HVV1011-075L (Preliminary Datasheet)

L-Band High Power Pulsed Transistor
32µs on/18us off x 48, repeated every 24ms
For Mode S-ELM Interrogator Applications

The innovative Semiconductor Company!

DESCRIPTION

The high power HVV1011-075L device is a high voltage silicon enhancement mode RF transistor designed for L-band pulsed applications operating at 1030 MHz using a 2.4ms pulse burst (32µs on/18µs off x 48) repeated every 24ms.

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	8	A
P_D[2]	Power Dissipation	625	W
P_{in}	Input Power	1.7	W
T_S	Storage Temperature	-40 to +150	°C
T_J	Junction Temperature	200	°C

THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
θ_{JC}[1]	Thermal Resistance	0.28	°C/W

PACKAGE

The device utilizes a RoHS compliant metal ceramic flanged package with a ceramic lid. The HV800 package style is qualified for gross leak test – MIL-STD-883, Method 1014.

RUGGEDNESS

The HVV1011-075L 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} = 75W F = 1030 MHz	20:1	VSWR

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Typ	Units
$V_{BR(DSS)}$	Drain-Source Breakdown	V_{GS}=0V, I_D=2mA	102	V
I_{DSS}	Drain Leakage Current	V_{GS}=0V, V_{DS}=50V	<100	µA
I_{GSS}	Gate Leakage Current	V_{GS}=5V, V_{DS}=0V	<1	µA
G_P[1]	Power Gain	P_{in}=0.3W, F=1030 MHz	21.5	dB
IRL[1]	Input Return Loss	P_{in}=0.3W, F=1030 MHz	14	dB
P_{OUT}	Power Out	P_{in}=0.3W, F=1030 MHz	75	W
η_D[1]	Drain Efficiency	P_{in}=0.3W, F=1030 MHz	45%	%
BD[1]	Burst Droop	P_{in}=0.3W, F=1030 MHz	0.7	dB

[1]Under Pulse Conditions: 32µs on/18µs off x 48, Period = 24ms at V_{DD} = 50V, I_{DQ} = 30mA
[2]Rated at T_{CASE} = 25°C

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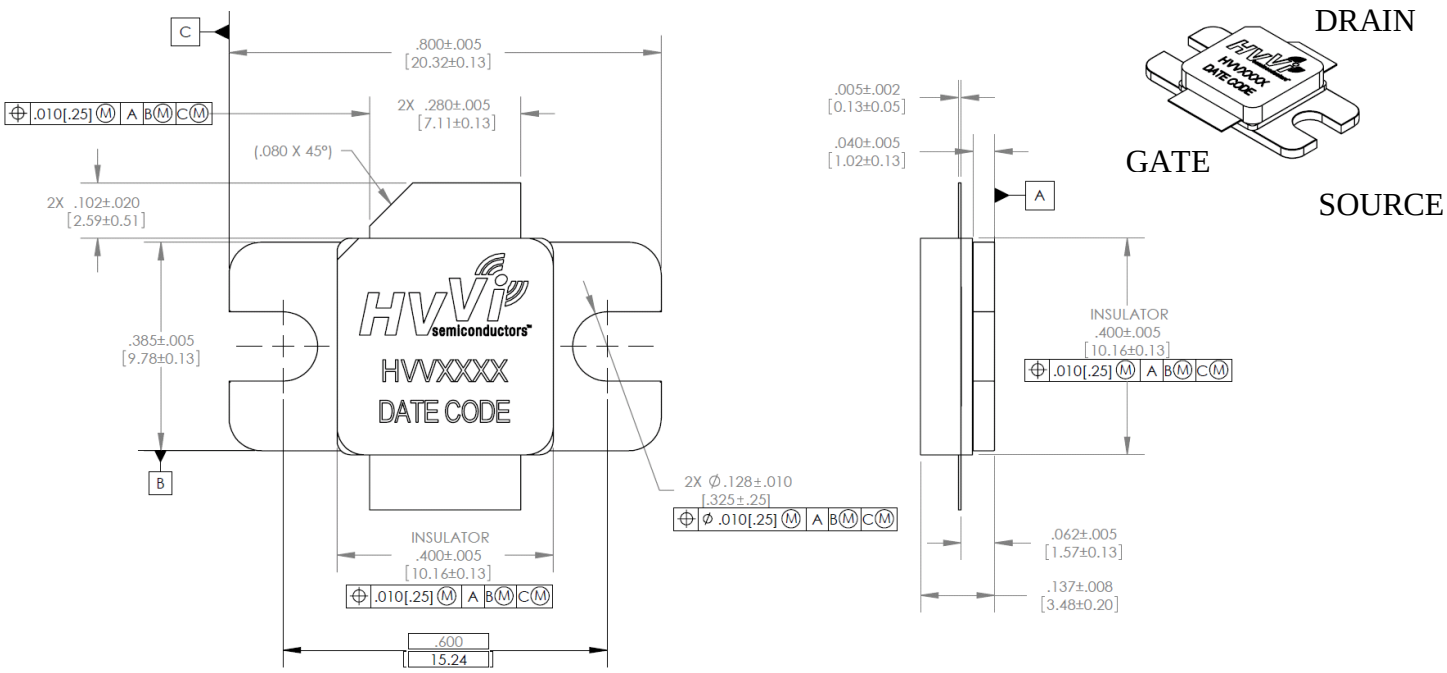
PACKAGE DIMENSIONS



Note: Drawing is not actual size.