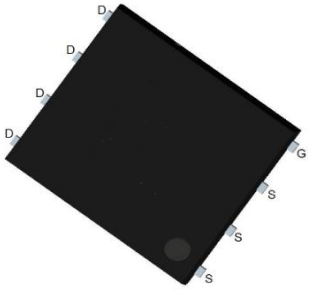
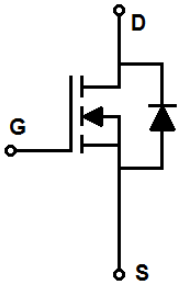
Features

- *Low $R_{DS(on)}$ @V_{GS}=10V*
- *10V Logic Level Control*
- *100% UIS Tested*
- *Pb−Free, RoHS Compliant*

$V_{(BR)DSS}$	$R_{DS(ON)}$ Typ	I_D Max
150V	16mΩ @10V	65A





PDFN5X6

Applications

- Load Switch
- *Switching Circuits*
- *High Speed line Driver*
- *Power management*

Order Information

Product	Package	Marking	Packing
FDMS86250-CN	PDFN5X6	18R15H	5000PCS/Reel

Absolute Maximum Ratings

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter		Rating	Unit
Common Ratings (T_A=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		150	V
T_J	Maximum Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-50 to 150	℃
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested①	T_A=25°C	260	A
I_D	Continuous Drain Current	T_A=25°C	65	A
		T_A=70°C	52	
P_D	Maximum Power Dissipation	T_A=25°C	192	W
EAS	Avalanche energy, single pulsed ②		153	
$R_{\theta JC}$	Thermal Resistance Junction-Ambient		0.65	°C/W

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=250μA	150	–	–	V
I_{DSS}	Zero Gate Voltage Drain Current(T_A=25℃)	V_{DS}=150V, V_{GS}=0V	–	–	1	μA
	Zero Gate Voltage Drain Current(T_A=125℃)	V_{DS}=120V, V_{GS}=0V	–	–	100	nA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	–	–	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	2.0	3.0	4.0	V
$R_{DS(ON)}$	Drain-Source On-State Resistance②	V_{GS}=10, I_D=25A	–	16	19	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=75V, V_{GS}=0V, f=1MHz	–	2300	–	pF
C_{oss}	Output Capacitance		–	220	–	pF
C_{rss}	Reverse Transfer Capacitance		–	10	–	pF
Q_g	Total Gate Charge	V_{DS}=75V I_D=30A, V_{GS}=10V	–	39	–	nC
Q_{gs}	Gate Source Charge		–	9.5	–	nC
Q_{gd}	Gate Drain Charge		–	15	–	nC
Switching Characteristics						
$t_{d(on)}$	Turn on Delay Time	V_{DD}=75V, I_D=30A, R_G=6Ω, V_{GS}=10V	–	15	–	ns
t_r	Turn on Rise Time		–	28	–	ns
$t_{d(off)}$	Turn Off Delay Time		-	45	–	ns
t_f	Turn Off Fall Time		–	32	–	ns
Source Drain Diode Characteristics						
I_{SD}	Source drain current(Body Diode)	T_A=25℃	–	–	65	A
V_{SD}	Forward on voltage②	T_j=25℃, I_{SD}=1A, V_{GS}=0V	–	0.84	1.2	V

Notes:

① Pulse width limited by maximum allowable junction temperature

②Pulse test ; Pulse width≤300μs, duty cycle≤2%.

Typical Characteristics

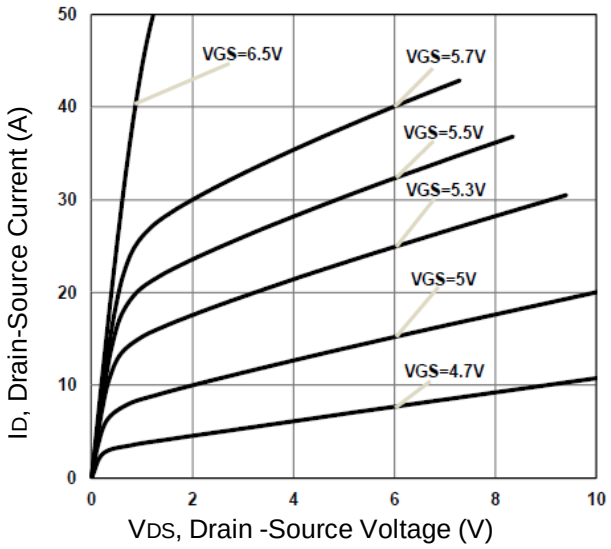


Fig1. Typical Output Characteristics

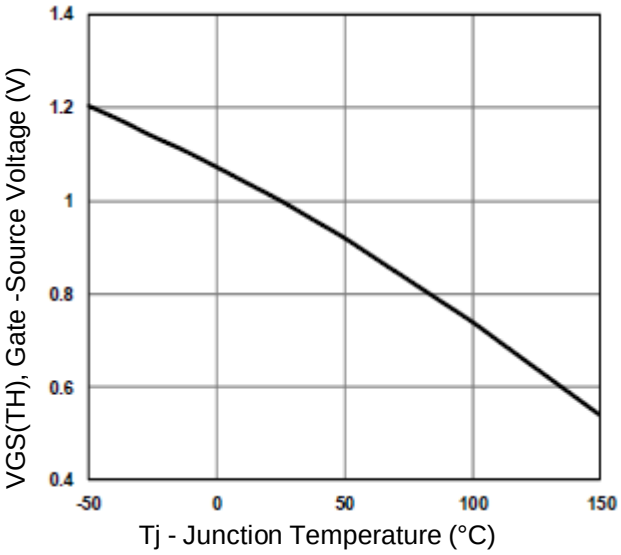


Fig2. Normalized Threshold Voltage Vs. Temperature

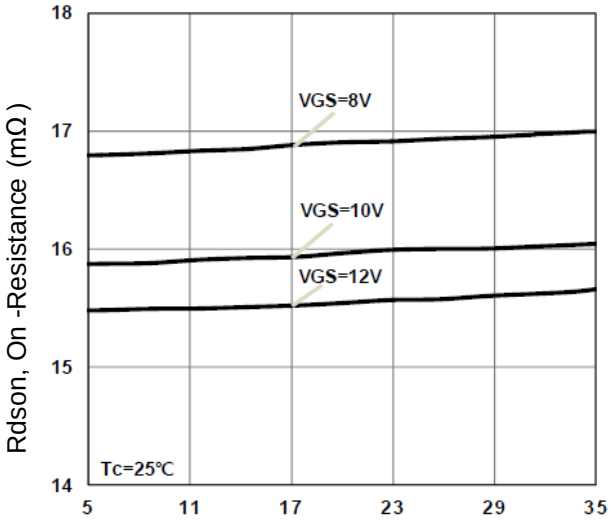


Fig3. On-Resistance vs. Drain Current and Gate

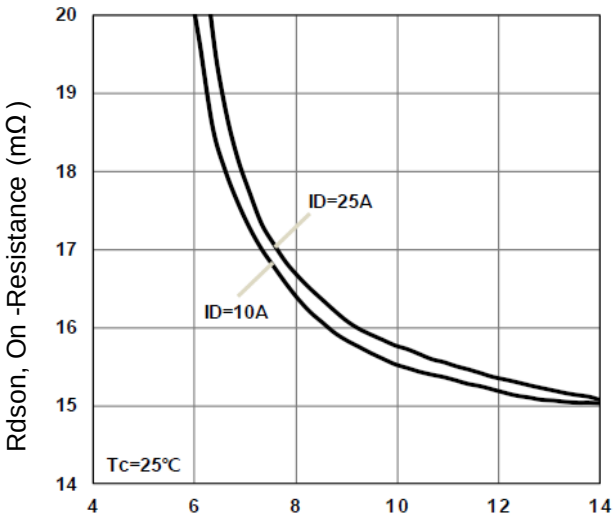


Fig4. On-Resistance vs. Gate Source Voltage

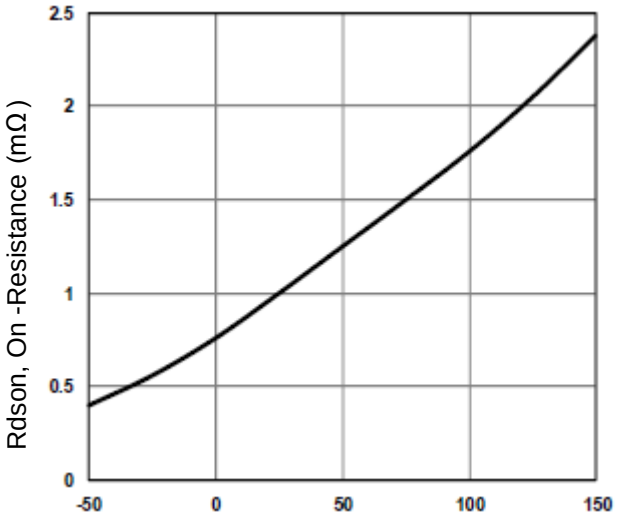


Fig5. On-Resistance vs Temperature

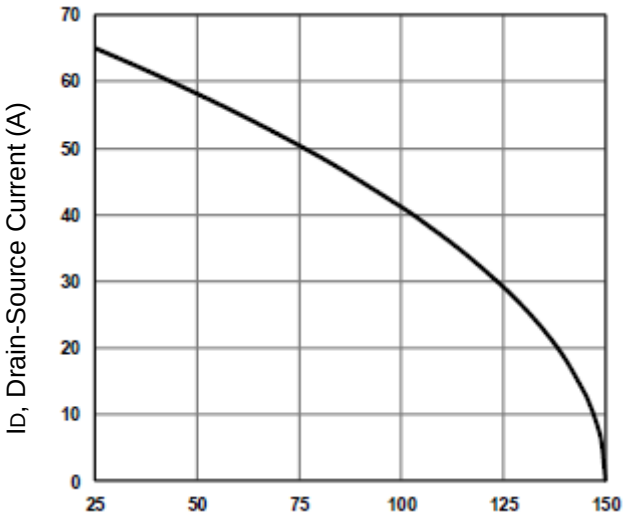


Fig6. TypiContinuous Drain Current vs Tc

Typical Characteristics

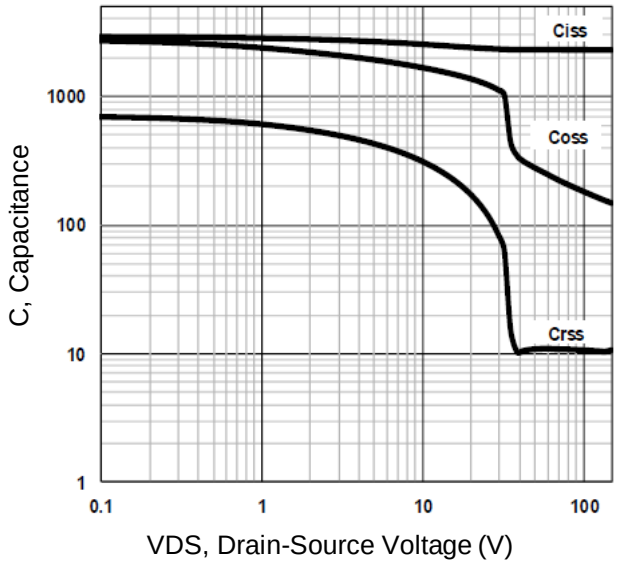


Fig7. Typical Capacitance Vs. Drain-Source Voltage

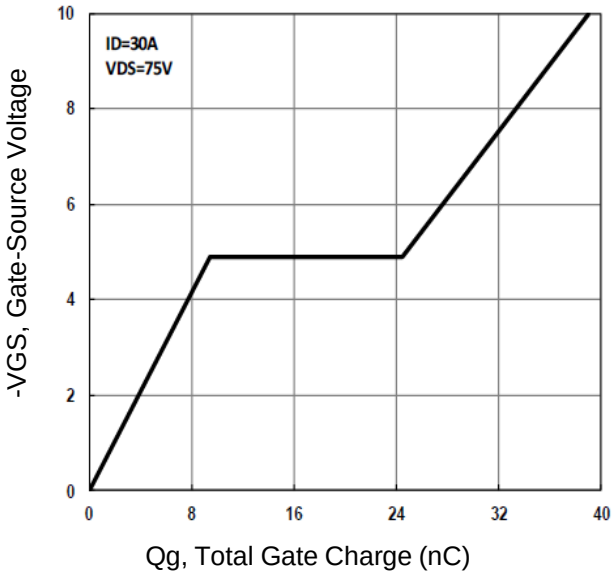


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

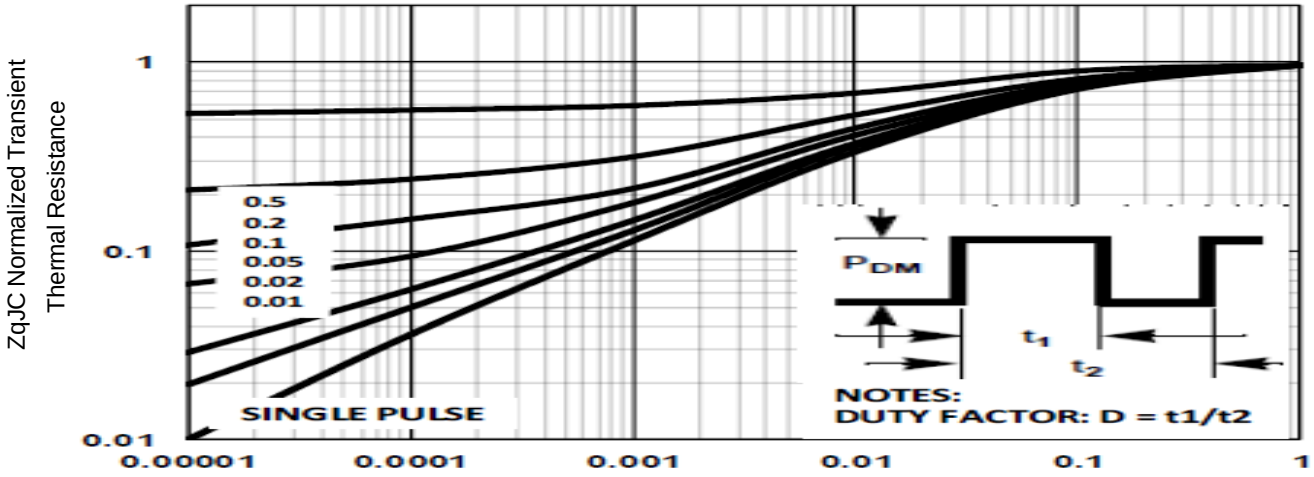


Fig9. Normalized Maximum Transient Thermal Impedance

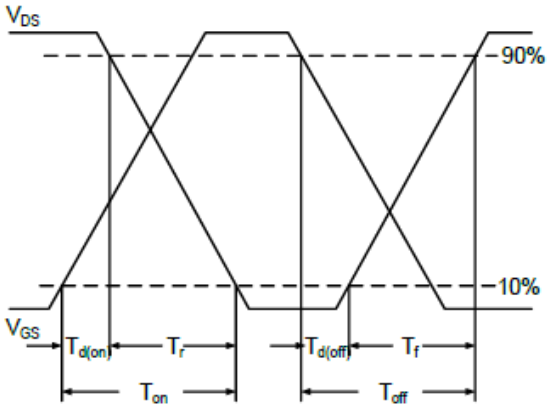


Fig10. Switching Time Test Circuit and waveforms

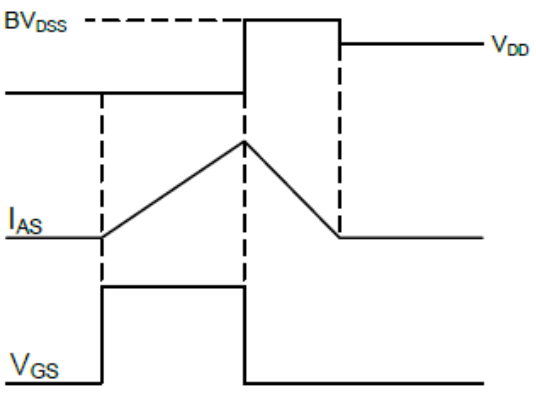
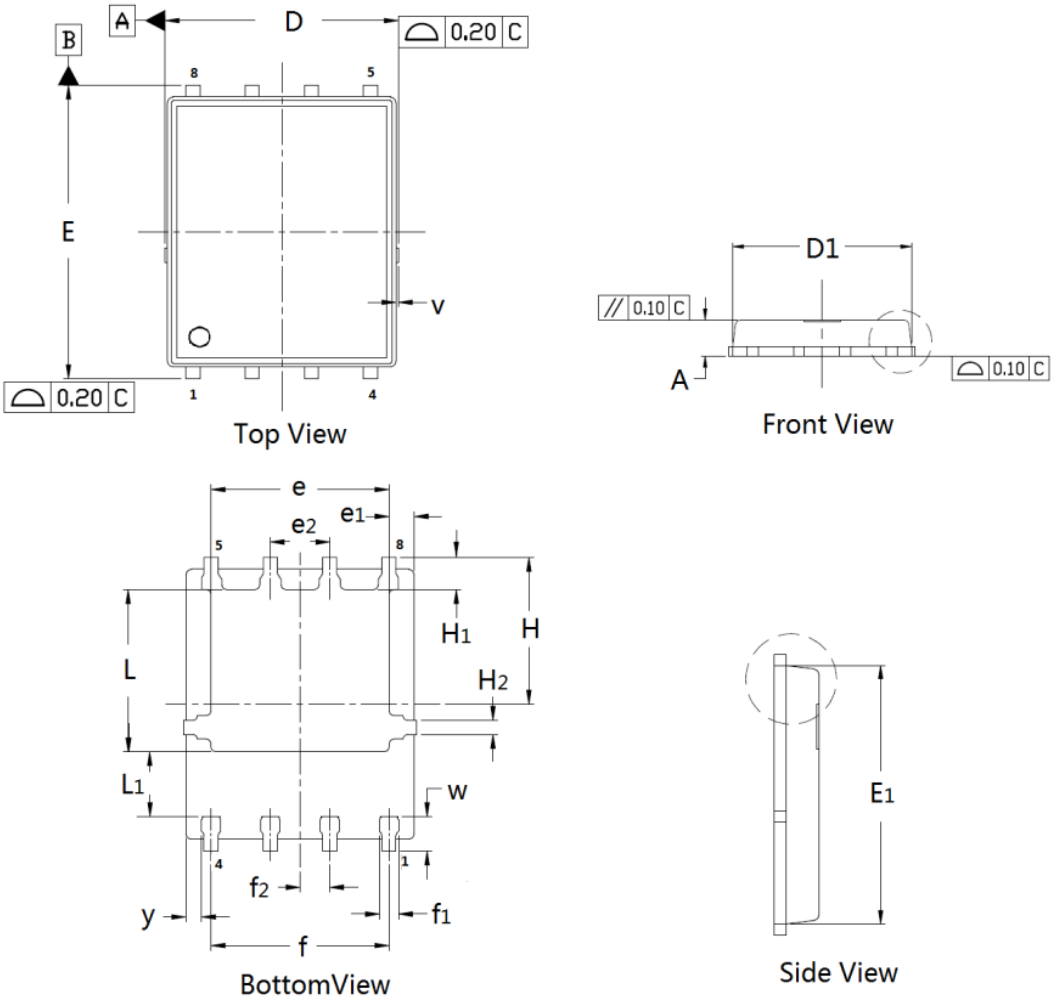


Fig11. EAS Waveform

PDFN5X6 Mechanical Data



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.02	1.10	**D**	4.90	4.98	5.10
D_1	4.80	4.89	5.00	**E**	6.00	6.11	6.20
E_1	5.65	5.74	5.85	**e**	3.72	3.80	3.92
e_1	--	0.54	--	**e_2**	--	1.27	--
f	--	3.82	--	**f_1**	0.31	0.37	0.51
f_2	--	0.64	--	**H**	--	3.15	--
H_1	0.59	0.63	0.79	**H_2**	0.26	0.28	0.32
L	3.38	3.45	3.58	**L_1**	--	1.39	--
v	--	0.13	--	**w**	0.64	0.68	0.84
y	--	0.34	--		--		--

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