

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	5.7mΩ@10V	100A

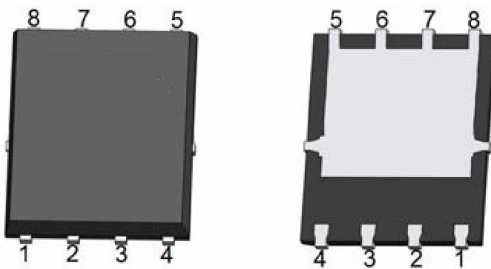
Feature

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- Advanced Split Gate Trench Technology

Application

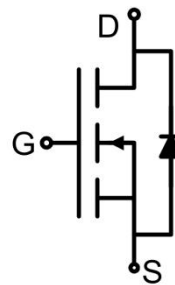
- DC/DC converter
- Motor Control

Package

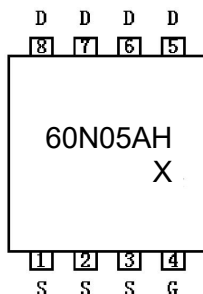


PDFN5*6-8L

Circuit diagram



Marking



Absolute maximum ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current($T_C=25^{\circ}\text{C}$)	I_D	100	A
Continuous Drain Current($T_C=100^{\circ}\text{C}$)	$I_D(100^{\circ}\text{C})$	67	A
Pulsed Drain Current	I_{DM}	400	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	78	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.6	$^{\circ}\text{C}/\text{W}$
Single pulse avalanche energy ¹⁾	E_{AS}	625	mJ
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Electrical characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

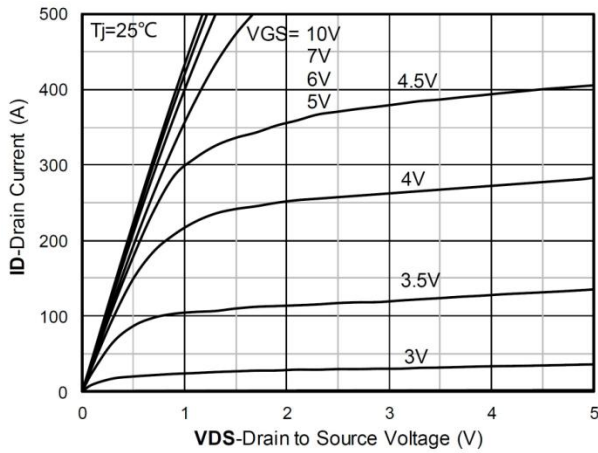
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =48V,V _{GS} = 0V,T _J =25℃			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0	3.0	4.0	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =40A		4.5	5.7	mΩ
Dynamic characteristics ²⁾						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f =1MHz		5572		pF
Output Capacitance	C _{oss}			482		
Reverse Transfer Capacitance	C _{rss}			275		
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} =10V, I _D =30A		92		nC
Gate-Source Charge	Q _{gs}			9		
Gate-Drain Charge	Q _{gd}			14		
Turn-on delay time	t _{d(on)}	V _{DD} =30V, V _{GS} =10V, I _D =30A, R _G =3Ω		12		nS
Turn-on rise time	t _r			8		
Turn-off delay time	t _{d(off)}			49		
Turn-off fall time	t _f			14		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =1A,T _J =25℃			1.2	V
Diode Forward Current	I _S				100	A
Reverse Recovery Time	T _{rr}	I _S =20A,di/dt = 100A/μs, T _J =25℃		31		nS
Reverse Recovery Charge	Q _{rr}			22		nC

Notes:

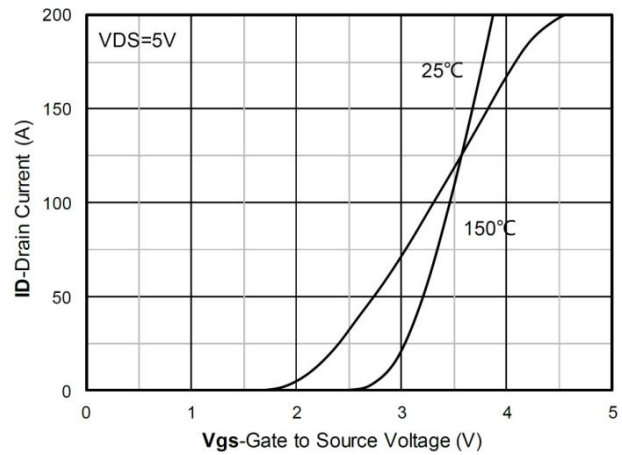
1) The EAS Test condition is $V_{DD}=30\text{V}, V_{GS}=10\text{V}, L=0.5\text{mH}, R_G=25\Omega$.

2) Guaranteed by design, not subject to production.

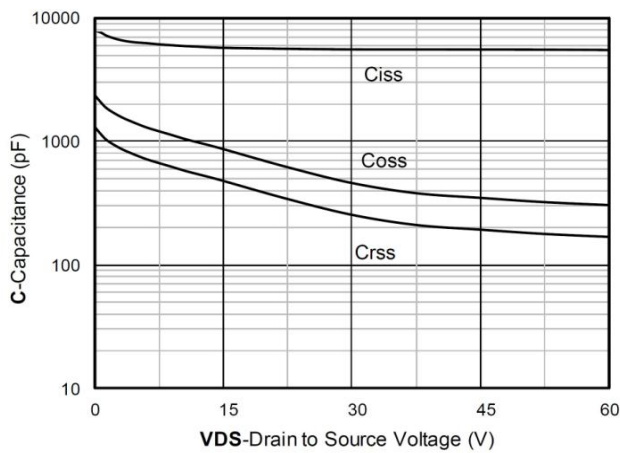
Typical Characteristics



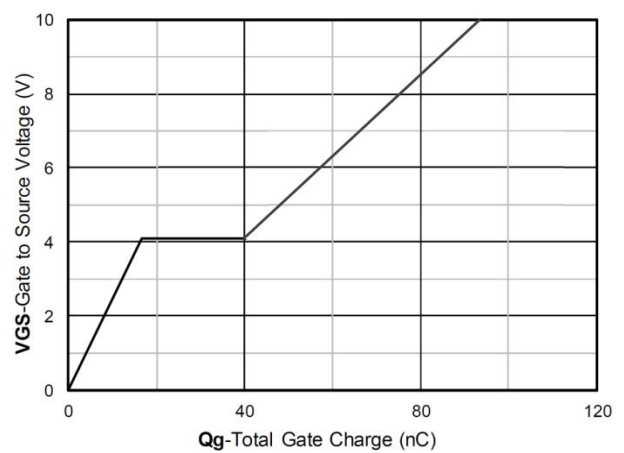
Output Characteristics



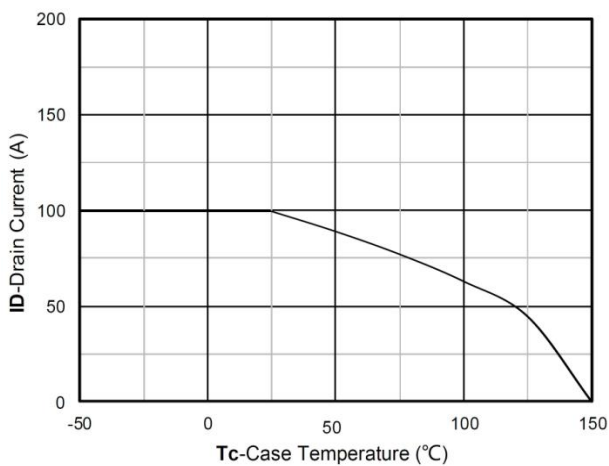
Transfer Characteristics



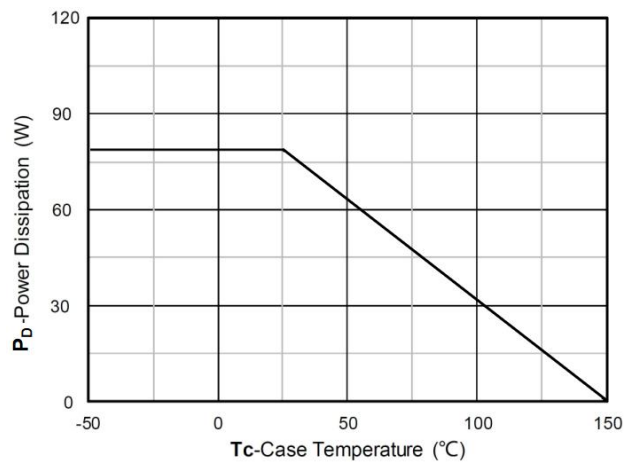
Capacitance Characteristics



Gate Charge

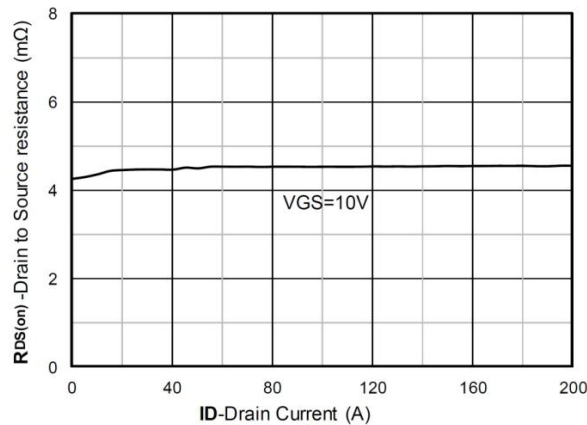


Current dissipation

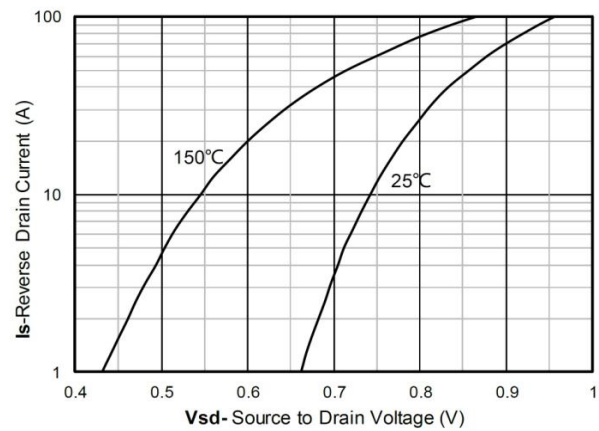


Power dissipation

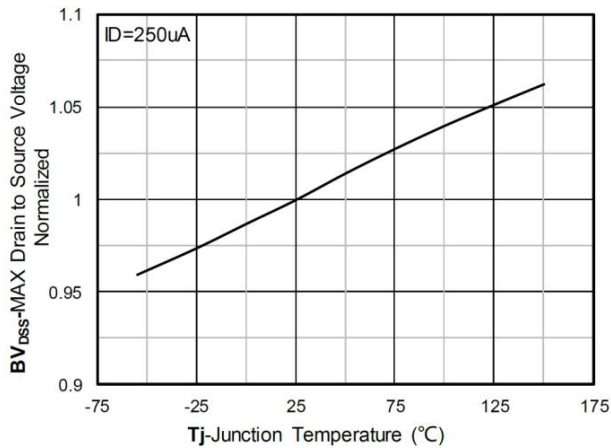
Typical Characteristics



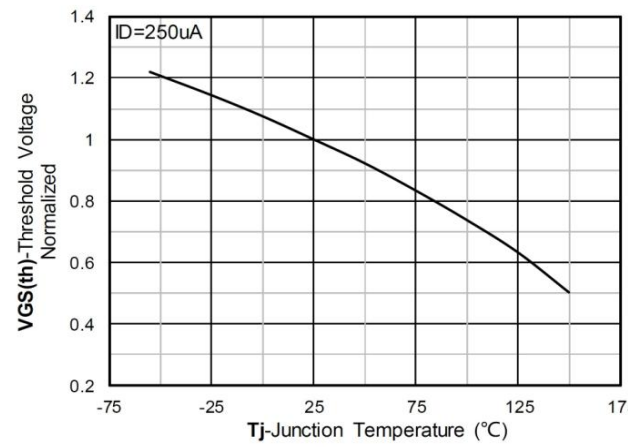
RDS(on) VS Drain Current



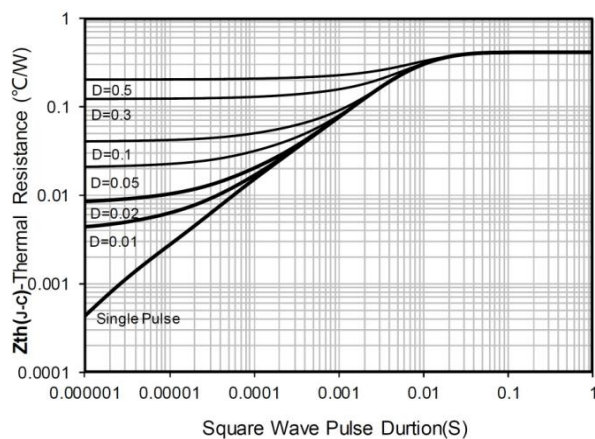
Forward characteristics of reverse diode



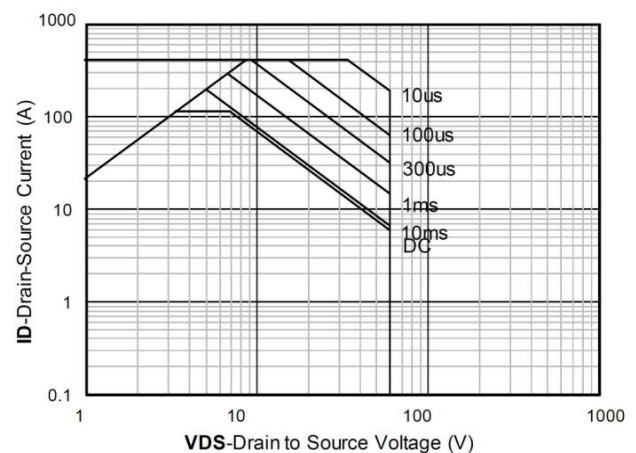
Normalized breakdown voltage



Normalized Threshold voltage

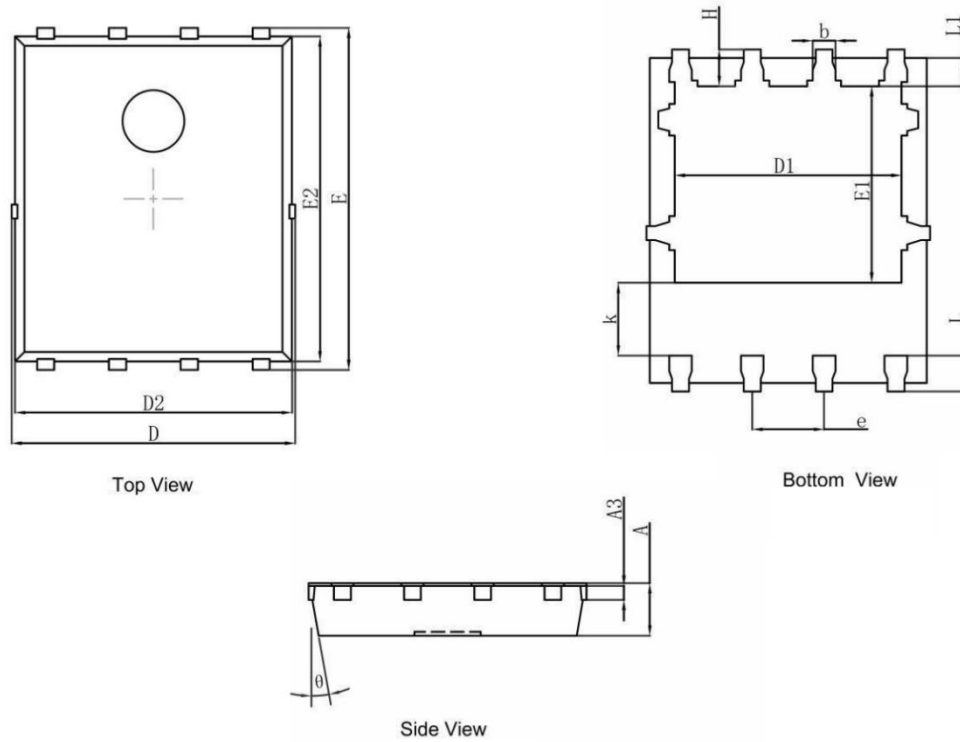


Maximum Transient Thermal Impedance



Safe Operation Area

PDFN5*6-8L Package Information



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	10°	12°	10°	12°