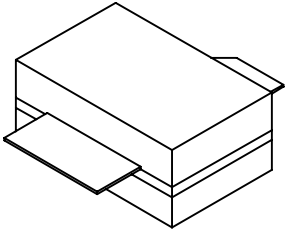


# 0809LD30P

## 30 WATT, 28V, 1 GHz

### LDMOS FET

## PRELIMINARY ISSUE

|   |   |
|---|---|
| <p><b>GENERAL DESCRIPTION</b></p> <p>The <b>0809LD30P</b> is a common source N-Channel enhancement mode lateral MOSFET capable of providing 30 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.</p>  | <p><b>CASE OUTLINE</b><br/><b>55QU</b><br/><b>Common Source</b></p>  |
| <p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p><b>Power Dissipation</b></p> <p>Device Dissipation @25°C (<math>P_d</math>)                      110 W<br/>Thermal Resistance (<math>\theta_{JC}</math>)                                1.5°C/W</p> <p><b>Voltage and Current</b></p> <p>Drain-Source (<math>V_{DSS}</math>)                                        65V<br/>Gate-Source (<math>V_{GS}</math>)                                        ±20V</p> <p><b>Temperatures</b></p> <p>Storage Temperature                                        -65 to +200°C<br/>Operating Junction Temperature                        +200°C</p> |   |

### ELECTRICAL CHARACTERISTICS @ 25°C

| SYMBOL       | CHARACTERISTICS              | TEST CONDITIONS                        | MIN | TYP | MAX | UNITS   |
|--------------|------------------------------|--|-----|-----|-----|---------|
| $BV_{dss}$   | Drain-Source Breakdown       | $V_{gs} = 0V, I_d = 2ma$               | 65  | 70  |     | V       |
| $I_{dss}$    | Drain-Source Leakage Current | $V_{ds} = 28V, V_{gs} = 0V$            |     |     | 1   | $\mu A$ |
| $I_{gss}$    | Gate-Source Leakage Current  | $V_{gs} = 20V, V_{ds} = 0V$            |     |     | 1   | $\mu A$ |
| $V_{gs(th)}$ | Gate Threshold Voltage       | $V_{ds} = 10V, I_d = 10ma$             | 2   | 4   | 5   | V       |
| $V_{ds(on)}$ | Drain-Source On Voltage      | $V_{gs} = 10V, I_d = 2A$               |     | 1.0 |     | V       |
| $g_{FS}$     | Forward Transconductance     | $V_{ds} = 10V, I_d = 3A$               |     | 1.4 |     | S       |
| $C_{iss}$    | Input Capacitance            | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |     | 60  |     | pF      |
| $C_{rss}$    | Reverse Transfer Capacitance | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |     | 2.5 |     | pF      |
| $C_{oss}$    | Output Capacitance           | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |     | 32  |     | pF      |

### FUNCTIONAL CHARACTERISTICS @ 25°C

|          |  |  |  |     |      |     |
|----------|--|--|--|-----|------|-----|
| $G_{PS}$ | Common Source Power Gain                             | $V_{ds} = 28V, I_{dq} = 0.15A,$<br>$F = 900MHz, P_{out} = 30W$                               |  | 14  |      | dB  |
| $\eta_d$ | Drain Efficiency                                     | $V_{ds} = 28V, I_{dq} = 0.15A,$<br>$F = 900MHz, P_{out} = 30W$                               |  | 50  |      | %   |
| $IMD_3$  | Intermodulation Distortion,<br>3 <sup>rd</sup> Order | $V_{ds} = 28V, I_{dq} = 0.3A,$<br>$P_{out} = 30W_{PEP}, F_1 = 900 MHz,$<br>$F_2 = 900.1 MHz$ |  | -30 |      | dBc |
| $\Psi$   | Load Mismatch  | $V_{ds} = 28V, I_{dq} = 0.15A,$<br>$F = 900MHz, P_{out} = 30W$                               |  |     | 10:1 |     |