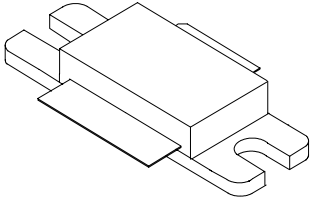




1011LD110

110 Watts, 32 Volts

Pulsed Avionics 1030 to 1090 MHz
LDMOS FET

| | |
|--|--|
| <p>GENERAL DESCRIPTION</p> <p>The 1011LD110 is a COMMON SOURCE N-Channel enhancement mode lateral MOSFET capable of providing 110 W_{pk} of RF power from 1030 to 1090 MHz. The device is nitride passivated and utilizes gold metallization to ensure highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p> | <p>CASE OUTLINE 55QZ-1 (Common Source)</p>  |
| <p>ABSOLUTE MAXIMUM RATINGS</p> <p>Power Dissipation</p> <p>Device Dissipation @25°C (P_d) 300 W</p> <p>Voltage and Current</p> <p>Drain-Source (V_{DSS}) 75V</p> <p>Gate-Source (V_{GS}) ± 20V</p> <p>Temperatures</p> <p>Storage Temperature -65 to +150°C</p> <p>Operating Junction Temperature +200°C</p> | |

ELECTRICAL CHARACTERISTICS @ 25°C

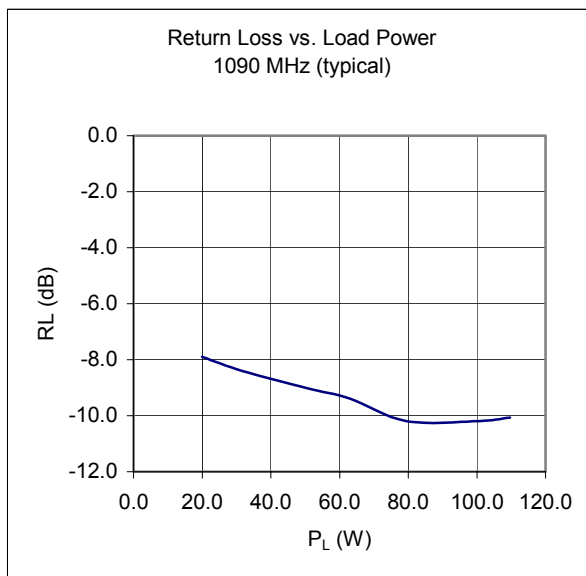
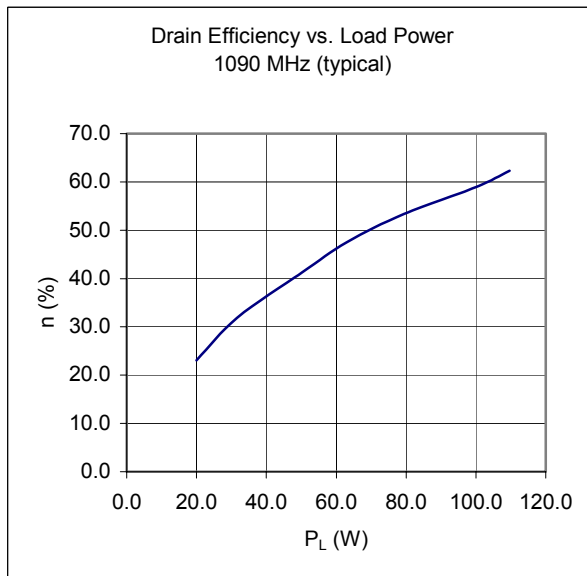
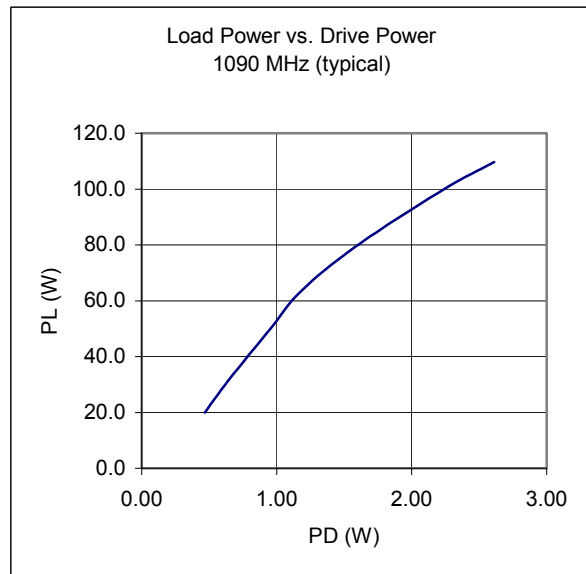
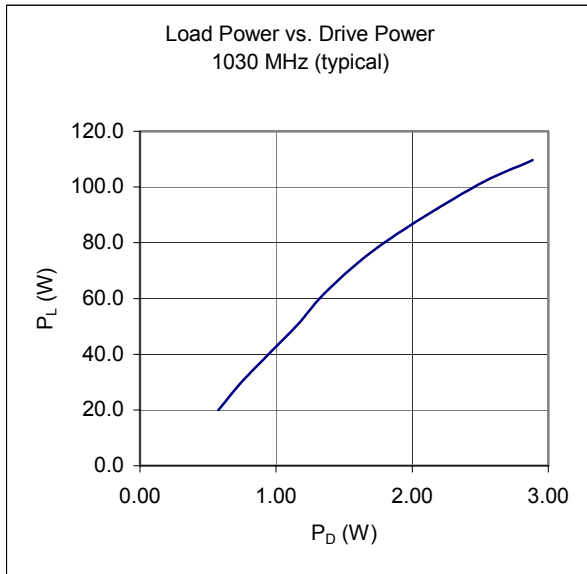
| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------------------|------------------------------|---|-----|-----|------|-------|
| BV _{dss} | Drain-Source Breakdown | V _{gs} = 0V, I _d = 10mA | 75 | | | V |
| I _{dss} | Drain-Source Leakage Current | V _{ds} = 32V, V _{gs} = 0V | | | 5 | μA |
| I _{gss} | Gate-Source Leakage Current | V _{gs} = 10V, V _{ds} = 0V | | | 1 | μA |
| V _{gs(th)} | Gate Threshold Voltage | V _{ds} = 10V, I _d = 20 mA | 3 | | 6 | V |
| V _{ds(on)} | Drain-Source On Voltage | V _{gs} = 10V, I _d = 1A | | | 0.3 | V |
| g _{FS} | Forward Transconductance | V _{ds} = 10V, I _d = 1A | | 1 | | S |
| θ _{JC} ¹ | Thermal Resistance | | | | 0.6° | °C/W |

FUNCTIONAL CHARACTERISTICS @ 25°C, V_{ds} = 32V, I_{dq} = 250mA

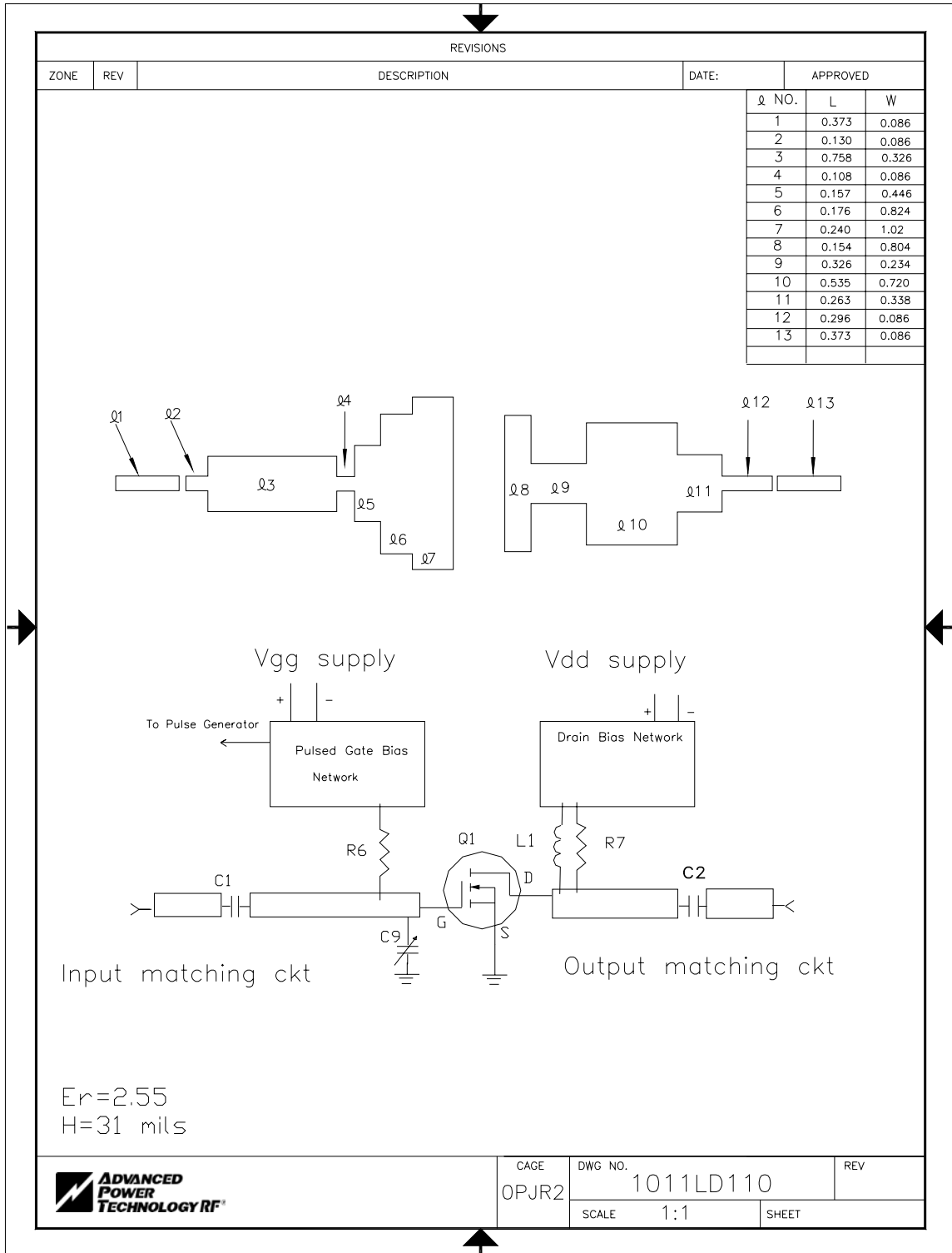
| | | | | | | |
|-----------------|--------------------------|--|----|----|-----|----|
| G _{PS} | Common Source Power Gain | Pulse width = 32 μs, LTDC=2% F=1030/1090 MHz, P _{out} = 110W | 13 | 15 | | dB |
| P _d | Pulse Droop | | | | 0.5 | dB |
| η _d | Drain Efficiency | F = 1030 MHz, P _{out} = 110W | 45 | 50 | | % |
| ψ | Load Mismatch | F = 1090 MHz, P _{out} = 110W | | | 3:1 | |

NOTES: 1. At rated output power and pulse conditions
2. Pulse Format 1: 32μs, 2% Long Term Duty Factor

Rev. B - Apr 2004



1011LD110



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