

HVV1011-035 PRODUCT OVERVIEW

L-Band Avionics Pulsed Power Transistor
1030-1090MHz, 50µs Pulse, 5% Duty
for TCAS and Mode-S Applications

DESCRIPTION

The high power HVV1011-035 device is a high voltage silicon enhancement mode RF transistor designed for L-Band pulsed avionics applications operating over the frequency range from 1030MHz to 1090MHz.

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 | 2 | A |
| P _D ^{1,2} | 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 =2mA | 102 | V |
| I _{DSS} | Drain Leakage Current | V _{GS} =0V, V _{DS} =48V | <25 | µA |
| I _{GSS} | Gate Leakage Current | V _{GS} =5V, V _{DS} =0V | <1 | µA |
| G _p ¹ | Power Gain | P _{OUT} =35W, F=1060MHz | 20 | dB |
| IRL ¹ | Input Return Loss | P _{OUT} =35W, F=1060MHz | 8 | dB |
| θ _{JC} ¹ | Drain Efficiency | P _{OUT} =35W, F=1060MHz | 52 | % |
| PD ¹ | Pulse Droop | P _{OUT} =35W, F=1060MHz | <0.2 | dB |

¹Under Pulse Conditions: Pulse Width = 50 µsec, Pulse Duty Cycle = 5% at V_{DD} = 48V, I_{DQ} = 15mA

²Rated at TCASE = 25°C

PACKAGE



The device resides in a Surface Mount Package with a ceramic lid. The SM200 package style is qualified for gross leak test – MIL-STD-883, Method 1014.

RUGGEDNESS

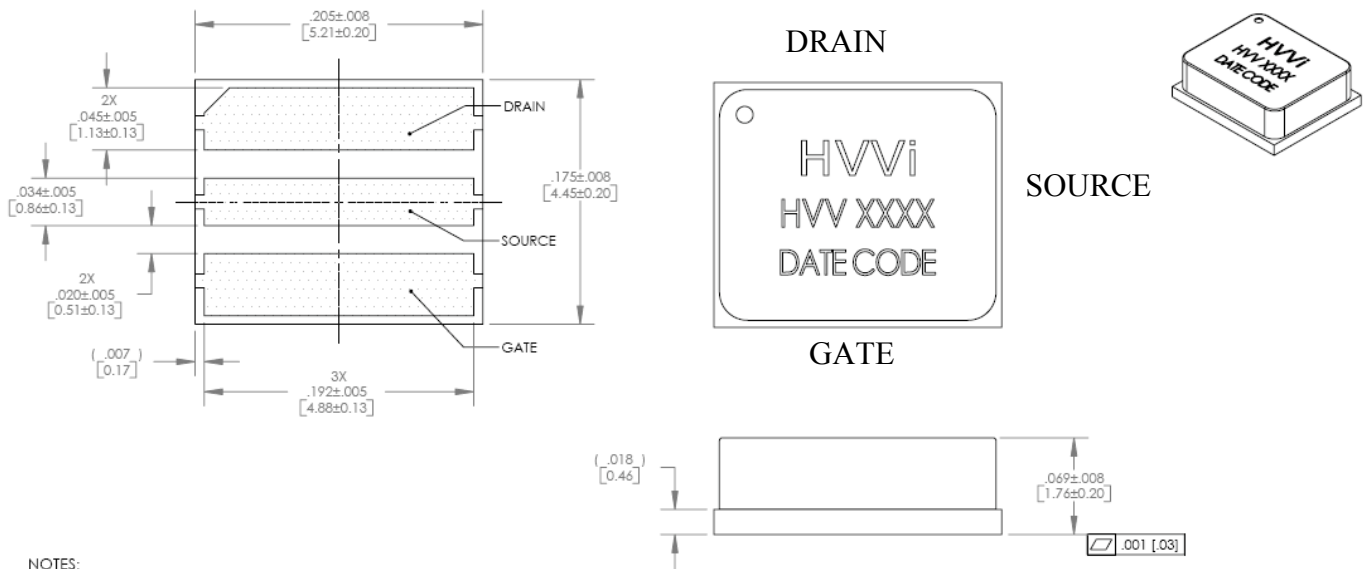
The HVV1011-035 device is capable of withstanding an output load mismatch corresponding to a 20:1 VSWR at all phase angles and rated output power and operating voltage across the frequency band of operation

| Symbol | Parameter | Test Condition | Max | Units |
|------------------|-------------------------|----------------|------|-------|
| LMT ¹ | Load Mismatch Tolerance | F = 1060MHz | 20:1 | VSWR |

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PACKAGE DIMENSIONS



NOTES:
T. HATCHED AREA WAS METALIZED AND PLATED.

Note: Drawing is not actual size.

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