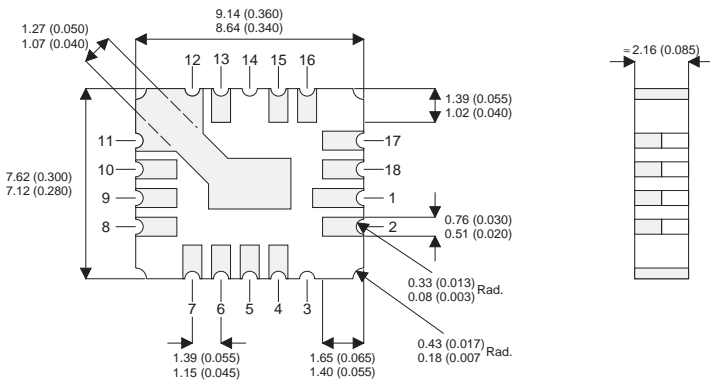


**MECHANICAL DATA**

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<sub>DSS</sub> 100V**  
**I<sub>D(cont)</sub> 7.44A**  
**R<sub>DS(on)</sub> 0.207Ω**

**FEATURES**

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

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C unless otherwise stated)

V <sub>GS</sub>	Gate – Source Voltage	±20V
I <sub>D</sub>	Continuous Drain Current (V <sub>GS</sub> = 10V , T <sub>case</sub> = 25°C)	7.4A
I <sub>D</sub>	Continuous Drain Current (V <sub>GS</sub> = 10V , T <sub>case</sub> = 100°C)	4.7A
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	30A
P <sub>D</sub>	Power Dissipation @ T <sub>case</sub> = 25°C	22W
	Linear Derating Factor	0.17W/°C
E <sub>AS</sub>	Single Pulse Avalanche Energy <sup>2</sup>	75mJ
dv/dt	Peak Diode Recovery <sup>3</sup>	5.5V/ns
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Temperature Range	-55 to +150°C
	Surface Temperature ( for 5 sec).	300°C

**Notes**

- 1) Pulse Test: Pulse Width ≤ 300μs, δ ≤ 2%
- 2) @ V<sub>DD</sub> = 50V , L ≥ 570μH , R<sub>G</sub> = 25Ω , Peak I<sub>L</sub> = 14A , Starting T<sub>J</sub> = 25°C
- 3) @ I<sub>SD</sub> ≤ 14A , di/dt ≤ 140A/μs , V<sub>DD</sub> ≤ BV<sub>DSS</sub> , T<sub>J</sub> ≤ 150°C , Suggested R<sub>G</sub> = 7.5Ω

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>STATIC ELECTRICAL RATINGS</b>					
$BV_{DSS}$	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1mA$	100		V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to $25^{\circ}C$ $I_D = 1mA$		0.10	$V/^{\circ}C$
$R_{DS(on)}$	Static Drain – Source On-State Resistance <sup>1</sup>	$V_{GS} = 10V$ $I_D = 4.7A$		0.18	$\Omega$
		$V_{GS} = 10V$ $I_D = 7.4A$		0.207	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250mA$	2	4	V
$g_{fs}$	Forward Transconductance <sup>1</sup>	$V_{DS} \geq 15V$ $I_{DS} = 4.7A$	3		S ( $\bar{O}$ )
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8BV_{DSS}$ $T_J = 125^{\circ}C$		25	$\mu A$
				250	
$I_{GSS}$	Forward Gate – Source Leakage	$V_{GS} = 20V$		100	nA
$I_{GSS}$	Reverse Gate – Source Leakage	$V_{GS} = -20V$		-100	
<b>DYNAMIC CHARACTERISTICS</b>					
$C_{iss}$	Input Capacitance	$V_{GS} = 0$		650	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 25V$		240	
$C_{riss}$	Reverse Transfer Capacitance	$f = 1MHz$		44	
$Q_g$	Total Gate Charge	$V_{GS} = 10V$	12.8	28.5	nC
$Q_{gs}$	Gate – Source Charge	$I_D = 7.4A$	1.0	6.3	
$Q_{gd}$	Gate – Drain (“Miller”) Charge	$V_{DS} = 0.5BV_{DSS}$	3.8	16.6	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 50V$ $I_D = 7.4A$ $R_G = 7.5\Omega$		30	ns
$t_r$	Rise Time			75	
$t_{d(off)}$	Turn-Off Delay Time			40	
$t_f$	Fall Time			45	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>					
$I_S$	Continuous Source Current			7.4	A
$I_{SM}$	Pulse Source Current <sup>2</sup>			30	
$V_{SD}$	Diode Forward Voltage <sup>1</sup>	$I_S = 7.4A$ $T_J = 25^{\circ}C$ $V_{GS} = 0$		1.5	V
$t_{rr}$	Reverse Recovery Time	$I_F = 7.4A$ $T_J = 25^{\circ}C$		300	ns
$Q_{rr}$	Reverse Recovery Charge <sup>1</sup>	$d_i / d_t \leq 100A/\mu s$ $V_{DD} \leq 50V$		3.0	$\mu C$
$t_{on}$	Forward Turn-On Time		Negligible		
<b>PACKAGE CHARACTERISTICS</b>					
$L_D$	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		
<b>THERMAL CHARACTERISTICS</b>					
$R_{\theta JC}$	Thermal Resistance Junction – Case			5.8	$^{\circ}C/W$
$R_{\theta JPC}$	Thermal Resistance Junction – PC Board			19	

**Notes**

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