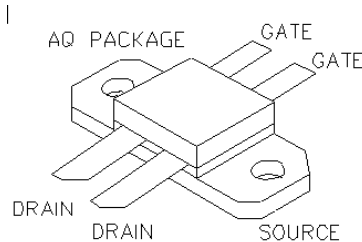




General Description

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

20.0 Watts Push - Pull

Package Style AQ

HIGH EFFICIENCY, LINEAR

HIGH GAIN, LOW NOISE

ROHS COMPLIANT

ABSOLUTE MAXIMUM RATINGS ($T = 25^{\circ}\text{C}$)

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
80 Watts	1.80°C/W	200°C	-65°C to 150°C	8.0 A	36 V	36 V	20 V

RF CHARACTERISTICS (20.0 WATTS OUTPUT)

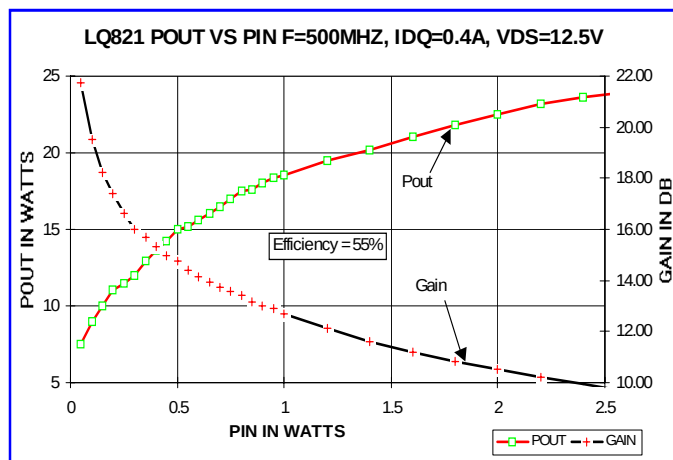
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	12			dB	$I_{dq} = 0.80\text{ A}$, $V_{ds} = 12.5\text{ V}$, $F = 500\text{ MHz}$
η	Drain Efficiency		55		%	$I_{dq} = 0.80\text{ A}$, $V_{ds} = 12.5\text{ V}$, $F = 500\text{ MHz}$
VSWR	Load Mismatch Tolerance			10:1	Relative	$I_{dq} = 0.80\text{ A}$, $V_{ds} = 12.5\text{ V}$, $F = 500\text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

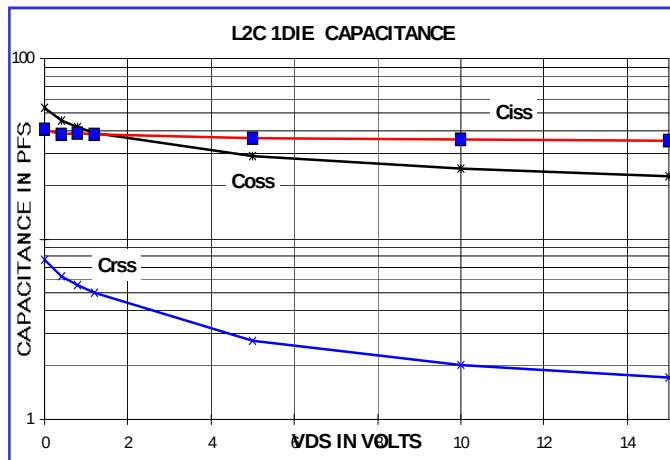
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	36			V	$I_{ds} = 0.10\text{ mA}$, $V_{gs} = 0\text{ V}$
Idss	Zero Bias Drain Current			1.0	mA	$V_{ds} = 12.5\text{ V}$, $V_{gs} = 0\text{ V}$
Igss	Gate Leakage Current			1	μA	$V_{ds} = 0\text{ V}$, $V_{gs} = 30\text{ V}$
Vgs	Gate Bias for Drain Current	2		5	V	$I_{ds} = 0.10\text{ A}$, $V_{gs} = V_{ds}$
gM	Forward Transconductance		1.0		Mho	$V_{ds} = 10\text{ V}$, $V_{gs} = 5\text{ V}$
Rdson	Saturation Resistance		0.60		Ohm	$V_{gs} = 20\text{ V}$, $I_{ds} = 3.00\text{ A}$
Idsat	Saturation Current		7.50		Amp	$V_{gs} = 20\text{ V}$, $V_{ds} = 10\text{ V}$
Ciss	Common Source Input Capacitance		33.0		pF	$V_{ds} = 12.5\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$
Crss	Common Source Feedback Capacitance		2.0		pF	$V_{ds} = 12.5\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$
Coss	Common Source Output Capacitance		24.0		pF	$V_{ds} = 12.5\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$

LQ821

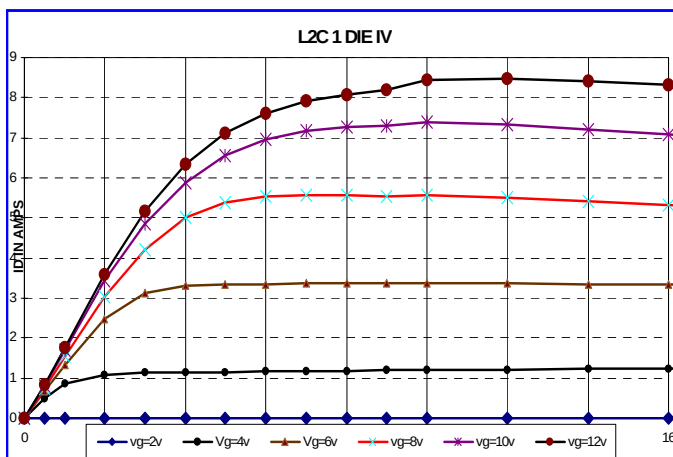
POUT VS PIN GRAPH



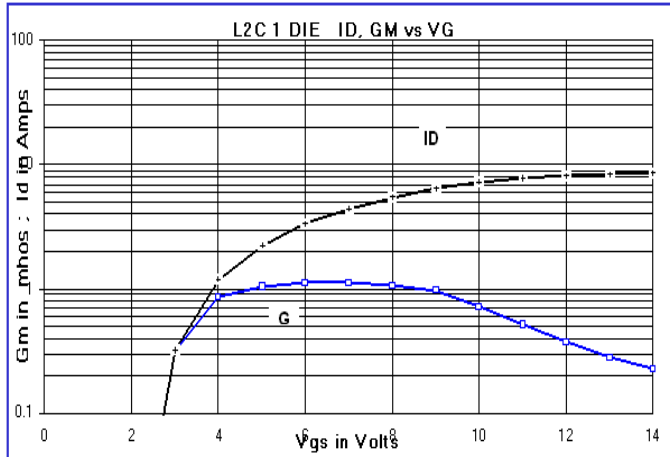
CAPACITANCE VS VOLTAGE



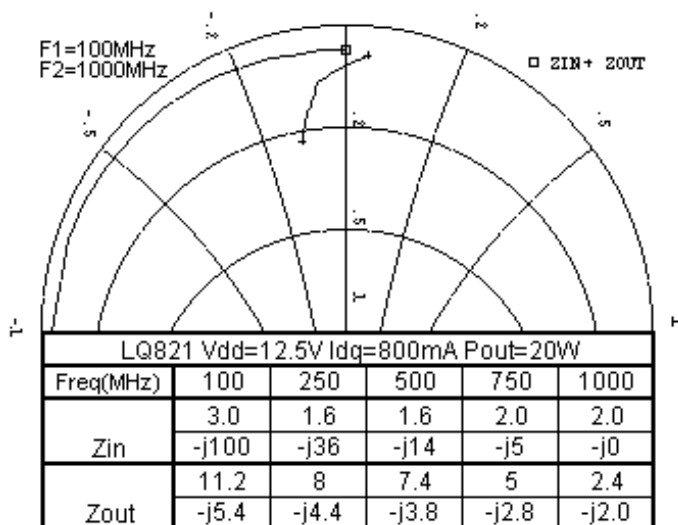
IV CURVE



ID & GM VS VGS



Zin Zout



PACKAGE DIMENSIONS IN INCHES

