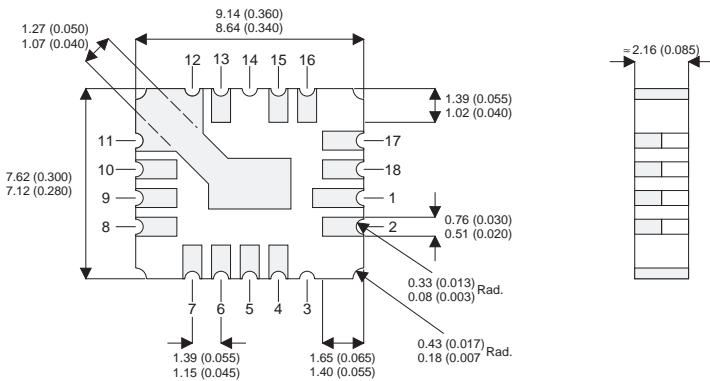


MECHANICAL DATA

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} 100V
I_{D(cont)} 7.44A
R_{DS(on)} 0.207Ω

FEATURES

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

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V _{GS}	Gate – Source Voltage	±20V
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 25°C)	7.4A
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 100°C)	4.7A
I _{DM}	Pulsed Drain Current ¹	30A
P _D	Power Dissipation @ T _{case} = 25°C	22W
	Linear Derating Factor	0.17W/°C
E _{AS}	Single Pulse Avalanche Energy ²	75mJ
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

Notes

- 1) Pulse Test: Pulse Width ≤ 300μs, δ ≤ 2%
- 2) @ V_{DD} = 50V , L ≥ 570μH , R_G = 25Ω , Peak I_L = 14A , Starting T_J = 25°C
- 3) @ I_{SD} ≤ 14A , di/dt ≤ 140A/μs , V_{DD} ≤ BV_{DSS} , T_J ≤ 150°C , Suggested R_G = 7.5Ω

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
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 ¹	$V_{GS} = 10V$ $I_D = 4.7A$		0.18	Ω
		$V_{GS} = 10V$ $I_D = 7.4A$		0.207	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250mA$	2	4	V
g_{fs}	Forward Transconductance ¹	$V_{DS} \geq 15V$ $I_{DS} = 4.7A$	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	μA
				250	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = 20V$		100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20V$		-100	
DYNAMIC CHARACTERISTICS					
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	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current			7.4	A
I_{SM}	Pulse Source Current ²			30	
V_{SD}	Diode Forward Voltage ¹	$I_S = 7.4A$ $T_J = 25^{\circ}C$ $V_{GS} = 0$		1.5	V
t_{rr}	Reverse Recovery Time	$I_F = 7.4A$ $T_J = 25^{\circ}C$		300	ns
Q_{rr}	Reverse Recovery Charge ¹	$d_i / d_t \leq 100A/\mu s$ $V_{DD} \leq 50V$		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					
$R_{\theta JC}$	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.



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