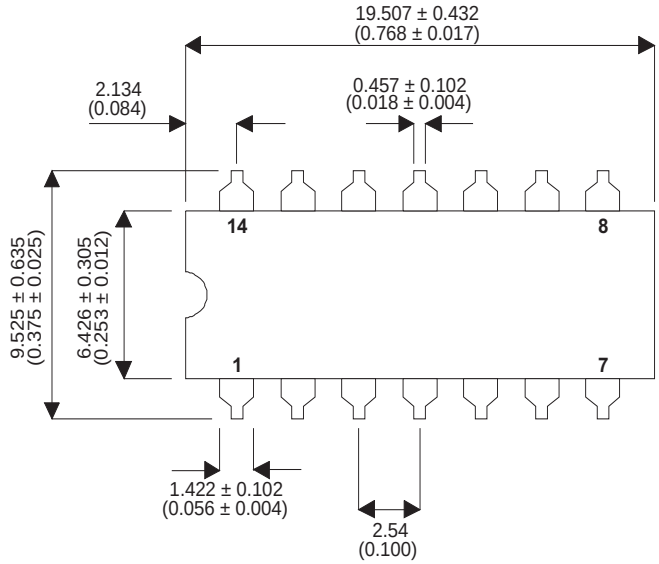
2N7334
IRFG110

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—Source3	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} ±100V
$I_{D(cont)}$ 1A
$R_{DS(on)}$ 0.7Ω

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°C unless otherwise stated)

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

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Document Number 5829
Issue 1

SEME LAB

2N7334
IRFG110

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°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°C I_D = 1mA			0.13		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance	V_{GS} = 10V	I_D = 0.6A			0.70	Ω
		V_{GS} = 10V	I_D = 1A			0.80	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 250µA	2		4	V
g_{fs}	Forward Transconductance	V_{DS} ≥ 15V	I_{DS} = 0.60A	0.86			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS} = 0	V_{DS} = 0.8V_{DSS}			25	µA
			T_J = 125°C			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			180		pF
C_{oss}	Output Capacitance	V_{DS} = 25V			82		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz			15		
Q_g	Total Gate Charge	V_{GS} = 10V	I_D = 1A			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} = 50V I_D = 1A R_G = 24Ω				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 = 1.0A V_{GS} = 0	T_J = 25°C			1.5	V
t_{rr}	Reverse Recovery Time	I_F = 1A	T_J = 25°C			200	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ 100A/µs	V_{DD} ≤ 50V			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 ≤ 300µs, δ ≤ 2%

2) Repetitive Rating – Pulse width limited by maximum junction temperature.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Document Number 5829
Issue 1