FORSEMI FS4473

P-Channel -15V (D-S) MOSFET

● FEATURES

$R_{DS(ON)}$ 2.6mΩ@VGS=-4.5V (TYP)

$R_{DS(ON)}$ 3.3mΩ@VGS=-2.5V (TYP)

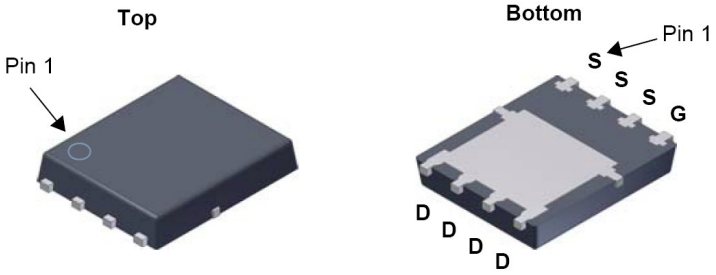
high density cell design for extremely low $R_{DS(ON)}$

Exceptional on-resistance and maximum DC current capability

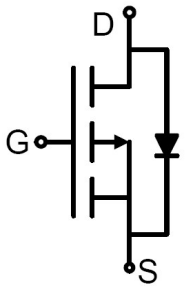
● GENERAL DESCRIPTION

The FS4473 combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is ideal for load switch and battery protection applications.

● PIN CONFIGURATION



PDFN5×6-8L



P-MOS

● Absolute Maximum Ratings (T_A=25℃ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-15	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	-70	A
Pulsed Drain Current	I_{DM}	-180	A
Maximum Power Dissipation	P_D	35	W
Derating factor		0. 28	W/℃
Single pulse avalanche energy (Note 5)	E_{AS}	300	mJ
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

* The device mounted on 1in$_2$ FR4 board with 2 oz copper

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-15	-18	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics(Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1	-1.5	-2.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-2.5V, I_D=-10A	-	3.3	4.5	mΩ
		V_{GS}=-4.5V, I_D=-10A		2.6	3.3	
Forward Transconductance	g_{FS}	V_{DS}=-10V,I_D=-15A	-	20	-	S
Dynamic Characteristics(Note4)						
Input Capacitance	C_{lss}	V_{DS}=-15V,V_{GS}=0V, F=1.0MHz	-	3590	-	PF
Output Capacitance	C_{oss}		-	695	-	PF
Reverse Transfer Capacitance	C_{rss}		-	665	-	PF
Switching Characteristics(Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-15V,I_D=-10A V_{GS}=-10V,R_{GEN}=6Ω	-	13	-	nS
Turn-on Rise Time	t_r		-	12	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	50	-	nS
Turn-Off Fall Time	t_f		-	14	-	nS
Total Gate Charge	Q_g	V_{DS}=-15V,I_D=-10A, V_{GS}=-10V	-	84	-	nC
Gate-Source Charge	Q_{gs}		-	11.7	-	nC
Gate-Drain Charge	Q_{gd}		-	25	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V,I_S=-10A	-	-0.85	-1.2	V
Diode Forward Current(Note 2)	I_S		-	-	-50	A
Reverse Recovery Time	t_{rr}	TJ = 25°C, IF = -10A di/dt = 100A/μs(Note3)	-	-	45	nS
Reverse Recovery Charge	Qrr		-	-	43	nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

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
5. EAS condition：Tj=25℃,V_{DD}=-15V,V_G=-10V,L=0.5mH,Rg=25Ω

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

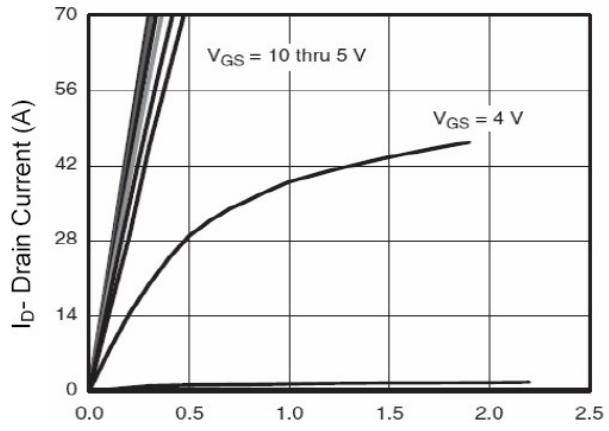


Figure 1 Output Characteristics

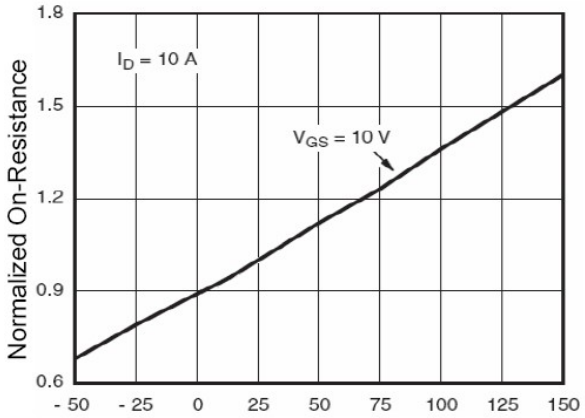


Figure 4 Rdson-Junction Temperature

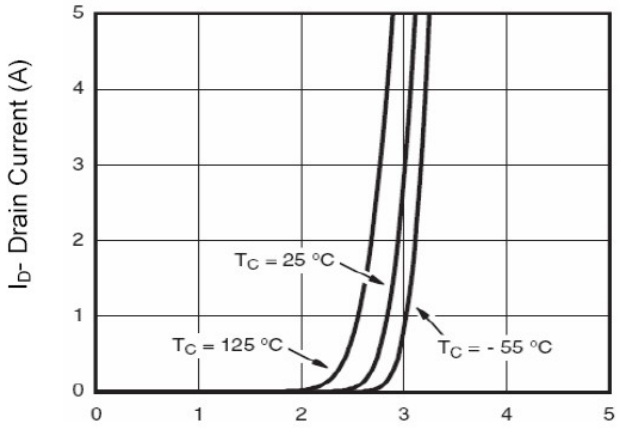


Figure 2 Transfer Characteristics

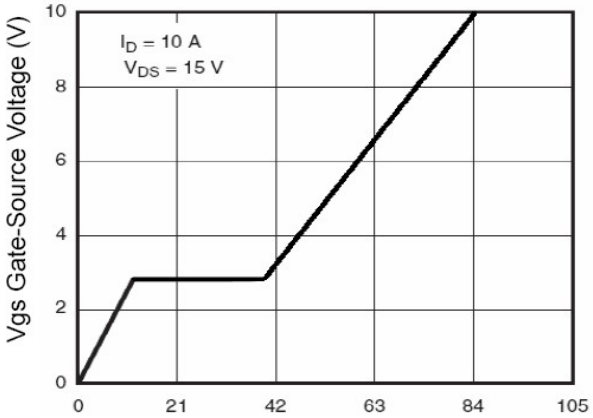


Figure 5 Gate Charge

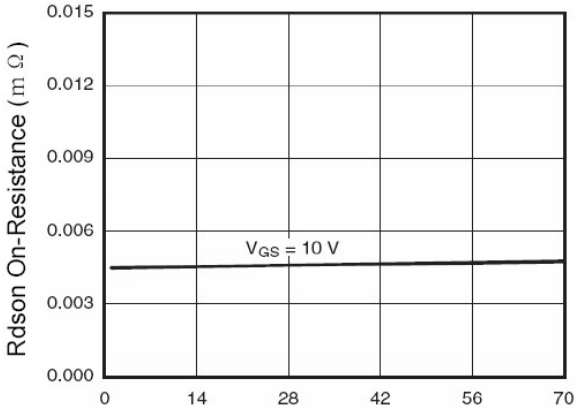


Figure 3 Rdson- Drain Current

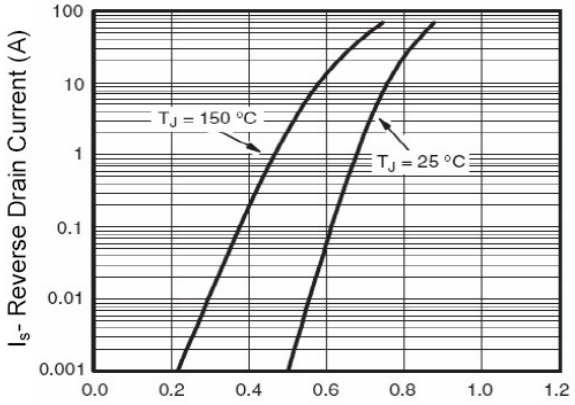
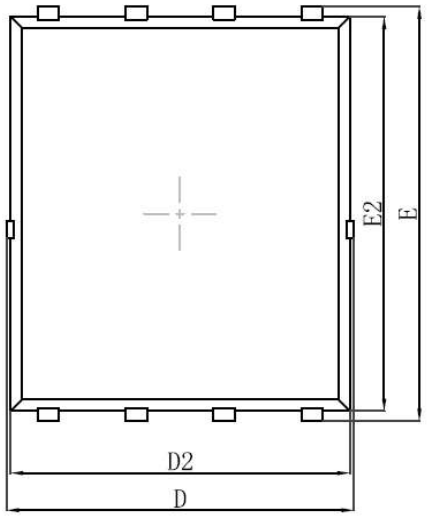
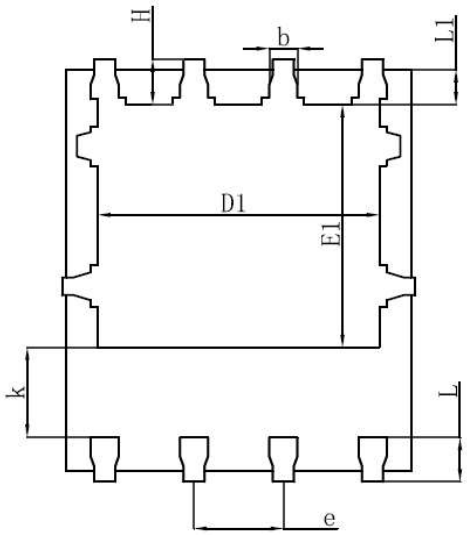


Figure 6 Source- Drain Diode Forward

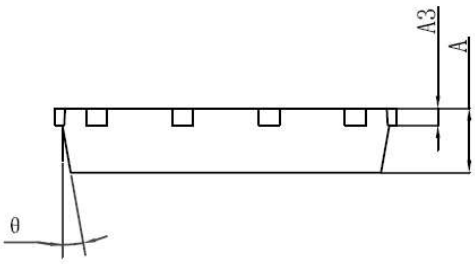
- **PACKAGE PDFN5×6-8L**



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	8°	12°	8°	12°