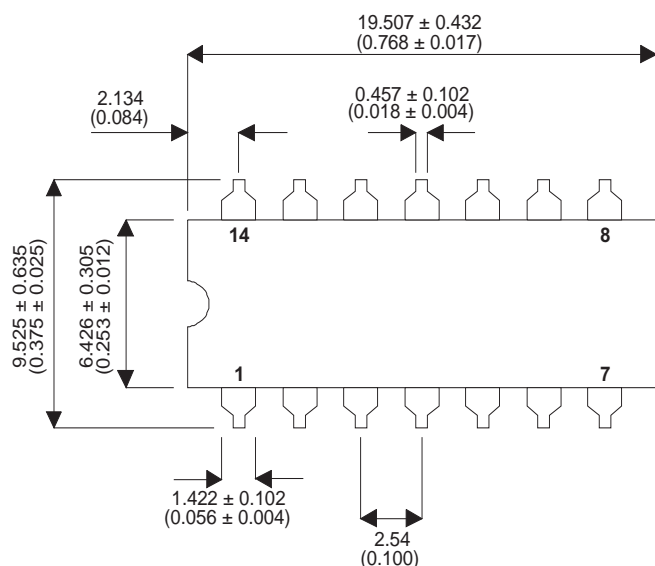


MECHANICAL DATA

Dimensions in mm (inches)



14 LEAD MOULDED DIP PACKAGE

N-CHANNEL N-CHANNEL N-CHANNEL N-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
- 11,4—NC

**14 LEAD DUAL IN LINE QUAD
N-CHANNEL
POWER MOSFETS**

$BV_{DSS} \quad \pm 100V$
 $I_{D(cont)} \quad 1A$
 $R_{DS(on)} \quad 0.7\Omega$

FEATURES

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

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

V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ($V_{GS} = 10V, T_{case} = 25^{\circ}C$)	1.A
I_D	Continuous Drain Current ($V_{GS} = 10V, T_{case} = 100^{\circ}C$)	0.6A
I_{DM}	Pulsed Drain Current	4A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	1.4W
	Linear Derating Factor	0.011W/ $^{\circ}C$
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 $^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case	6.25 $^{\circ}C/W$
$R_{\theta JCA}$	Thermal Resistance Junction-to-Ambient	175 $^{\circ}C/W$

Notes

- 1) Pulse Test: Pulse Width $\leq 300\mu s, \delta \leq 2\%$
- 2) @ $V_{DD} = 25V, L \geq 112mH, R_G = 25\Omega, Peak I_L = 1A, Starting T_J = 25^{\circ}C$
- 3) @ $I_{SD} \leq 1A, di/dt \leq 75A/\mu s, V_{DD} \leq BV_{DSS}, T_J \leq 150^{\circ}C, Suggested R_G = 24\Omega$

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 ($T_{amb} = 25^{\circ}\text{C}$ 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
ΔBV_{DSS} Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.13		V/ $^{\circ}\text{C}$
$R_{DS(on)}$ Static Drain – Source On–State Resistance	$V_{GS} = 10\text{V}$ $I_D = 0.6\text{A}$ $V_{GS} = 10\text{V}$ $I_D = 1\text{A}$			0.70 0.80	Ω
$V_{GS(th)}$ 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			S(\bar{v})
I_{DSS} Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8V_{DSS}$ $T_J = 125^{\circ}\text{C}$			25 250	μA
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_{rss} 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	$V_{DD} = 50\text{V}$ $I_D = 1\text{A}$ $R_G = 24\Omega$			20	ns
t_r Rise Time				25	
$t_{d(off)}$ Turn–Off Delay Time				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	$I_S = 1.0\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0$			1.5	V
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.

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