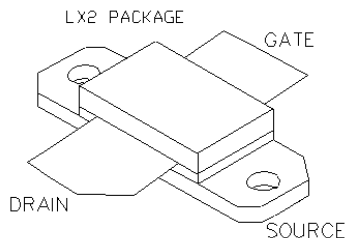




General Description

Silicon VDMOS and LDMOS transistors designed specifically for broadband RF applications. Suitable for Military Radios, Cellular and Paging Amplifier Base Stations, Broadcast FM/AM, MRI, Laser Driver and others.

"Polyfet"TM process features low feedback and output capacitances, resulting in high F_T transistors with high input impedance and high efficiency.



SILICON GATE ENHANCEMENT MODE

RF POWER LDMOS TRANSISTOR

45.0 Watts Single Ended

Package Style LX2

HIGH EFFICIENCY, LINEAR

HIGH GAIN, LOW NOISE

ROHS COMPLIANT

ABSOLUTE MAXIMUM RATINGS (T = 25 °C)

| Total Device Dissipation | Junction to Case Thermal Resistance | Maximum Junction Temperature | Storage Temperature | DC Drain Current | Drain to Gate Voltage | Drain to Source Voltage | Gate to Source Voltage |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 220 Watts | 0.75 °C/W | 200 °C | -65 °C to 150 °C | 22.0 A | 70 V | 70 V | 20 V |

RF CHARACTERISTICS (45.0 WATTS OUTPUT)

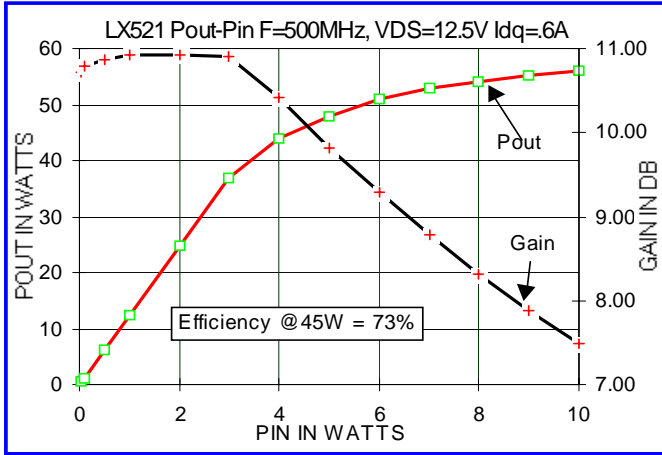
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|--------------------------|-----|-----|------|----------|---|
| Gps | Common Source Power Gain | 10 | | | dB | Idq = 0.80 A, Vds = 12.5 V, F = 500 MHz |
| η | Drain Efficiency | | 50 | | % | Idq = 0.80 A, Vds = 12.5 V, F = 500 MHz |
| VSWR | Load Mismatch Tolerance | | | 10:1 | Relative | Idq = 0.80 A, Vds = 12.5 V, F = 500 MHz |

ELECTRICAL CHARACTERISTICS (EACH SIDE)

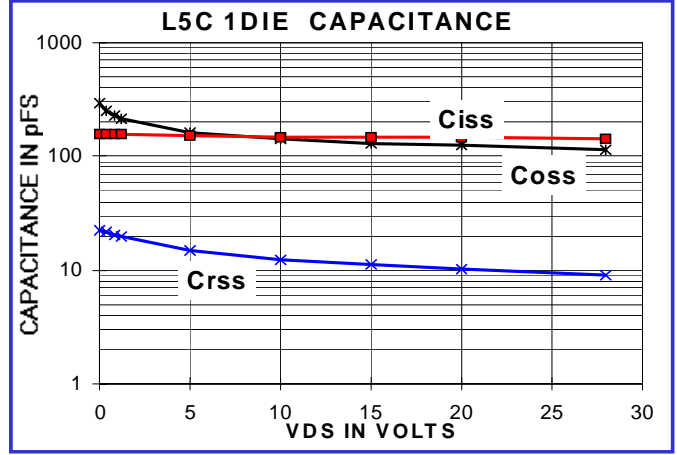
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|------------------------------------|-----|-------|-----|-------|--------------------------------|
| Bvdss | Drain Breakdown Voltage | 36 | | | V | Ids = 25.00 mA, Vgs = 0V |
| Idss | Zero Bias Drain Current | | | 1.0 | mA | Vds = 12.5 V, Vgs = 0V |
| Igss | Gate Leakage Current | | | 1 | uA | Vds = 0V Vgs = 30V |
| Vgs | Gate Bias for Drain Current | 2 | | 5 | V | Ids = 0.30 A, Vgs = Vds |
| gM | Forward Transconductance | | 5.1 | | Mho | Vds = 10V, Vgs = 5V |
| Rdson | Saturation Resistance | | 0.20 | | Ohm | Vgs = 20V, Ids = 46.00 A |
| Idsat | Saturation Current | | 39.00 | | Amp | Vgs = 20V, Vds = 10V |
| Ciss | Common Source Input Capacitance | | 150.0 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |
| Crss | Common Source Feedback Capacitance | | 7.5 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |
| Coss | Common Source Output Capacitance | | 100.0 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |

LX521

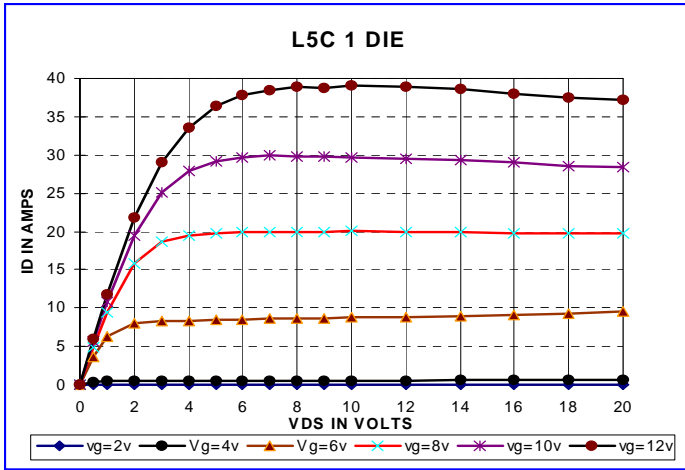
POUT VS PIN GRAPH



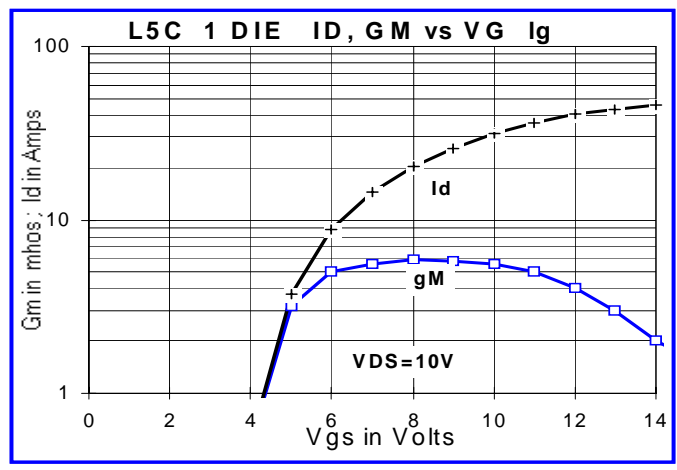
CAPACITANCE VS VOLTAGE



IV CURVE



ID & GM VS VGS



Zin Zout

| LX521 Vdd=12.5V Idq=600mA Pout=40W | | | | | |
|------------------------------------|-----------|-------|--------|--------|--------|
| Freq(MHz) | | 50 | 150 | 300 | 500 |
| Zin | Real | 0.7 | 0.8 | 1.2 | 1.5 |
| | Imaginary | -j17 | -j5.5 | -j2.7 | j1.6 |
| Zout | Real | 3.17 | 1.28 | 1 | 0.88 |
| | Imaginary | -j0.6 | -j0.74 | -j0.66 | +j0.25 |

PACKAGE DIMENSIONS IN INCHES

