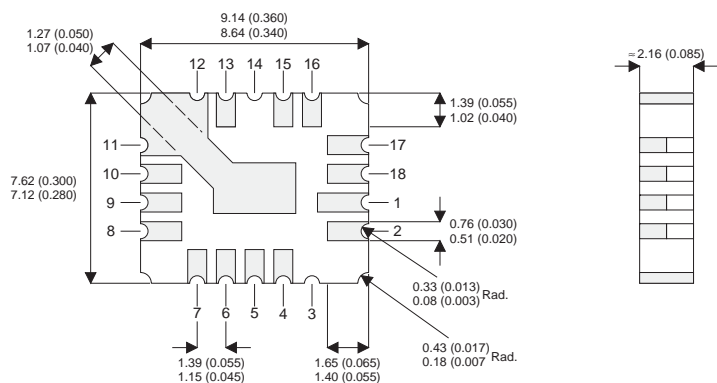


MECHANICAL DATA

Dimensions in mm (inches)



LCC4

GATE Pins 4,5
DRAIN Pins 1,2,15,16,17,18
SOURCE Pins 6,7,8,9,10,11,12,13

**N-CHANNEL
POWER MOSFET**

V_{DSS} **100V**
 $I_{D(cont)}$ **3.5A**
 $R_{DS(on)}$ **0.6Ω**

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 ($V_{GS} = 10V, T_{case} = 25^{\circ}C$)	3.5A
I_D	Continuous Drain Current ($V_{GS} = 10V, T_{case} = 100^{\circ}C$)	2.25A
I_{DM}	Pulsed Drain Current ¹	14A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	15W
	Linear Derating Factor	0.09W/ $^{\circ}C$
E_{AS}	Single Pulse Avalanche Energy ²	7.0mJ
dv/dt	Peak Diode Recovery ³	9.0V/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) @ $V_{DD} = 25V, Peak I_L = 3.1A, Starting T_J = 25^{\circ}C$
- 3) @ $I_{SD} \leq 3.1A, di/dt \leq 75A/\mu s, V_{DD} \leq BV_{DSS}, T_J \leq 150^{\circ}C, Suggested R_G = 7.5\Omega$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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 $25^{\circ}C$ $I_D = 1mA$		0.12	$V/^{\circ}C$
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = 10V$ $I_D = 2.25A$		0.6	Ω
		$V_{GS} = 10V$ $I_D = 3.5A$		0.69	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu A$	2	4	V
g_{fs}	Forward Transconductance ¹	$V_{DS} \geq 15V$ $I_{DS} = 2.25A$	0.8		S ($\bar{\sigma}$)
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	$V_{GS} = 0$ $V_{DS} = 25V$ $f = 1MHz$		190	pF
C_{oss}	Output Capacitance			86	
C_{riss}	Reverse Transfer Capacitance			13	
Q_g	Total Gate Charge	$V_{GS} = 10V$		6.6	nC
Q_{gs}	Gate – Source Charge	$I_D = 3.5A$		1.7	
Q_{gd}	Gate – Drain (“Miller”) Charge	$V_{DS} = 0.5BV_{DSS}$		3.5	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 50V$ $I_D = 3.1A$ $R_G = 7.5\Omega$		15	ns
t_r	Rise Time			25	
$t_{d(off)}$	Turn–Off Delay Time			25	
t_f	Fall Time			20	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current			3.5	A
I_{SM}	Pulse Source Current ²			14	
V_{SD}	Diode Forward Voltage ¹	$I_S = 3.5A$ $T_J = 25^{\circ}C$ $V_{GS} = 0$		1.5	V
t_{rr}	Reverse Recovery Time	$I_F = 3.5A$ $T_J = 25^{\circ}C$		180	ns
Q_{rr}	Reverse Recovery Charge ¹	$d_i / d_t \leq 100A/\mu s$ $V_{DD} \leq 50V$		2.0	μC
t_{on}	Forward Turn–On Time		Negligible		
THERMAL CHARACTERISTICS					
$R_{\theta JC}$	Thermal Resistance Junction – Case			8.3	$^{\circ}C/W$
$R_{\theta JPC}$	Thermal Resistance Junction – PC Board			27	

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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