

Description

The FDMS2734 is the new generation trench N-ch MOSFET has been designed to minimize the on-state resistance ($R_{DS(ON)}$) yet maintain superior switching performance, making it ideal for high efficiency power management applications

Features

- Low On Resistance
- Low Gate Charge
- Fast switching Characteristic
- **100% UIS Tested**
- **100% Avalanche Tested**
- Lead-Free, Halogen-Free; RoHS Compliant

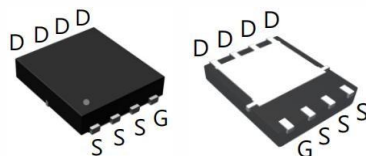
Applications

- DC-DC converters
- Load Switch
- Power Management
- White LED boost converters

V_{DSS}	250V
I_D	20A
$R_{DS(ON)}$	100mΩ @ $V_{GS}=10V$

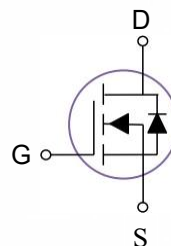
Outline

PDFN5x6-8L Pin Configuration



Equivalent

(4) Gate
(1\2\3) Source
(5\6\7\8) Drain



Packaging specifications

Part No.	Package	Marking	Basic ordering unit.(pcs)
FDMS2734	PDFN5x6-8L		5000

Absolute Maximum Ratings

Parameter		Symbol	Limit	Units
Drain-Source Voltage		V _{DS}	250	V
Gate-Source Voltage		V _{GS}	±20	V
Drain Current-Continuous ^(Note2)	T _A =25°C	I _D	20	A
	T _A =70°C		16	A
-Pulsed ^(Note 1、 Note 2)		I _{DM}	80	A
Maximum Power Dissipation	T _A =25°C	P _D	65	W
	T _A =70°C		41	W
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55 to 150	°C
Thermal Resistance Junction-Ambient		R _{θJA}	62	°C /W
Thermal Resistance Junction-Case		R _{θJC}	1.1	°C /W

Electrical Characteristics (Tc=25 °C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _D =250uA	250			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =200V , V _{GS} =0V			1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V , V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250uA	2	3	4.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V , I _D =10A		100	120	mΩ
DYNAMIC CHARACTERISTICS Note4						
Input Capacitance	C _{ISS}	V _{DS} =125V , V _{GS} =0 V , f =1.0MHz		2650		pF
Output Capacitance	C _{OSS}			135		pF
Reverse Transfer Capacitance	C _{RSS}			82		pF
Total Gate Charge	Qg	V _{DS} =120V , I _D =3A , V _{GS} =10V		55		nC
Gate-Source Charge	Qgs	V _{DS} =120V , I _D =3A , V _{GS} =10V		17		nC
Gate-Drain Charge	Qgd			15		nC
SWITCHING CHARACTERISTICS Note4						
Turn-On Delay Time	t _{D(ON)}	V _{DD} =120V , I _D =2.0A , V _{GS} =10V , R _G =25Ω		37		ns
Rise Time	tr			29		ns
Turn-Off Delay Time	t _{D(OFF)}			80		ns
Fall Time	tf			42		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage	V _{SD}	V _{GS} =0V , I _S =10A			1.2	V

Notes:

- 1、Pulse Test Width < 300us,Duty Cycle< 2%
- 2、Drain current limited by maximum junction temperature.
- 3、Starting Tj=25° C ,L=0.5mH,VDD=120V,VGS=10V ,RG=25
- 4、Guaranteed by design,not subject to production testing.

Typical Performance Characteristics

Fig.1 Continuous Drain Current vs. TC

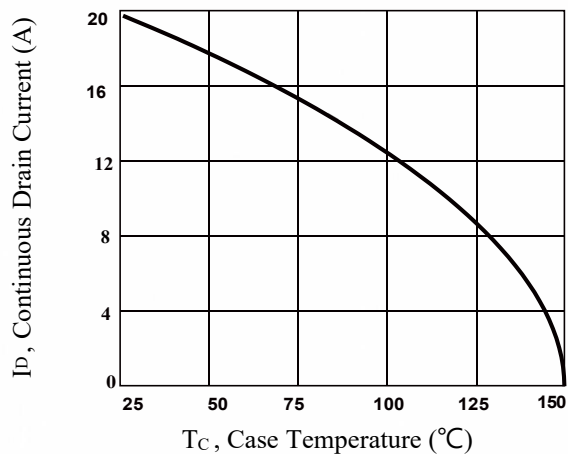


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

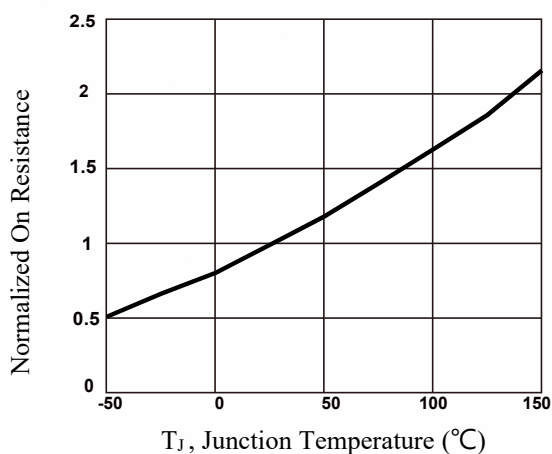


Fig.3 Normalized V_{th} vs. T_J

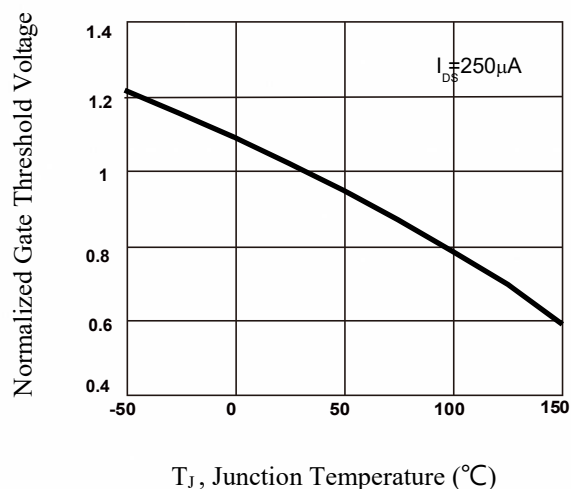


Fig.4 Gate Charge Waveform

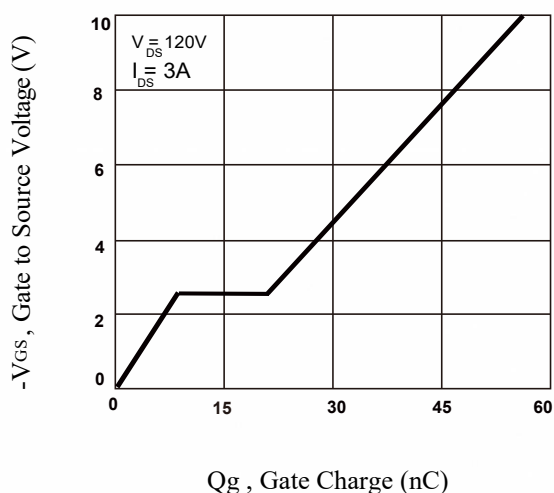


Fig.5 Typical Output Characteristics

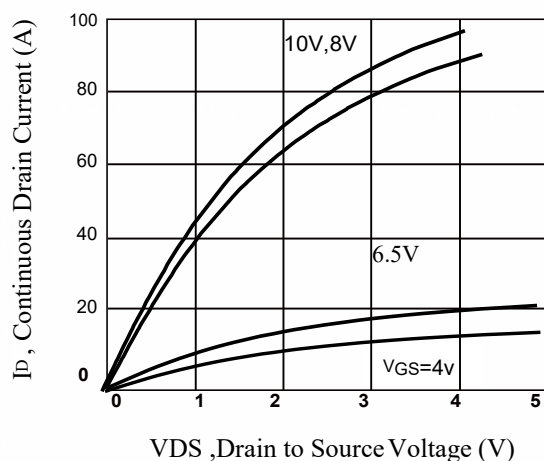


Fig.6 Capacitance

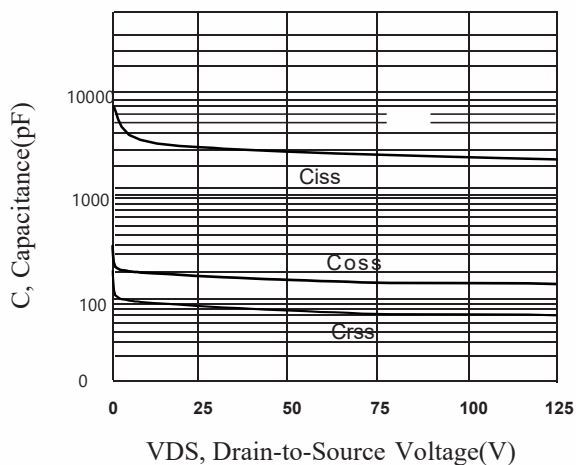


Fig.7 Turn-On Resistance vs. ID

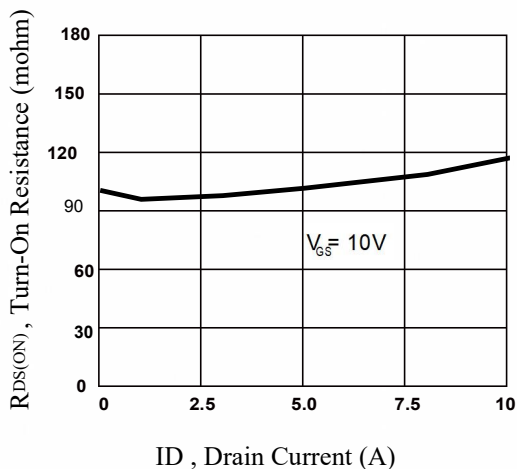


Fig.8 Typical Source-Drain Diode Forward Voltage

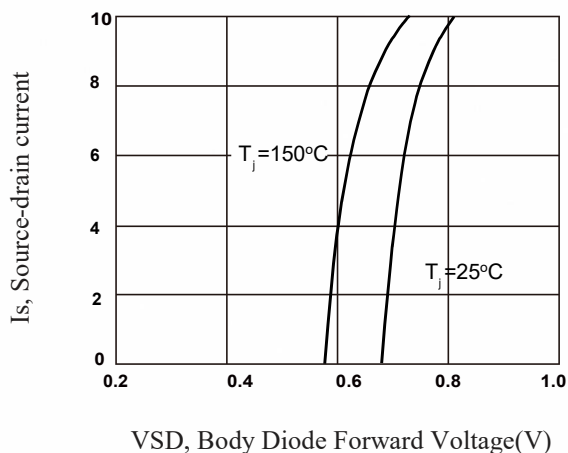


Fig.9 Normalized Transient Impedance

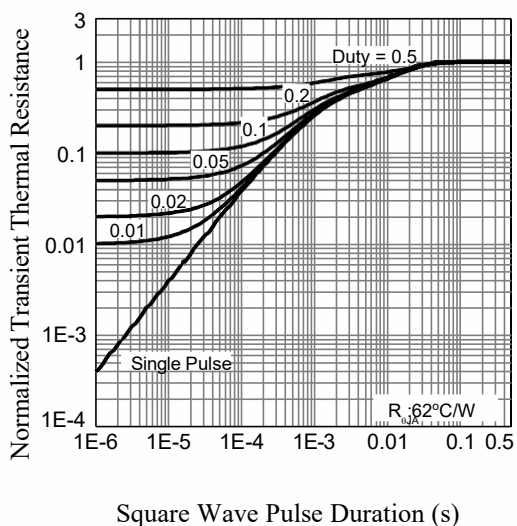


Fig.10 Maximum Safe Operation Area

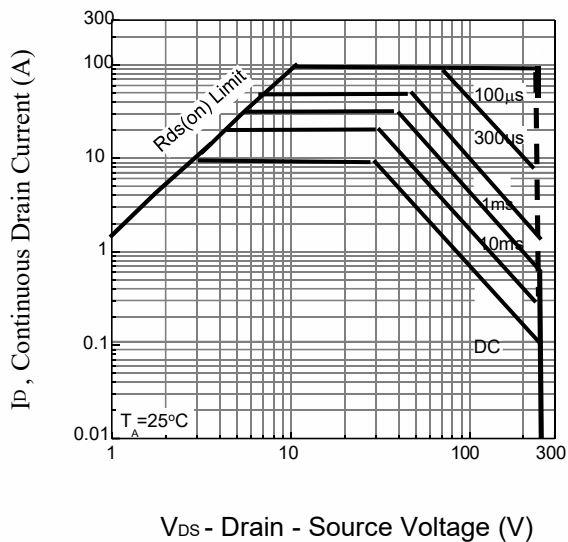


Figure11a. Switching Test Circuit

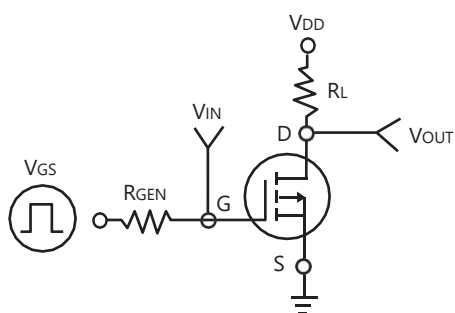
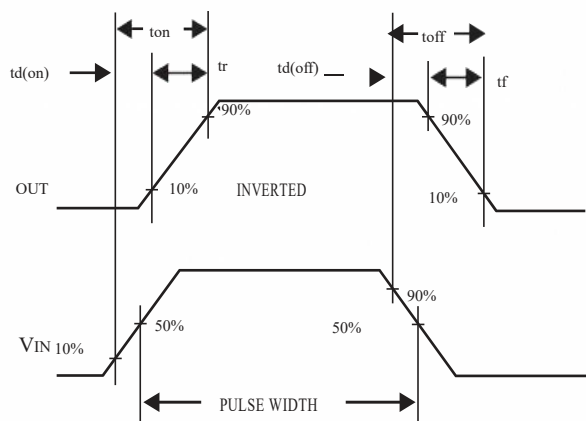
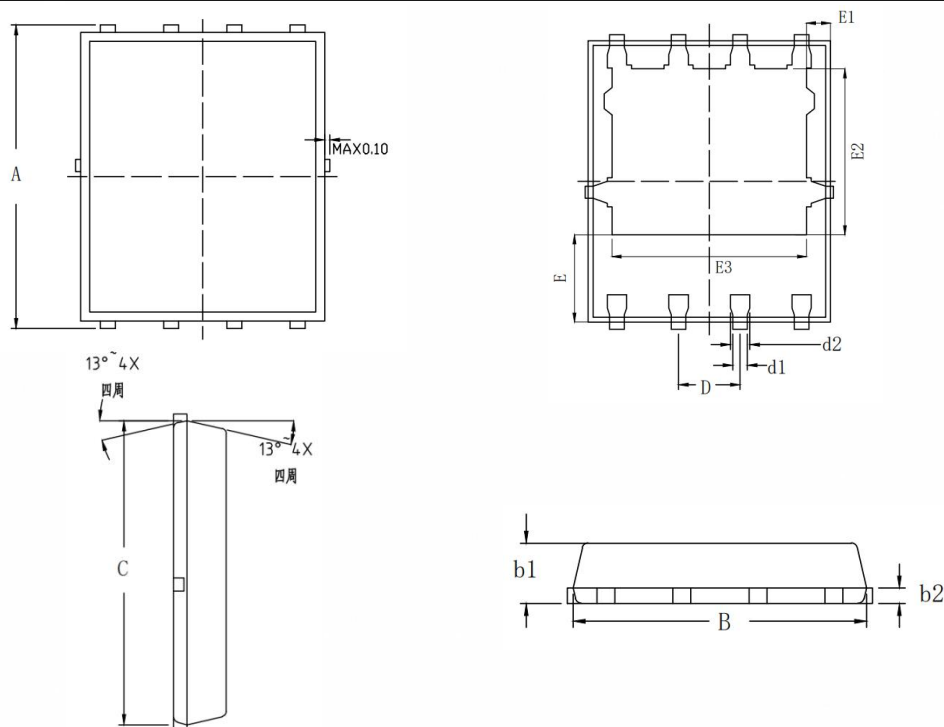


Figure 11b. Switching Waveforms



SOT-23 Package Information



COMMON DIMENSION(MM)

PKG		PDFN5x6	
SYMBOL	MIN	TYP	MAX
A	6.000	6.100	6.200
B	4.875	4.900	4.925
b1	0.975	1.000	1.025
b2	0.246	0.254	0.262
C	5.775	5.800	5.825
D	1.245	1.270	1.295
d1	0.275	0.300	0.325
d2	0.375	0.400	0.425
E	1.725	1.775	1.825
E1	0.395	0.445	0.495
E2	3.425	3.475	3.525
E3	3.960	4.010	4.060

NOTICE

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