FH8818K

N- Channel Enhancement Mode Power MOSFET

Description
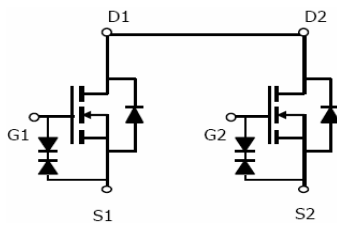
The FH8818K uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications .It is ESD protested.
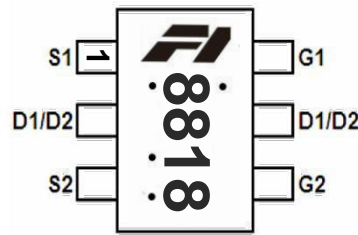
Application

● Uni-directional load switch
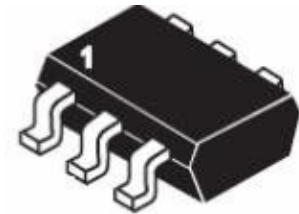● Bi-directional load switch

General Features

● $V_{DS} = 20V$, $I_D = 6.5A$

　$R_{DS(ON)} < 18$　mΩ（Typ）@ $V_{GS}=4.5V$
　$R_{DS(ON)} < 18.5$ mΩ（Typ）@ $V_{GS}=3.7V$
　$R_{DS(ON)} < 19.5$ mΩ（Typ）@ $V_{GS}=3.1V$
　$R_{DS(ON)} < 21$　mΩ（Typ）@ $V_{GS}=2.5V$

● High power and current handing capability
● Lead free product is acquired
● Surface mount package
● ESD Rating: 2000V HBM

Schematic diagram

Marking and pin Assignment

SOT23-6 top view

Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain Source Voltage	V_{DS}	20	V
Gate Source Voltage	V_{GS}	±12	V
Drain Current Cont nuous	I_D	6.5	A
Drain Current-Pulsed (Note 1)	I_{DM}	26	A
Maximum Power Dissipation	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	℃

Thermal Characteristic

Therma Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	100	℃/W

Electrical Characteristics (T$_A$=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV$_{DSS}$	V$_{GS}$=0V I$_D$=250μA	20			V
Zero Gate Voltage Drain Current	I$_{DSS}$	V$_{DS}$=18V,V$_{GS}$=0V	-	-	1	μA
Gate-Body Leakage Current	I$_{GSS}$	V$_{GS}$=±12V,V$_{DS}$=0V	-	-	±10	μA
On Characteristics [Note 3]						
Gate Threshold Voltage	V$_{GS(th)}$	V$_{DS}$=V$_{GS}$,I$_D$=250μA	0.45	0.7	1.0	V
Drain-Source On-State Resistance	R$_{DS(ON)}$	V$_{GS}$=4.5V, I$_D$=4.5A		18	19.5	mΩ
		V$_{GS}$=3.7V, I$_D$=4A	-	18.5	20.5	mΩ
		V$_{GS}$=3.1V, I$_D$=4A	-	19.5	22	mΩ
		V$_{GS}$=2.5V, I$_D$=2A	-	21	25	mΩ
Forward Transconductance	g$_{FS}$	V$_{DS}$=5V,I$_D$=6A	-	35	-	S
Dynamic Characteristics [Note4]						
Input Capacitance	C$_{Iss}$	V$_{DS}$=10V,V$_{GS}$=0V, F=1.0MHz		993		PF
Output Capacitance	C$_{oss}$		-	210	-	PF
Reverse Transfer Capacitance	C$_{rss}$			139		PF
Switching Characteristics [Note 4]						
Turn-on Delay Time	t$_{d(on)}$	V$_{DD}$=10V,R$_L$=1.2Ω V$_{GS}$=8V,R$_{GEN}$=3Ω	-	2.5		nS
Turn-on Rise Time	t$_r$		-	7.2		nS
Turn-Off Delay Time	t$_{d(off)}$		-	49		nS
Turn Off Fall Time	t$_f$		-	10.8		nS
Total Gate Charge	Q$_g$	V$_{DS}$=10V,I$_D$=6A, V$_{GS}$=4.5V	-	14.2		nC
Gate-Source Charge	Q$_{gs}$		-	1.5	-	nC
Gate-Drain Charge	Q$_{gd}$		-	4.7	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage [Note 3]	V$_{SD}$	V$_{GS}$=0V,I$_S$=1A	-	-	1.2	V
Diode Forward Current [Note 2]	I$_S$		-	-	3	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production
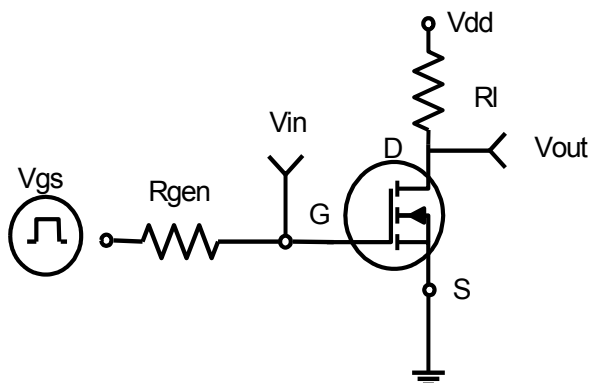
Typical Electrical and Thermal Characteristics
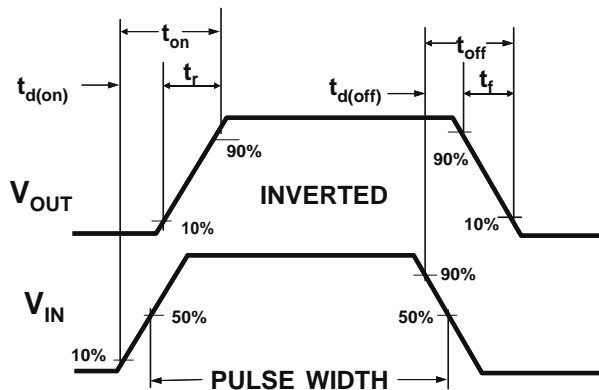
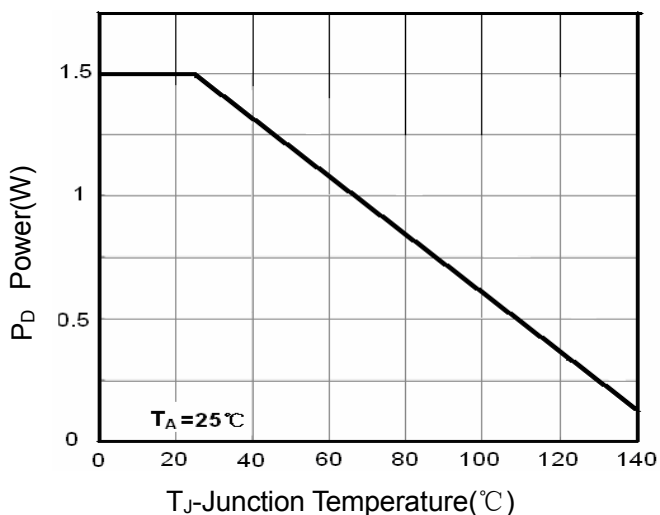Figure 1:Switching Test Circuit

Figure 2:Switching Waveforms

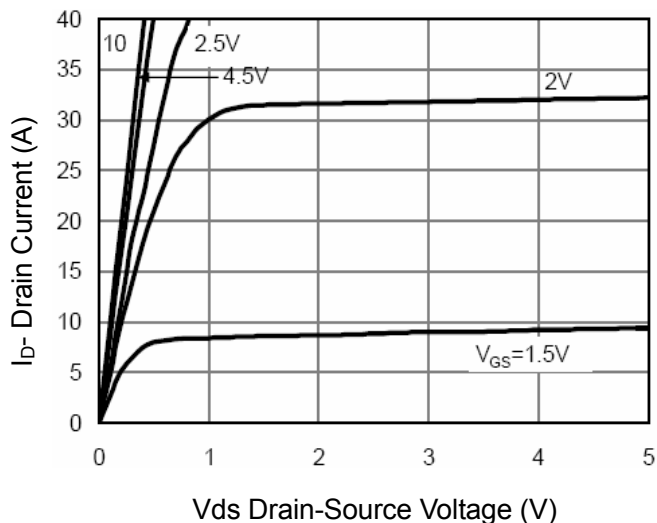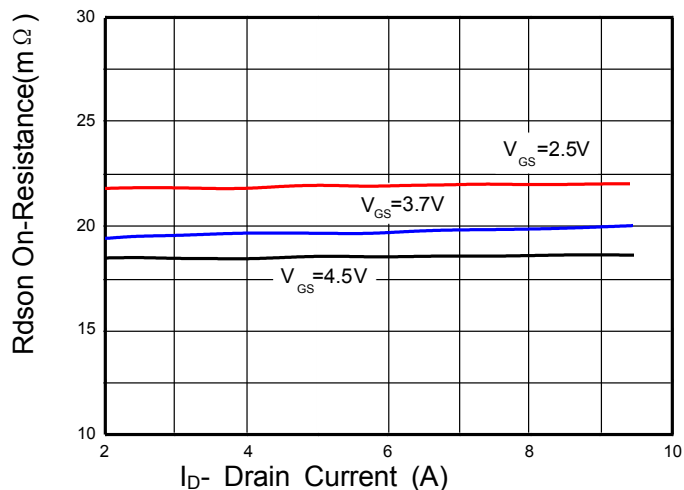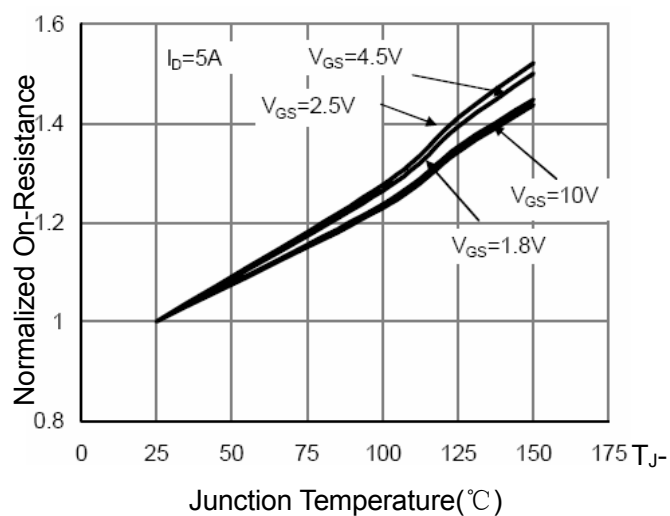Figure 3 Power Dissipation

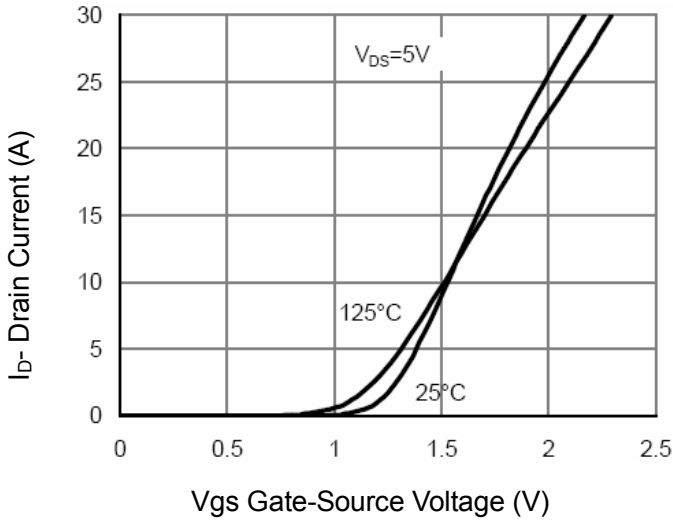Figure 6 Drain-Source On-Resistance
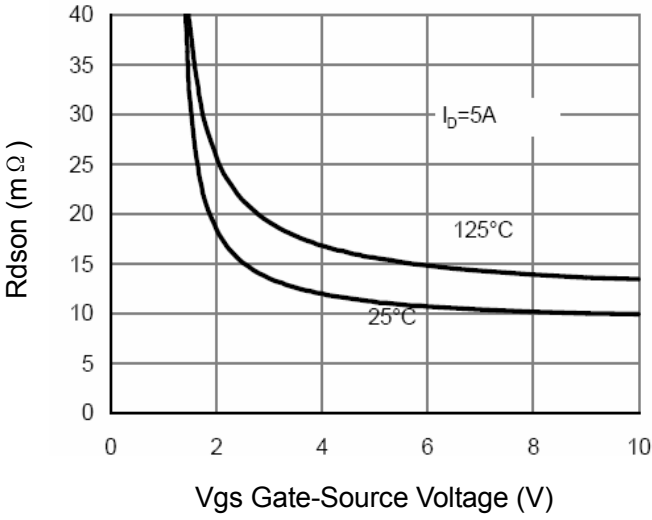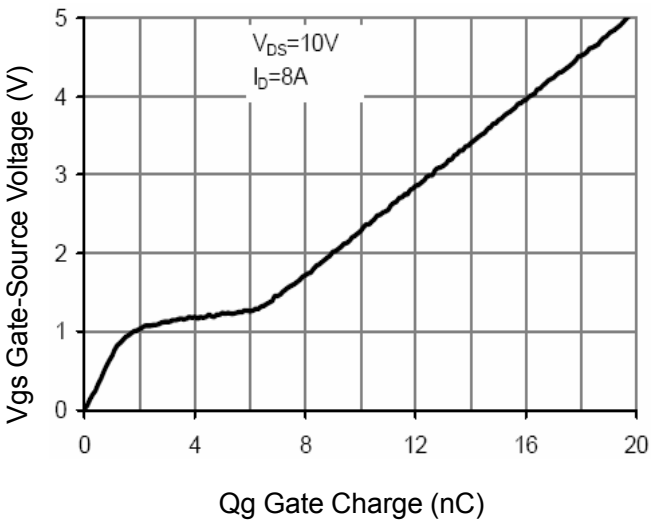
Figure 5 Output Characteristics

Figure 8 Drain-Source On-Resistance

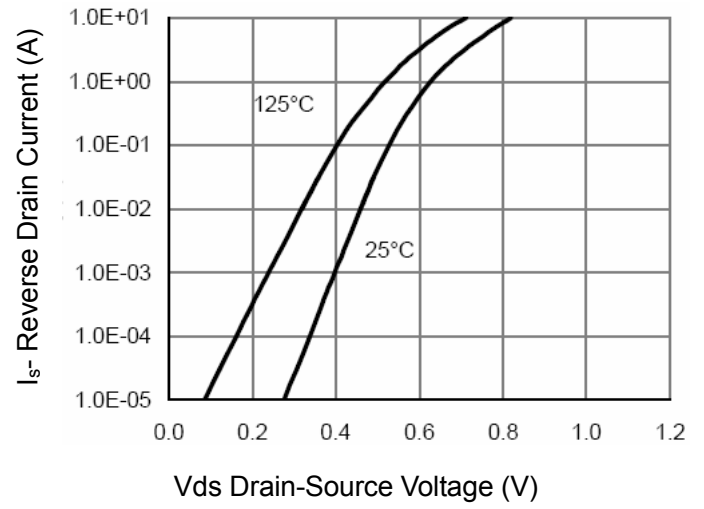**Figure 7 Transfer Characteristics**

Figure 8 Capacitance vs Vds

Figure 9 Rdson vs Vgs

Figure 10 Capacitance vs Vds

Figure 11 Gate Charge

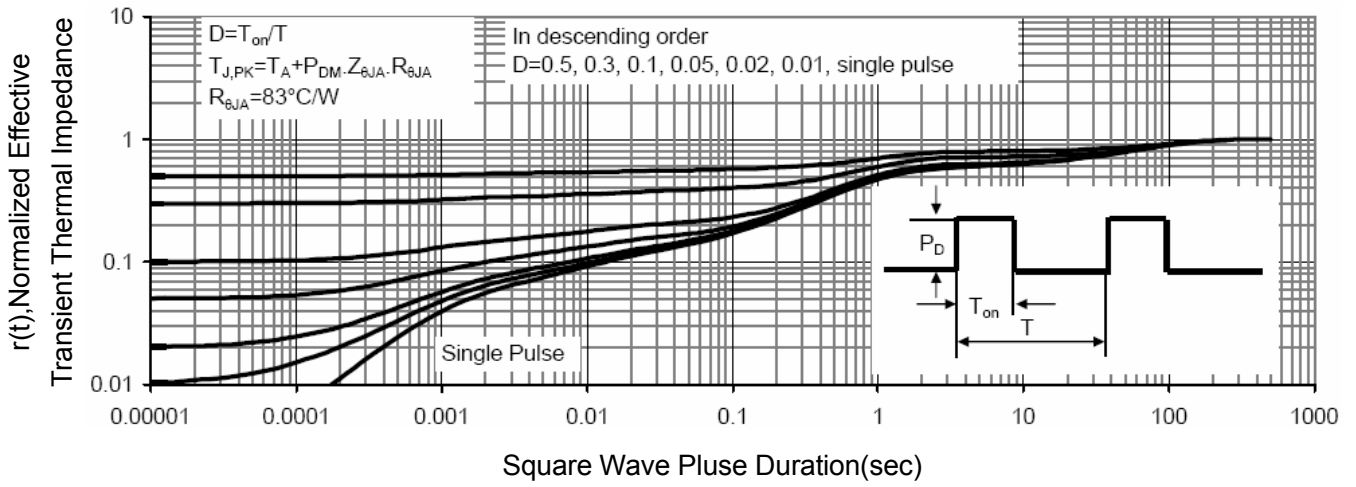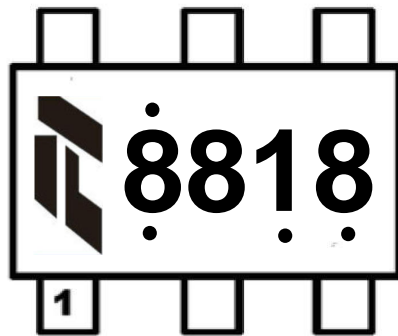**Figure 13 Safe Operation Area**

Figure 14 Normalized Maximum Transient Thermal Impedance
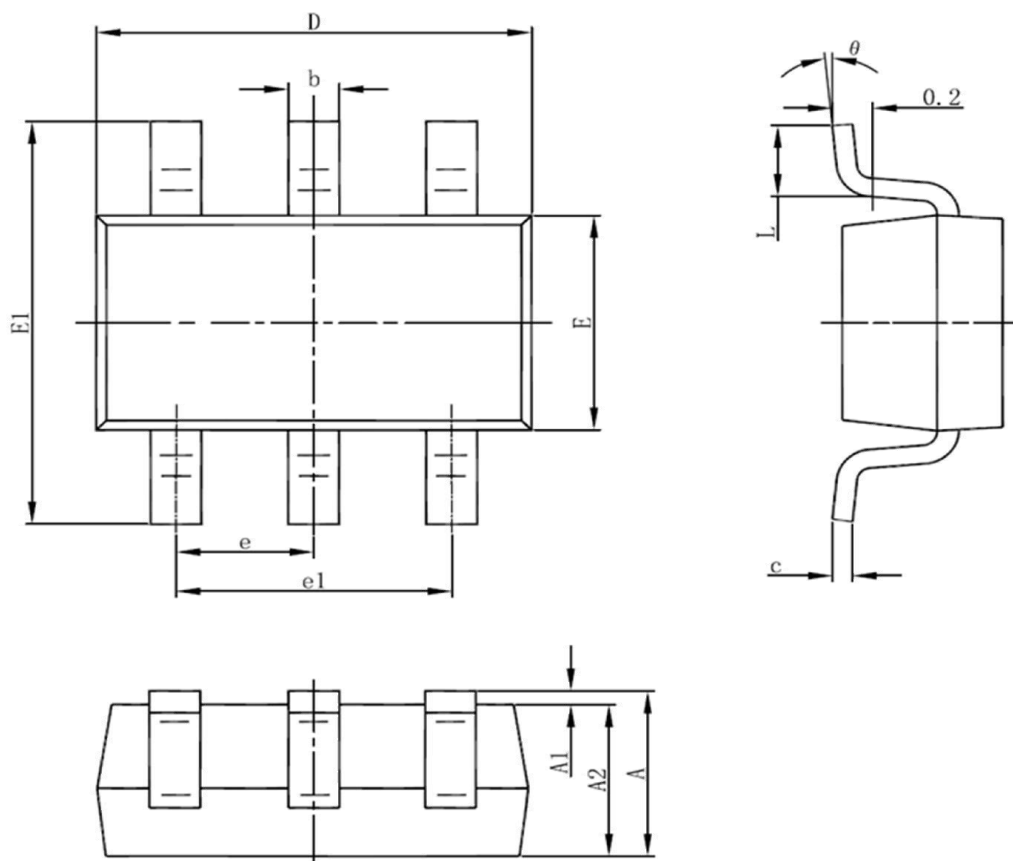
MARKING DESCRIPSION   SOT23-6

Note:

The printing points above and below the product model are the internal identification of the company. Each batch of products may be in different locations.

Package Information : SOT23-6

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by Xinfeihong *manufacturer:*

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C IPS70R2K0CEAKMA1 BSF024N03LT3 G PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 IPSA70R950CEAKMA1 IPSA70R2K0CEAKMA1 STU5N65M6 C3M0021120D DMN6022SSD-13