Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	8mΩ@-10V	-75A
	10mΩ@-4.5V	

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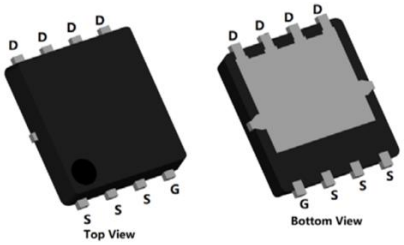
Feature

- Fast switching speed
- Surface mount package
- ROHS Compliant & Halogen-Free
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

Applications

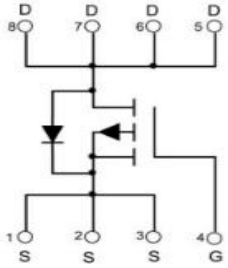
- DC-DC Converters.
- Motor Control.

Package

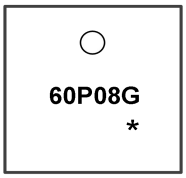


PDFN5×6-8L

Circuit diagram



Marking



60P08G :Device Code
***** :Month Code

Order Information

Device	Package	Unit/Tape
SP60P08GNK	PDFN5×6-8L	5000

Absolute maximum ratings (Ta=25℃,unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current(Tc=25°C)	I_D	-75	A
Continuous Drain Current(Tc=100°C)	I_D	-50	A
Pulse Drain Current Tested	I_{DM}	-300	A
Maximum Power Dissipation(Tc=25°C)	P_D	110	W
Single pulsed avalanche energy[1]	EAS	453	mJ
Thermal Resistance-Junction to Case	$R_{\theta JC}$	1.13	°C/W
Maximum Junction Temperature	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

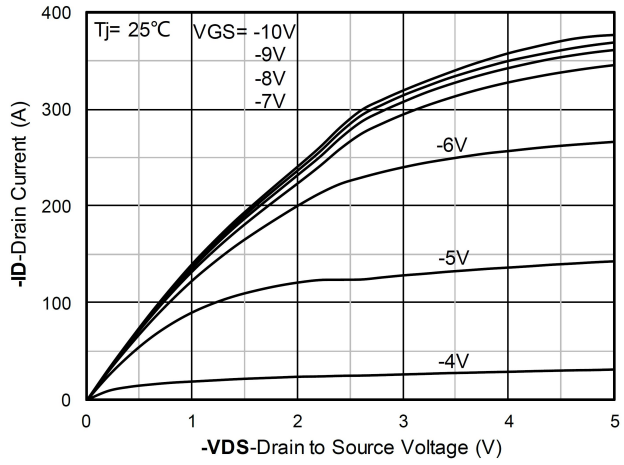
Electrical characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V , ID=-250uA	-60	-	-	V
Drain-Source Leakage Current	I_{DSS}	VDS=-48V , VGS=0V , TJ=25℃	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VGS=VDS , ID =-250uA	-1.0	-1.8	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS=-10V , ID=-15A	-	8	10	mΩ
		VGS=-4.5V , ID=-15A	-	10	13.5	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS=-30V , VGS=0V , f=1MHz	-	4483	-	pF
Output Capacitance	C_{oss}		-	865	-	
Reverse Transfer Capacitance	C_{rss}		-	22	-	
Switching Characteristics						
Total Gate Charge	Q_g	VDS=-30V , VGS=-10V , ID=-15A	-	52	-	nC
Gate-Source Charge	Q_{gs}		-	9	-	
Gate-Drain Charge	Q_{gd}		-	8	-	
Turn-On Delay Time	$T_{d(on)}$	VDD=-30V, VGS=-10V , RG=3Ω, ID=-15A	-	18	-	ns
Rise Time	T_r		-	20	-	
Turn-Off Delay Time	$T_{d(off)}$		-	54	-	
Fall Time	T_f		-	34	-	
Diode Characteristics						
Diode Forward Voltage	V_{SD}	VGS=0V , IS=-1A , TJ=25℃	-	-	-1.2	V
Reverse recover time	T_{rr}	I_S=-15A, di/dt=100A/us, TJ=25℃	-	49	-	ns
Reverse recovery charge	Q_{rr}		-	70	-	nC
Diode Continuous Current	I_S		-	-	-75	A

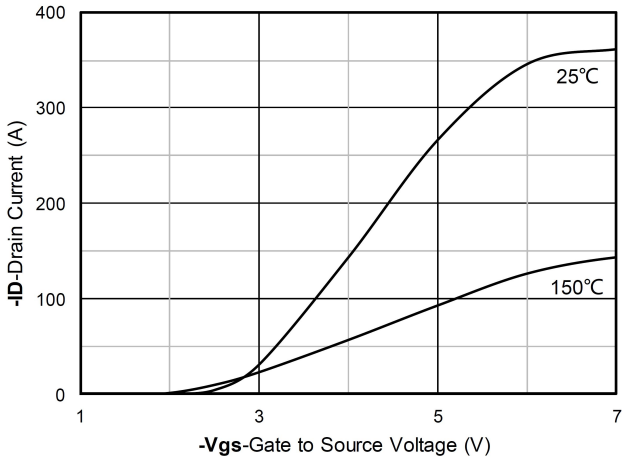
Note:

1. EAS is tested at starting TJ = 25℃, VDD=-30V,VGS = -10V,L = 0.5mH, Rg=25mΩ;

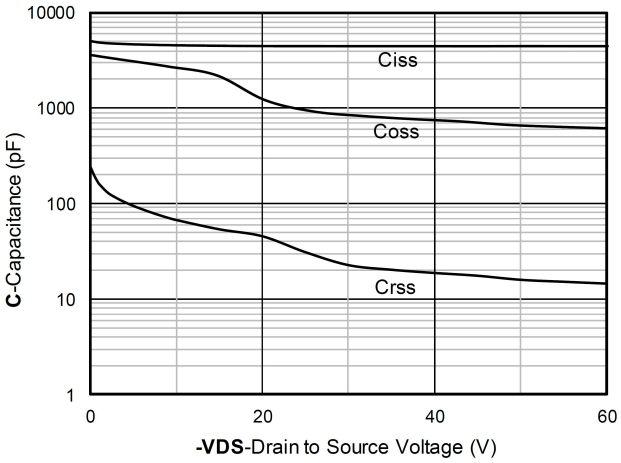
Typical Characteristics



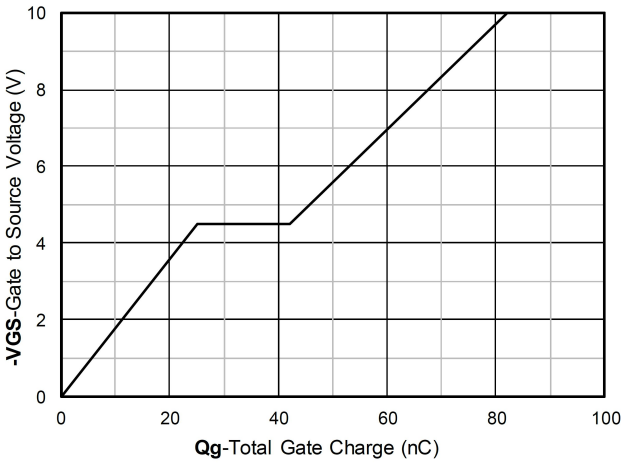
Output Characteristics



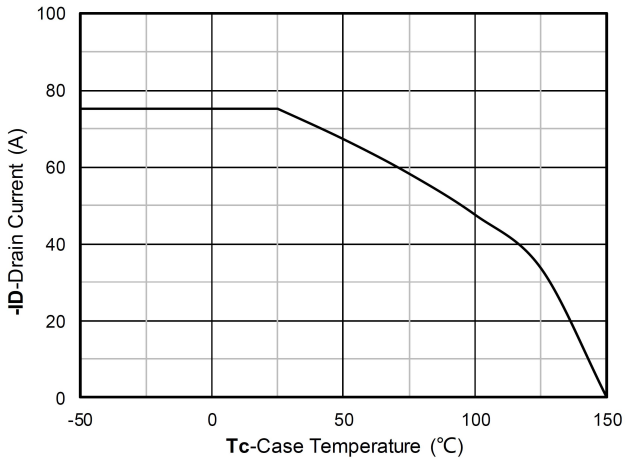
Transfer Characteristics



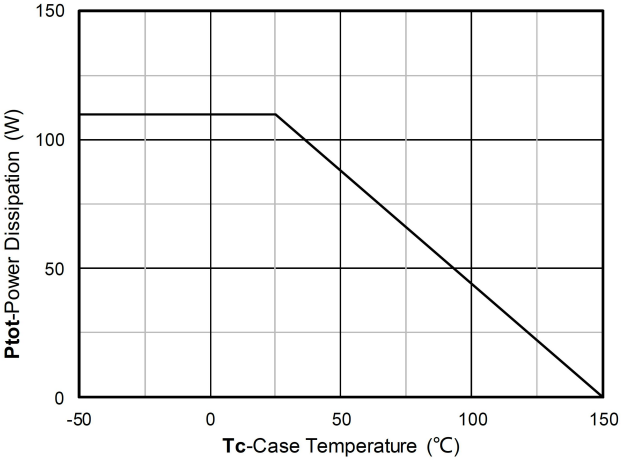
Capacitance Characteristics



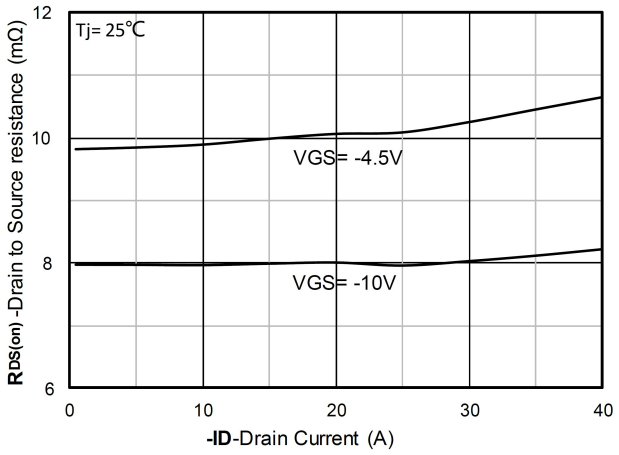
Gate Charge



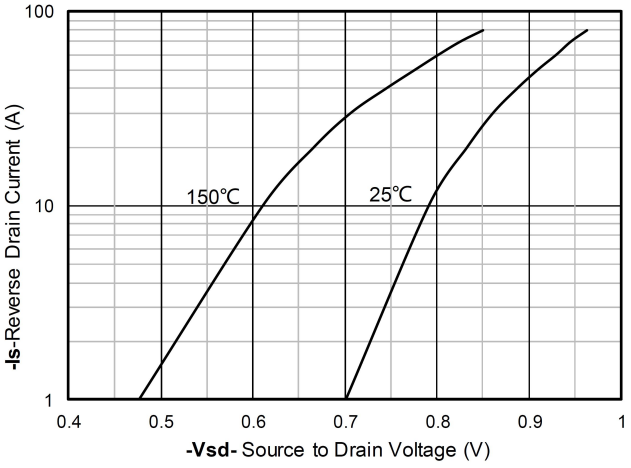
Current dissipation



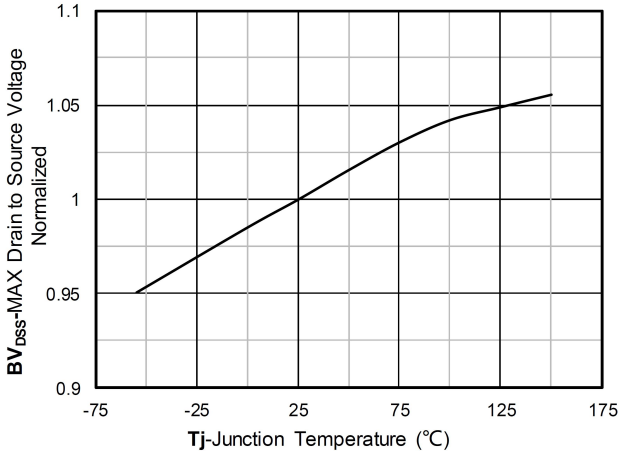
Power dissipation



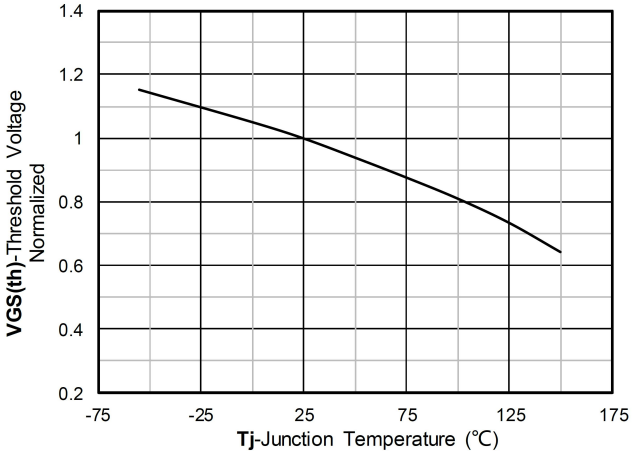
RDS(on) VS Drain Current



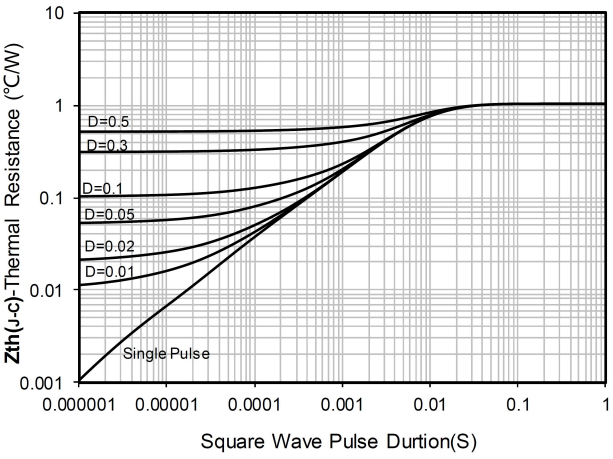
Forward characteristics of reverse diode



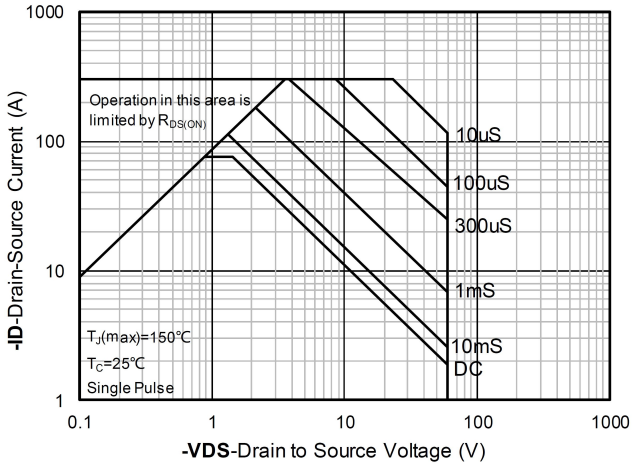
Normalized breakdown voltage



Normalized Threshold voltage

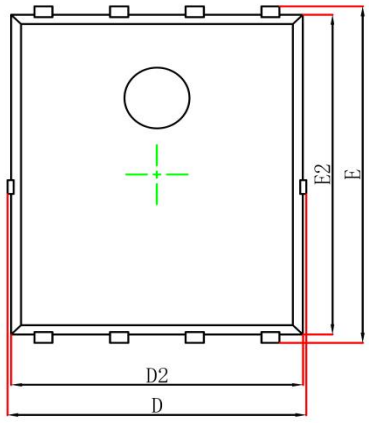


Maximum Transient Thermal Impedance

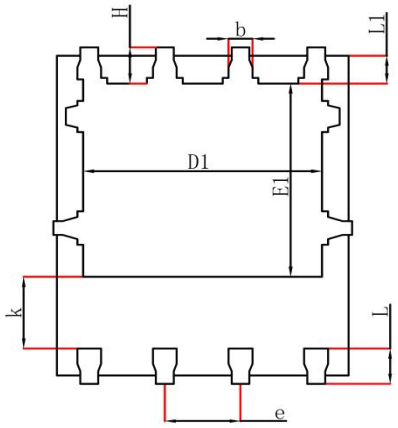


Safe Operation Area

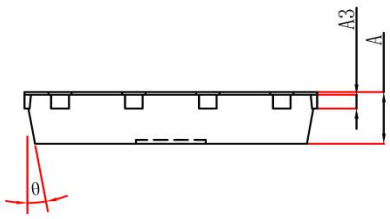
PDFN5X6-8L Package Information



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	10°	12°	10°	12°