

N-Channel 30-V (D-S) MOSFET

● FEATURES

$R_{DS(ON)} \leq 2.2m\Omega @ V_{GS}=10V$

$R_{DS(ON)} \leq 3.2m\Omega @ V_{GS}=4.5V$

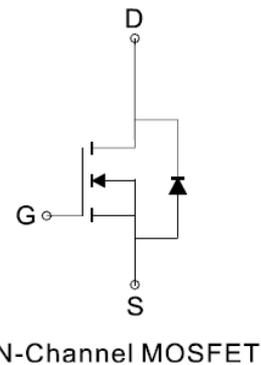
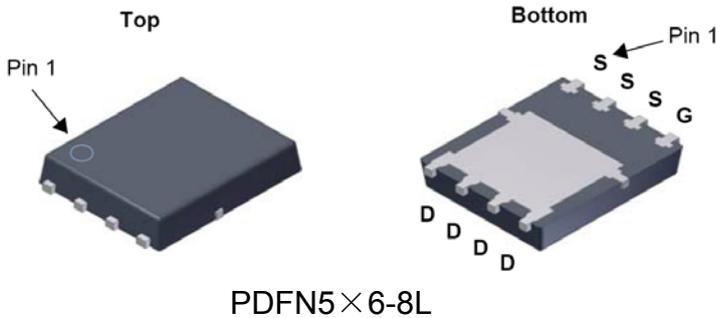
high density cell design for extremely low $R_{DS(ON)}$

Exceptional on-resistance and maximum DC current capability

● GENERAL DESCRIPTION

The FS4470 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



● Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	VDSS	30	V
Gate-Source Voltage	VGSS	±20	V
Continuous Drain Current(TJ =150°C)*	ID	TA=25°C	21
		TA=70°C	16.9
Pulsed Drain Current	IDM	84	A
Maximum Power Dissipation*	PD	TA=25°C	2.5
		TA=70°C	1.6
Operating Junction Temperature	TJ	-55 to 150	°C
Thermal Resistance-Junction to Ambient*	RθJA	50	°C/W
Thermal Resistance-Junction to Lead*	RθJL	24	

* The device mounted on 1in2 FR4 board with 2 oz copper

● **Electrical Characteristics** ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

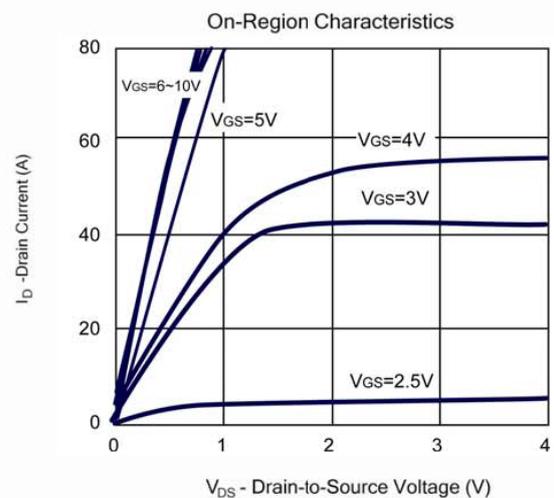
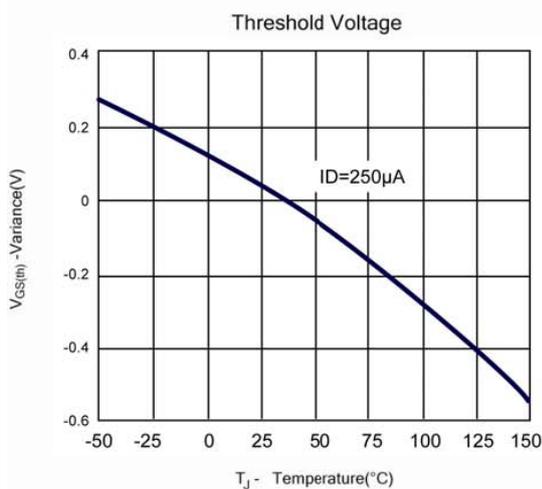
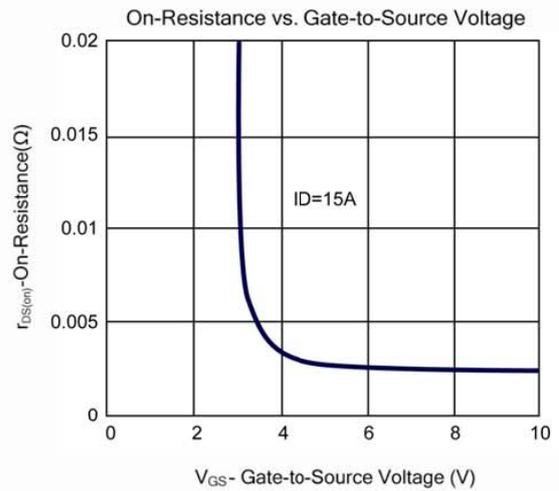
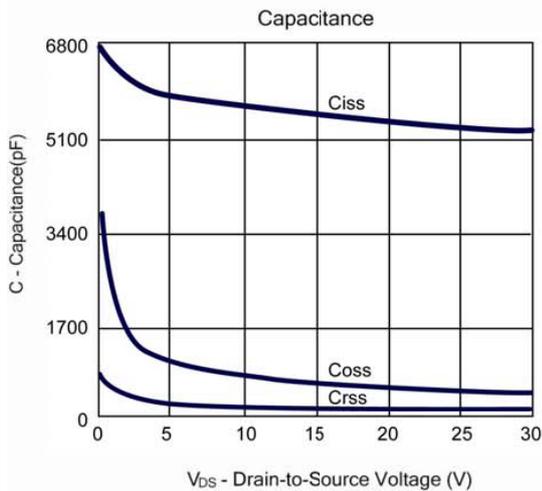
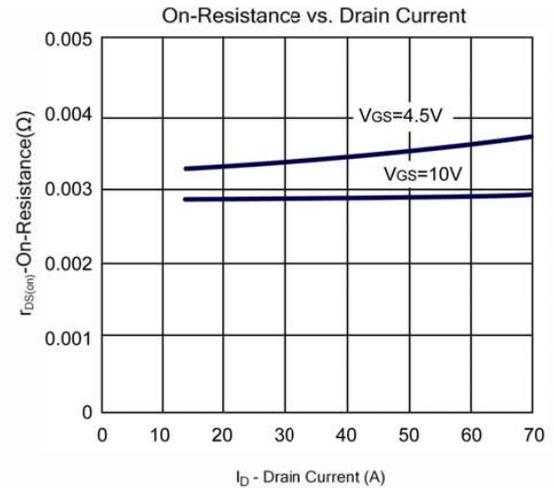
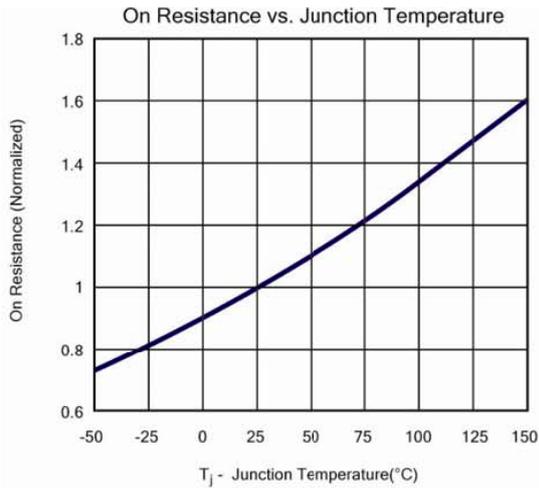
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250 μ A	30			V
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250 μ A	1.3	1.8	3	V
IGSS	Gate Leakage Current	VDS=0V, VGS= \pm 20V			\pm 100	nA
IDSS	Zero Gate Voltage Drain Current	VDS=30V, VGS=0V			1	μ A
RDS(ON)	Drain-Source On-State Resistance a	VGS=10V, ID= 10A		2.2	3.1	m Ω
		VGS=4.5V, ID= 7.5A		3.2	4.5	
VSD	Diode Forward Voltage	IS=2.7A, VGS=0V		0.72	1.1	V
DYNAMIC						
Qg	Total Gate Charge(10V)	VDS=15V, VGS=10V, ID=17A		55		nC
Qg	Total Gate Charge(4.5V)	VDS=15V, VGS=4.5V, ID=17A		29		
Qgs	Gate-Source Charge			10		
Qgd	Gate-Drain Charge			15		
Ciss	Input capacitance	VDS=15V, VGS=0V, f=1.0MHz		3400		pF
Coss	Output Capacitance			550		
Crss	Reverse Transfer Capacitance			210		
Rg	Gate-Resistance	VDS=0V, VGS=0V, f=1MHz		1.2		Ω
td(on)	Turn-On Delay Time	VDD=15V, RL =15 Ω ID=1A, VGEN=10V RG=6 Ω		23		ns
tr	Turn-On Rise Time			12		
td(off)	Turn-Off Delay Time			86		
tf	Turn-Off Fall Time			12		

Note:

a: Pulse test: pulse width \leq 300 μ s, duty cycle \leq 2%

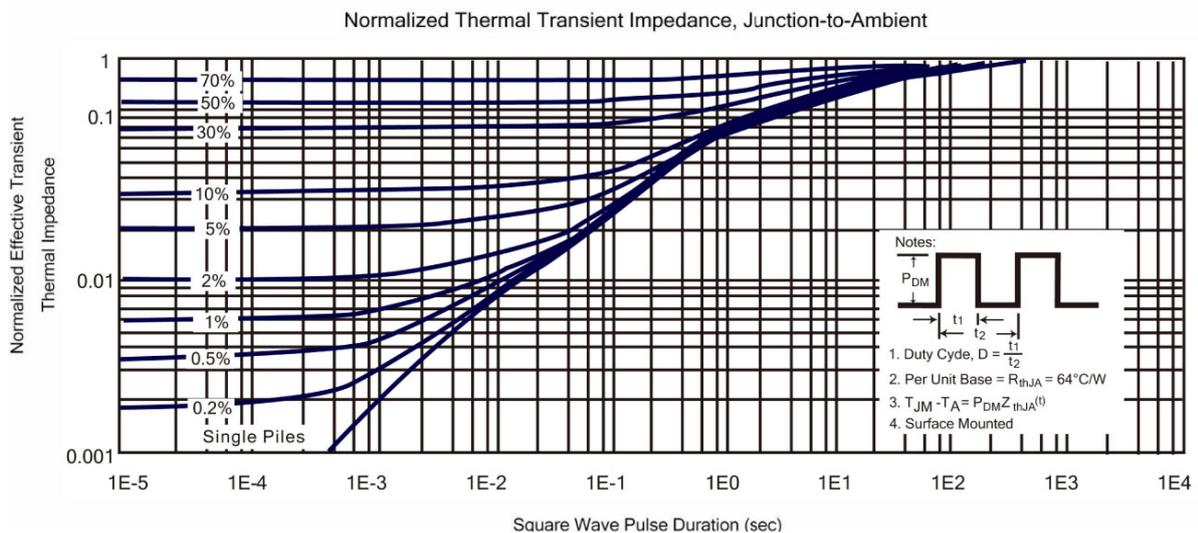
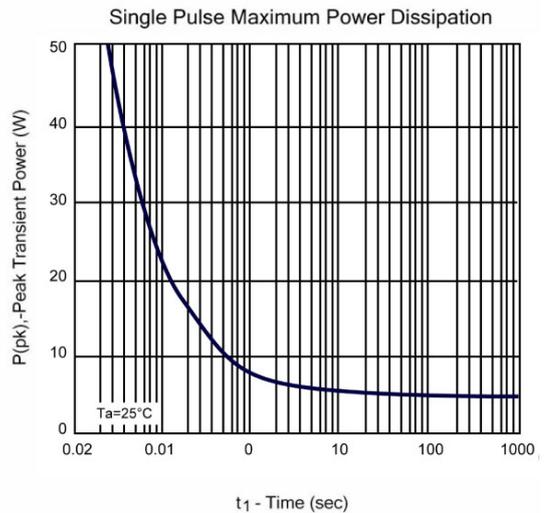
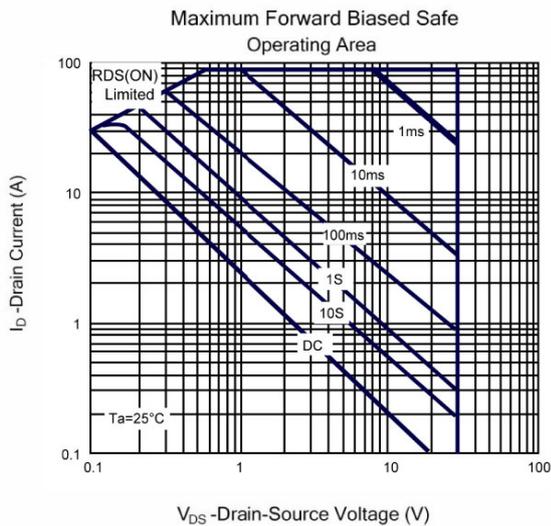
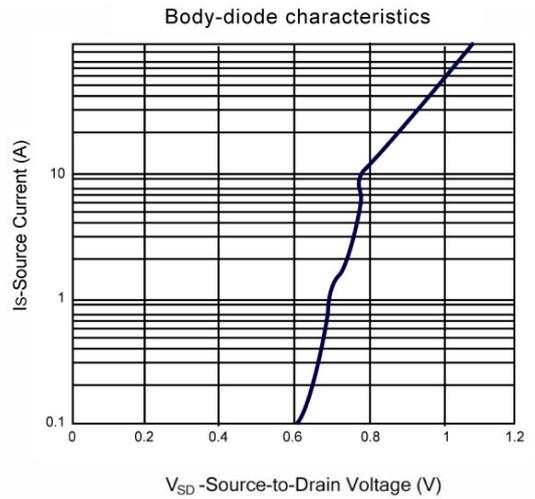
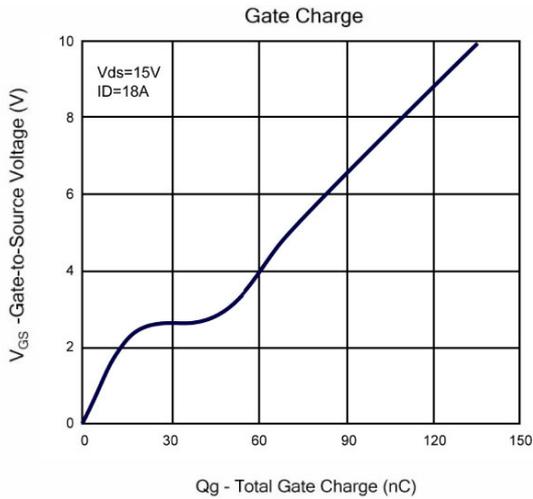
b: FORSEMI reserves the right to improve product design, functions and reliability without notice.

FS4470



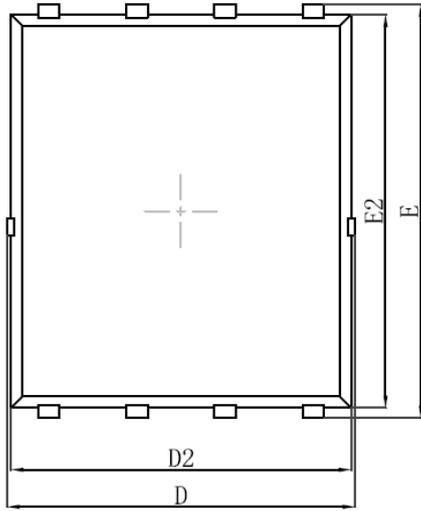
FS4470

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

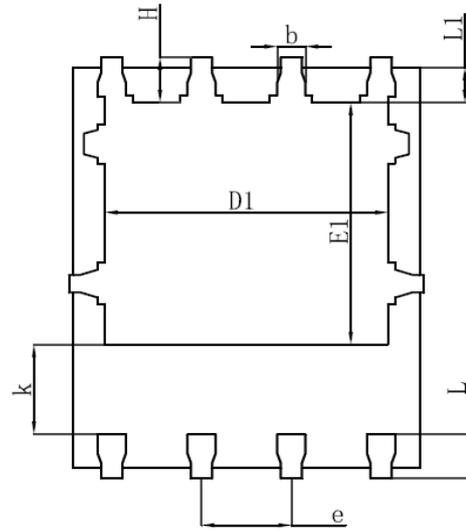


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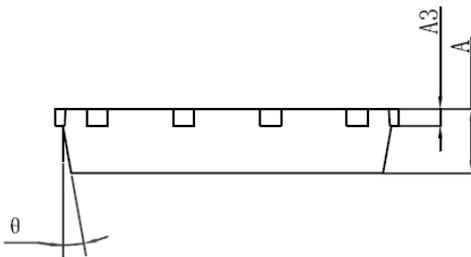
● PACKAGE PDFN5×6-8L



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°