	57	%
PD^1	Pulse Droop	$P_{IN}=30W, F=370-470\text{ MHz}$	0.5	dB

¹Under Pulse Conditions: Pulse Width = 1ms, Pulse Period = 10ms at $V_{DD} = 50V, I_{DQ} = 200mA$

²Rated at $T_{CASE} = 25^\circ C$

PACKAGE



The device utilizes a RoHS compliant flanged package with a ceramic lid.^e The HV1230 package style is qualified for gross leak test – MIL-STD-883, Method 1014.

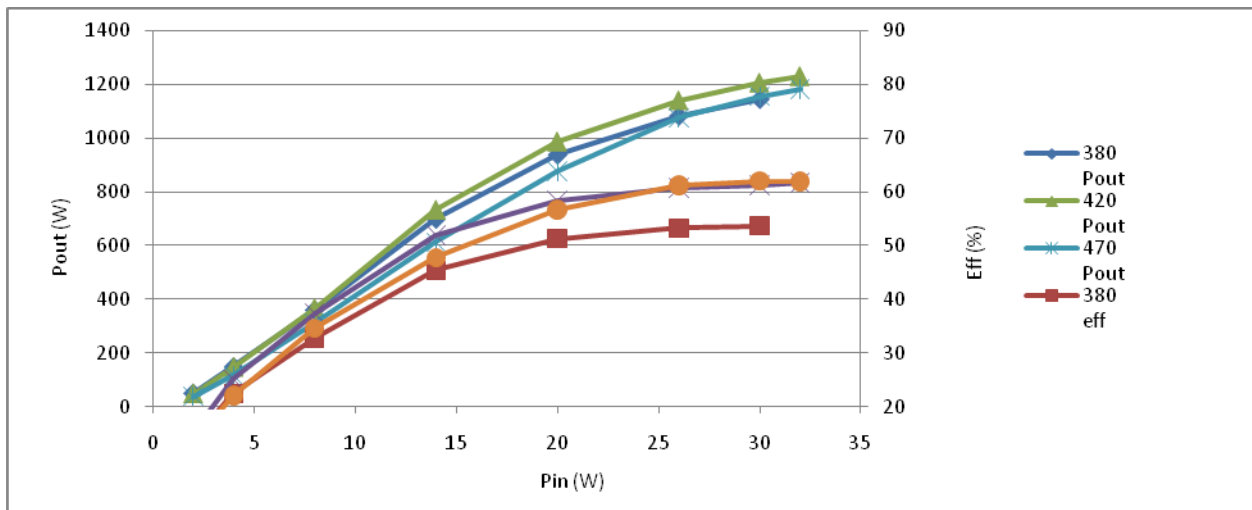
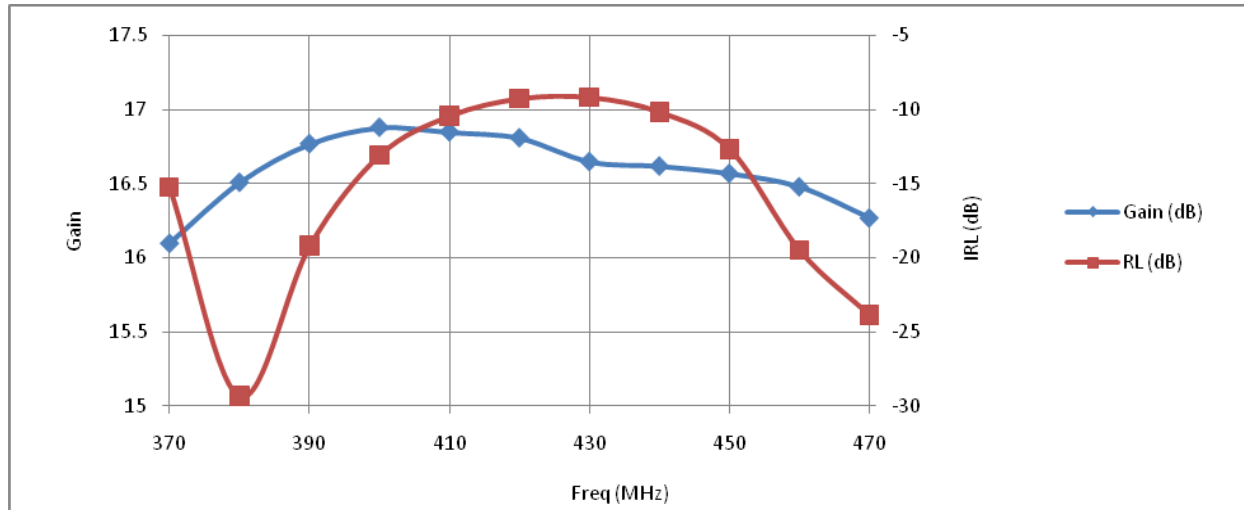
RUGGEDNESS

The HVV0405-1000 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.

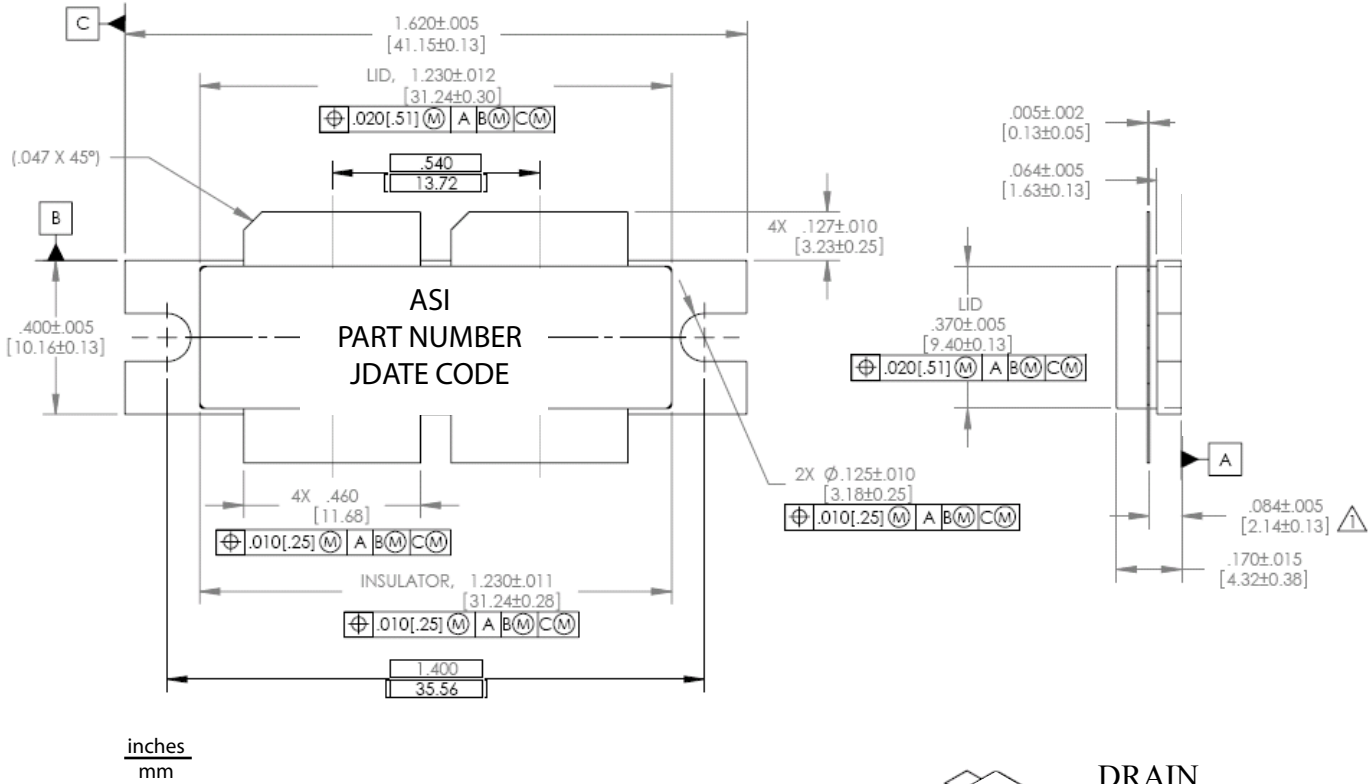
Symbol	Parameter	Test Condition	Max	Units
LMT^1	Load Mismatch Tolerance	$P_{OUT} = 1000W$ $F = 470\text{ MHz}$	20:1	VSWR

HVV0405-1000

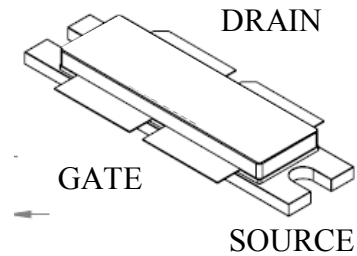
1000 Watts, 50V, 420-470MHz
1ms Pulsewidth, 10% Duty



PACKAGE DIMENSIONS



Note: Drawing is not actual size.



ASI Semiconductor, Inc. (ASI) reserves the right to make changes to information published in this document at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof. Information in this document is believed to be accurate and reliable. However, ASI does not give any representations or warranties, either express or implied, as to the accuracy or completeness of such information and shall have no liability no liability for consequences resulting from the use of such information. No license, either expressed or implied, is conveyed under any ASI intellectual property rights, including any patent rights.