GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

0809LD120

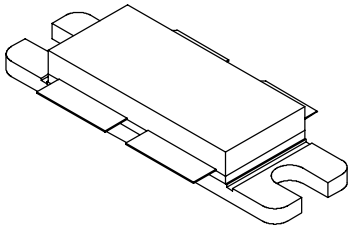
120 WATT, 28V, 1 GHz
LDMOS FET

PRELIMINARY ISSUE

GENERAL DESCRIPTION

The **0809LD120** is a common source N-Channel enhancement mode lateral MOSFET capable of providing 120 Watts of RF power from HF to 1 GHz. The device is nitride passivated and utilizes gold metallization to ensure high reliability and supreme ruggedness.

CASE OUTLINE
55QV
Common Source



ABSOLUTE MAXIMUM RATINGS

Power Dissipation

Device Dissipation @25°C (P_d)	300 W
Thermal Resistance (θ_{JC})	.6°C/W

Voltage and Current

Drain-Source (V_{DSS})	65V
Gate-Source (V_{GS})	±20V

Temperatures

Storage Temperature	-65 to +200°C
Operating Junction Temperature	+200°C

ELECTRICAL CHARACTERISTICS @ 25°C PER SIDE

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_{dss}	Drain-Source Breakdown	V_{gs} = 0V, I_d = 2ma	65	70		V
I_{dss}	Drain-Source Leakage Current	V_{ds} = 28V, V_{gs}= 0V			1	µA
I_{gss}	Gate-Source Leakage Current	V_{gs} = 20V, V_{ds} = 0V			1	µA
$V_{gs(th)}$	Gate Threshold Voltage	V_{ds} = 10V, I_d = 100ma	2	4	5	V
$V_{ds(on)}$	Drain-Source On Voltage	V_{gs} = 10V, I_d = 3A		0.7		V
g_{FS}	Forward Transconductance	V_{ds} = 10V, I_d = 3A		2.2		S
C_{rss}	Reverse Transfer Capacitance	V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz		5		pF
C_{oss}	Output Capacitance	V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz		60		pF

This part is input matched.

FUNCTIONAL CHARACTERISTICS @ 25°C

G_{PS}	Common Source Power Gain	V_{ds} = 28V, I_{dq} = 0.6A, F = 900MHz, P_{out} = 120W		13		dB
η_d	Drain Efficiency	V_{ds} = 28V, I_{dq} = 0.6A, F = 900MHz, P_{out} = 120W		50		%
IMD_3	Intermodulation Distortion, 3rd Order	V_{ds} = 28V, I_{dq} = 0.6A, P_{out}=120W PEP, F_1 = 900 MHz, F_2 = 900.1 MHz		-30		dBc
Ψ	Load Mismatch	V_{ds} = 28V, I_{dq} = 0.6A, F = 900MHz, P_{out} = 120W			5:1	

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