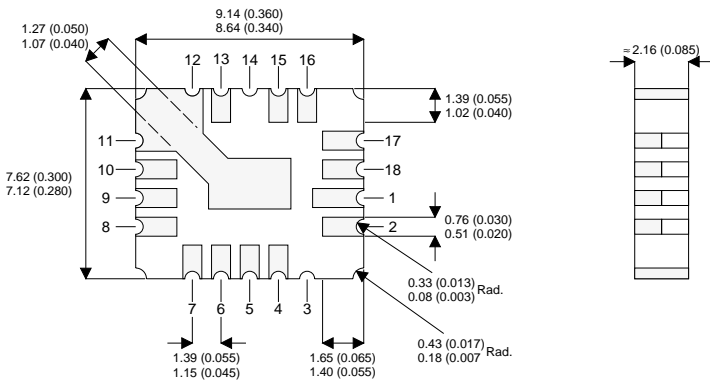


**MECHANICAL DATA**

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

**N-CHANNEL  
POWER MOSFET**

$V_{DSS}$	<b>100V</b>
$I_{D(cont)}$	<b>3.1A</b>
$R_{DS(on)}$	<b>0.6Ω</b>

**FEATURES**

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

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

$V_{GS}$	Gate – Source Voltage	$\pm 20V$
$I_D$	Continuous Drain Current ( $V_{GS} = 10V, T_{case} = 25^{\circ}C$ )	3.1A
$I_D$	Continuous Drain Current ( $V_{GS} = 10V, T_{case} = 100^{\circ}C$ )	2.0A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	12A
$P_D$	Power Dissipation @ $T_{case} = 25^{\circ}C$	11W
	Linear Derating Factor	0.09W/ $^{\circ}C$
$E_{AS}$	Single Pulse Avalanche Energy <sup>2</sup>	68mJ
dv/dt	Peak Diode Recovery <sup>3</sup>	5.5V/ns
$T_J, T_{stg}$	Operating and Storage Temperature Range	-55 to +150 $^{\circ}C$
	Surface Temperature (for 5 sec).	300 $^{\circ}C$

**Notes**

- 1) Pulse Test: Pulse Width  $\leq 300\mu s, \delta \leq 2\%$
- 2) @  $V_{DD} = 50V, L \geq 570\mu H, R_G = 25\Omega, Peak I_L = 14A, Starting T_J = 25^{\circ}C$
- 3) @  $I_{SD} \leq 14A, di/dt \leq 140A/\mu s, V_{DD} \leq BV_{DSS}, T_J \leq 150^{\circ}C, Suggested R_G = 7.5\Omega$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>STATIC ELECTRICAL RATINGS</b>					
$BV_{\text{DSS}}$ 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 $25^{\circ}\text{C}$ $I_{\text{D}} = 1\text{mA}$		0.10		$\text{V}/^{\circ}\text{C}$
$R_{\text{DS(on)}}$ Static Drain – Source On-State Resistance <sup>1</sup>	$V_{\text{GS}} = 10\text{V}$ $I_{\text{D}} = 2\text{A}$			0.6	$\Omega$
	$V_{\text{GS}} = 10\text{V}$ $I_{\text{D}} = 3.1\text{A}$			0.69	
$V_{\text{GS(th)}}$ Gate Threshold Voltage	$V_{\text{DS}} = V_{\text{GS}}$ $I_{\text{D}} = 250\text{mA}$	2		4	V
$g_{\text{fs}}$ Forward Transconductance <sup>1</sup>	$V_{\text{DS}} \geq 15\text{V}$ $I_{\text{DS}} = 2\text{A}$	0.8			S ( $\bar{\cup}$ )
$I_{\text{DSS}}$ Zero Gate Voltage Drain Current	$V_{\text{GS}} = 0$ $V_{\text{DS}} = 0.8BV_{\text{DSS}}$ $T_{\text{J}} = 125^{\circ}\text{C}$			25	$\mu\text{A}$
				250	
$I_{\text{GSS}}$ Forward Gate – Source Leakage	$V_{\text{GS}} = 20\text{V}$			100	nA
$I_{\text{GSS}}$ Reverse Gate – Source Leakage	$V_{\text{GS}} = -20\text{V}$			-100	
<b>DYNAMIC CHARACTERISTICS</b>					
$C_{\text{iss}}$ Input Capacitance	$V_{\text{GS}} = 0$		180		pF
$C_{\text{oss}}$ Output Capacitance	$V_{\text{DS}} = 25\text{V}$		82		
$C_{\text{riss}}$ Reverse Transfer Capacitance	$f = 1\text{MHz}$		15		
$Q_{\text{g}}$ Total Gate Charge	$V_{\text{GS}} = 10\text{V}$	4.1		6.5	nC
$Q_{\text{gs}}$ Gate – Source Charge	$I_{\text{D}} = 3.1\text{A}$	0.4		1.6	
$Q_{\text{gd}}$ Gate – Drain (“Miller”) Charge	$V_{\text{DS}} = 0.5BV_{\text{DSS}}$	1.4		3.5	
$t_{\text{d(on)}}$ Turn–On Delay Time	$V_{\text{DD}} = 50\text{V}$ $I_{\text{D}} = 3.1\text{A}$ $R_{\text{G}} = 7.5\Omega$			15	ns
$t_{\text{r}}$ Rise Time				25	
$t_{\text{d(off)}}$ Turn–Off Delay Time				25	
$t_{\text{f}}$ Fall Time				20	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>					
$I_{\text{S}}$ Continuous Source Current				3.1	A
$I_{\text{SM}}$ Pulse Source Current <sup>2</sup>				12	
$V_{\text{SD}}$ Diode Forward Voltage <sup>1</sup>	$I_{\text{S}} = 3.1\text{A}$ $T_{\text{J}} = 25^{\circ}\text{C}$ $V_{\text{GS}} = 0$			1.5	V
$t_{\text{rr}}$ Reverse Recovery Time	$I_{\text{F}} = 7.4\text{A}$ $T_{\text{J}} = 25^{\circ}\text{C}$			180	ns
$Q_{\text{rr}}$ Reverse Recovery Charge <sup>1</sup>	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{\text{DD}} \leq 50\text{V}$			2.0	$\mu\text{C}$
$t_{\text{on}}$ Forward Turn–On Time		Negligible			
<b>THERMAL CHARACTERISTICS</b>					
$R_{\theta\text{JC}}$ Thermal Resistance Junction – Case				11	$^{\circ}\text{C}/\text{W}$
$R_{\theta\text{JPC}}$ Thermal Resistance Junction – PC Board				27	

**Notes**

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