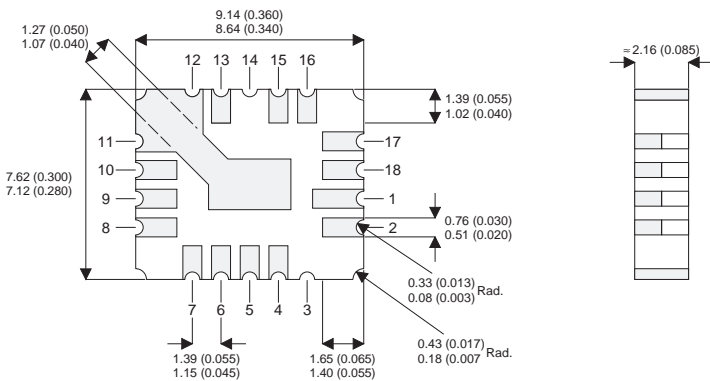


MECHANICAL DATA

Dimensions in mm (inches)



LCC4

| MOSFET | TRANSISTOR | PINS |
|--------|------------|---------------------|
| GATE | BASE | 4,5 |
| DRAIN | COLLECTOR | 1,2,15,16,17,18 |
| SOURCE | EMITTER | 6,7,8,9,10,11,12,13 |

**P-CHANNEL
POWER MOSFET**

V_{DSS} **-100V**
 $I_{D(cont)}$ **-6.1A**
 $R_{DS(on)}$ **0.345Ω**

FEATURES

- SURFACE MOUNT
- SMALL FOOTPRINT
- HERMETICALLY SEALED
- DYNAMIC dv/dt RATING
- AVALANCHE ENERGY RATING
- SIMPLE DRIVE REQUIREMENTS
- LIGHT WEIGHT

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

| | | |
|----------------|------------------------------------------------------|----------------|
| V_{GS} | Gate – Source Voltage | ±20V |
| I_D | Continuous Drain Current @ $T_{case} = 25^{\circ}C$ | - 6.1A |
| I_D | Continuous Drain Current @ $T_{case} = 100^{\circ}C$ | - 3.8A |
| I_{DM} | Pulsed Drain Current | - 24A |
| P_D | Power Dissipation @ $T_{case} = 25^{\circ}C$ | 22W |
| | Linear Derating Factor | 0.17W/°C |
| E_{AS} | Single Pulse Avalanche Energy ² | 92mJ |
| dv/dt | Peak Diode Recovery ³ | - 5.5V/ns |
| T_J, T_{stg} | Operating and Storage Temperature Range | - 55 to +150°C |
| | Surface Temperature (for 5 sec). | 300°C |

ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------|-------|-----------------------------|
| STATIC ELECTRICAL RATINGS | | | | | |
| BV_{DSS} | Drain – Source Breakdown Voltage | $V_{\text{GS}} = 0$ $I_{\text{D}} = -1\text{mA}$ | -100 | | V |
| $\frac{\Delta BV_{\text{DSS}}}{\Delta T_{\text{J}}}$ | Temperature Coefficient of Breakdown Voltage | Reference to 25°C $I_{\text{D}} = -1\text{mA}$ | | -0.10 | $\text{V}/^{\circ}\text{C}$ |
| $R_{\text{DS(on)}}$ | Static Drain – Source On–State Resistance ¹ | $V_{\text{GS}} = -10\text{V}$ $I_{\text{D}} = -3.8\text{A}$ | | 0.30 | Ω |
| | | $V_{\text{GS}} = -10\text{V}$ $I_{\text{D}} = -6.1\text{A}$ | | 0.345 | |
| $V_{\text{GS(th)}}$ | Gate Threshold Voltage | $V_{\text{DS}} = V_{\text{GS}}$ $I_{\text{D}} = -250\text{mA}$ | -2 | -4 | V |
| g_{fs} | Forward Transconductance ¹ | $V_{\text{DS}} \geq -15\text{V}$ $I_{\text{DS}} = -3.8\text{A}$ | 2.5 | | $\text{S} (\bar{V})$ |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{\text{GS}} = 0$ $V_{\text{DS}} = 0.8BV_{\text{DSS}}$ $T_{\text{J}} = 125^{\circ}\text{C}$ | | -25 | μA |
| | | | | -250 | |
| I_{GSS} | Forward Gate – Source Leakage | $V_{\text{GS}} = -20\text{V}$ | | -100 | nA |
| I_{GSS} | Reverse Gate – Source Leakage | $V_{\text{GS}} = 20\text{V}$ | | 100 | |
| DYNAMIC CHARACTERISTICS | | | | | |
| C_{iss} | Input Capacitance | $V_{\text{GS}} = 0$ | | 800 | pF |
| C_{oss} | Output Capacitance | $V_{\text{DS}} = -25\text{V}$ | | 350 | |
| C_{rss} | Reverse Transfer Capacitance | $f = 1\text{MHz}$ | | 125 | |
| Q_{g} | Total Gate Charge | $V_{\text{GS}} = -10\text{V}$ | 14.7 | 38.4 | nC |
| Q_{gs} | Gate – Source Charge | $I_{\text{D}} = -6.1\text{A}$ | 1.0 | 7.1 | |
| Q_{gd} | Gate – Drain (“Miller”) Charge | $V_{\text{DS}} = 0.5BV_{\text{DSS}}$ | 2.0 | 21 | |
| $t_{\text{d(on)}}$ | Turn–On Delay Time | $V_{\text{DD}} = -50\text{V}$ $I_{\text{D}} = -6.1\text{A}$ $R_{\text{G}} = 7.5\Omega$ | | 60 | ns |
| t_{r} | Rise Time | | | 140 | |
| $t_{\text{d(off)}}$ | Turn–Off Delay Time | | | 140 | |
| t_{f} | Fall Time | | | 140 | |
| SOURCE – DRAIN DIODE CHARACTERISTICS | | | | | |
| I_{S} | Continuous Source Current | | | -1.6 | A |
| I_{SM} | Pulse Source Current ² | | | -24 | |
| V_{SD} | Diode Forward Voltage ¹ | $I_{\text{S}} = -1.6\text{A}$ $T_{\text{J}} = 25^{\circ}\text{C}$ $V_{\text{GS}} = 0$ | | -4.7 | V |
| t_{rr} | Reverse Recovery Time | $I_{\text{F}} = -6.1\text{A}$ $T_{\text{J}} = 25^{\circ}\text{C}$ | | 250 | ns |
| Q_{rr} | Reverse Recovery Charge ¹ | $d_{\text{i}} / d_{\text{t}} \leq -100\text{A}/\mu\text{s}$ $V_{\text{DD}} \leq -50\text{V}$ | | 3.0 | μC |
| t_{on} | Forward Turn–On Time | | Negligible | | |
| PACKAGE CHARACTERISTICS | | | | | |
| L_{D} | Internal Drain Inductance (measured from 6mm down drain lead to centre of die) | | 1.8 | | nH |
| L_{S} | Internal Source Inductance (from 6mm down source lead to source bond pad) | | 4.3 | | |
| THERMAL CHARACTERISTICS | | | | | |
| $R_{\theta\text{JC}}$ | Thermal Resistance Junction – Case | | | 5.8 | $^{\circ}\text{C}/\text{W}$ |
| $R_{\theta\text{JPC}}$ | Thermal Resistance Junction – PC Board | | | 19 | |

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.



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