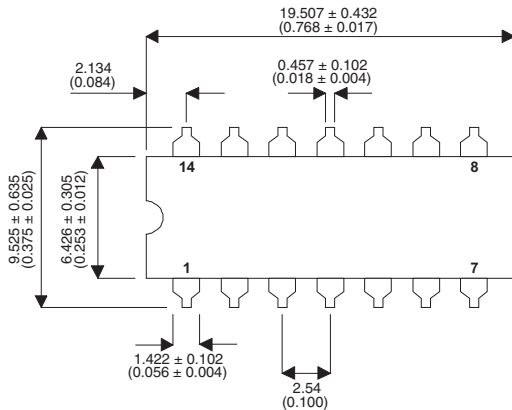


MECHANICAL DATA

Dimensions in mm (inches)



**14 LEAD DUAL IN LINE QUAD
N & P CHANNEL
POWER MOSFETS**

	BV_{DSS} ±100V	
	N-CHANNEL	P-CHANNEL
I_{D(cont)}	1A	-0.75A
R_{DS(on)}	0.7Ω	1.4Ω

FEATURES

- AVALANCHE ENERGY RATED
- HERMETICALLY SEALED
- DYNAMIC dv/dt RATING
- SIMPLE DRIVE REQUIREMENTS
- FOR AUTOMATIC INSERTION
- SIMPLE DRIVE REQUIREMENTS
- EASE OF PARALLELING
- 2 N-CHANNEL/2 P-CHANNEL CO-PACKAGED HEXFETS

N-CHANNEL	P-CHANNEL	N-CHANNEL	P-CHANNEL
1—Drain 1	5—Gate 2	8—Drain 3	12—Gate 4
2—Source 1	6—Source 2	9—Source 3	13—Source 4
3—Gate 1	7—Drain 2	10—Gate 3	14—Drain 4

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated) **N-CHANNEL** **P-CHANNEL**

Parameter	Description	N-CHANNEL	P-CHANNEL
V _{GS}	Gate – Source Voltage	±20V	±20V
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 25°C)	1.A	-0.75A
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 100°C)	0.6A	-0.5A
I _{DM}	Pulsed Drain Current	4A	-3A
P _D	Power Dissipation @ T _{case} = 25°C	1.4W	1.4W
	Linear Derating Factor	0.011W/°C	0.011W/°C
E _{AS}	Single Pulse Avalanche Energy ²	75mJ	75mJ
dv/dt	Peak Diode Recovery ³	5.5V/ns	-5.5V/ns
T _J , T _{stg}	Operating and Storage Temperature Range	-55 to 150°C	-55 to 150°C
R _{θJC}	Thermal Resistance Junction to Case	6.25°C/W	
R _{θJCA}	Thermal Resistance Junction-to-Ambient	175°C/W	

Notes

- 1) Pulse Test: Pulse Width ≤ 300μs, δ ≤ 2%
- 2) @ V_{DD} = 25V , L ≥ 112mH , R_G = 25Ω , Peak I_L = 1A , Starting T_J = 25°C
- 3) @ I_{SD} ≤ 1A , di/dt ≤ 75A/μs , V_{DD} ≤ BV_{DSS} , T_J ≤ 150°C , Suggested R_G = 24Ω

ELECTRICAL CHARACTERISTICS FOR N-CHANNEL ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
STATIC ELECTRICAL RATINGS						
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 1\text{mA}$	100	V	
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.13	$\text{V}/^{\circ}\text{C}$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance	$V_{GS} = 10\text{V}$	$I_D = 0.6\text{A}$		0.70	
		$V_{GS} = 10\text{V}$	$I_D = 1\text{A}$		0.80	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2	4	V
g_{fs}	Forward Transconductance	$V_{DS} \geq 15\text{V}$	$I_{DS} = 0.60\text{A}$	0.86	$\text{S}(\bar{v})$	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 0.8V_{DSS}$		25	μA
			$T_J = 125^{\circ}\text{C}$		250	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = 20\text{V}$			100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20\text{V}$			-100	nA
DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	$V_{GS} = 0$		180	pF	
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		82		
C_{riss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		15		
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$	$I_D = 1\text{A}$		15	nC
Q_{gs}	Gate – Source Charge	$V_{DS} = 0.5V_{DS}$			7.5	
Q_{gd}	Gate – Drain (“Miller”) Charge				7.5	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 50\text{V}$			20	ns
t_r	Rise Time	$I_D = 1\text{A}$			25	
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 24\Omega$			40	
t_f	Fall Time				40	
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current				1	A
I_{SM}	Pulse Source Current ²				4	
V_{SD}	Diode Forward Voltage ¹	$I_S = 1.0\text{A}$	$T_J = 25^{\circ}\text{C}$		1.5	V
		$V_{GS} = 0$				
t_{rr}	Reverse Recovery Time	$I_F = 1\text{A}$	$T_J = 25^{\circ}\text{C}$		200	ns
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$		$V_{DD} \leq 50\text{V}$	0.83	μC
t_{on}	Forward Turn–On Time				Negligible	
PACKAGE CHARACTERISTICS						
L_D	Internal Drain Inductance (from centre of drain pad to die)			4.0	nH	
L_S	Internal Source Inductance (from centre of source pad to end of source bond wire)			6.0		

Notes

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

ELECTRICAL CHARACTERISTICS FOR P-CHANNEL ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = -1\text{mA}$	-100	V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = -1\text{mA}$		0.098	$\text{V}/^{\circ}\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = -10\text{V}$	$I_D = -0.50\text{A}$		1.4
		$V_{GS} = -10\text{V}$	$I_D = -0.75\text{A}$		1.73
$V_{GS(th)}$	Gate Threshold Voltage ¹	$V_{DS} = V_{GS}$	$I_D = -250\mu\text{A}$	-2	-4
g_{fs}	Forward Transconductance	$V_{DS} \geq -15\text{V}$	$I_{DS} = -0.50\text{A}$	0.67	$\text{S}(\overline{\tau})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 0.8V_{DSS}$		-25
			$T_J = 125^{\circ}\text{C}$		-250
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = -20\text{V}$			-100
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = 20\text{V}$			-100
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0$		200	pF
C_{oss}	Output Capacitance	$V_{DS} = -25\text{V}$		85	
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		30	
Q_g	Total Gate Charge	$V_{GS} = -10\text{V}$	$I_D = -0.75\text{A}$		15
Q_{gs}	Gate – Source Charge	$V_{DS} = 0.5V_{DS}$			7
Q_{gd}	Gate – Drain (“Miller”) Charge				8
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = -50\text{V}$			30
t_r	Rise Time	$I_D = -0.75\text{A}$			60
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 24\Omega$			40
t_f	Fall Time				40
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				-0.75
I_{SM}	Pulse Source Current ²				-3
V_{SD}	Diode Forward Voltage	$I_S = -0.75\text{A}$	$T_J = 25^{\circ}\text{C}$		-5.5
		$V_{GS} = 0$			
t_{rr}	Reverse Recovery Time	$I_F = -0.75\text{A}$	$T_J = 25^{\circ}\text{C}$		200
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$		$V_{DD} \leq -50\text{V}$	90
t_{on}	Forward Turn–On Time			Negligible	
PACKAGE CHARACTERISTICS					
L_D	Internal Drain Inductance (from centre of drain pad to die)			4.0	nH
L_S	Internal Source Inductance (from centre of source pad to end of source bond wire)			6.0	

Notes

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