

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	60mΩ@10V	14A
	70mΩ@10V	

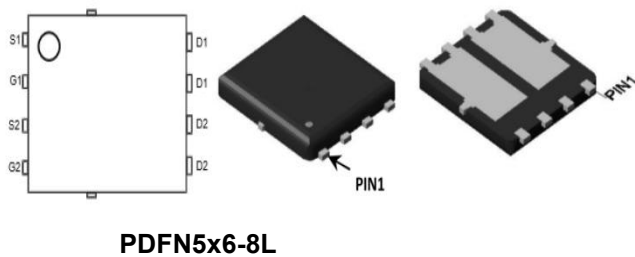
Feature

- Fast switching speed
- Surface mount package
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

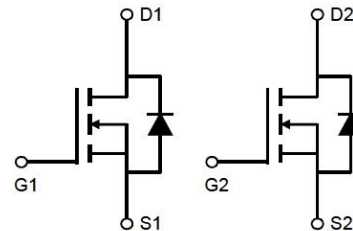
Applications

- Power management functions
- Industrial and Motor Drive application
- DC-DC Converters

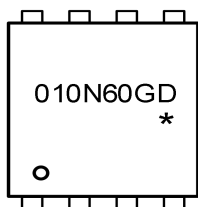
Package



Circuit diagram



Marking



010N60GD =Device Code
* =Month Code

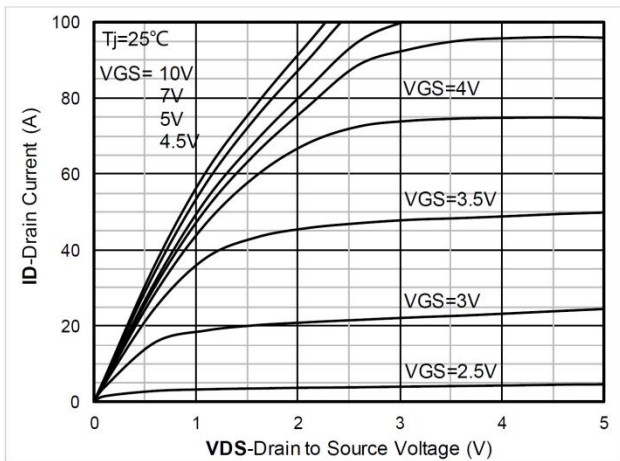
Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current – Continuous	I _D	14	A
Drain Current – Pulsed	I _{DM}	56	A
Power Dissipation (T _C =25°C)	P _D	47.8	W
Thermal Resistance Junction to Case	R _{θJC}	2.6	°C/W
Storage Temperature Range	T _{STG}	-50 to 150	°C
Operating Junction Temperature Range	T _J	-50 to 150	°C

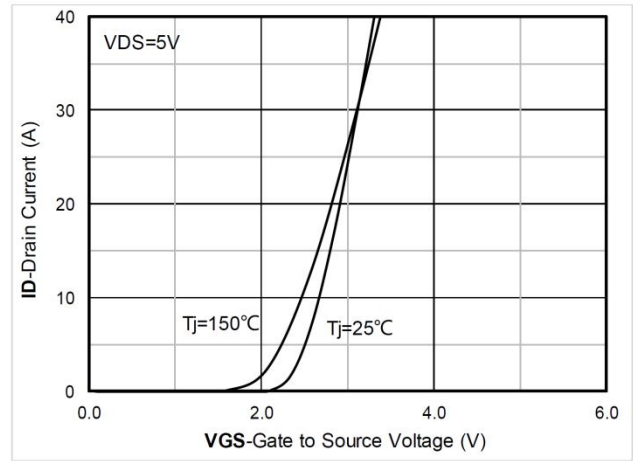
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	B _{VDS}	V _{GS} =0V, I _D =250uA	100	---	---	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	---	---	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	1	1.8	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =6A	---	60	75	mΩ
		V _{GS} =4.5V, I _D =4A	---	70	95	mΩ
Dynamic Characteristics						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =5.0A	---	6.1	---	nC
Gate-Source Charge	Q _{gs}		---	1.7	---	
Gate-Drain Charge	Q _{gd}		---	1.5	---	
Turn-On Delay Time	T _{d(on)}	V _{GS} =10V, V _{DD} =50V, I _D =5.0A, R _{GEN} =2Ω	---	8.8	---	ns
Rise Time	T _r		---	3.7	---	
Turn-Off Delay Time	T _{d(off)}		---	19	---	
Fall Time	T _f		---	7.5	---	
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ	---	345	---	pF
Output Capacitance	C _{oss}		---	65	---	
Reverse Transfer Capacitance	C _{rss}		---	9.8	---	
Drain-Source Body Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1.2	V

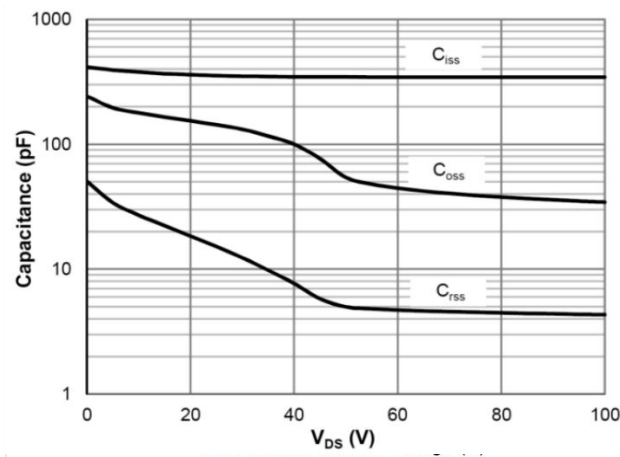
Typical Characteristics



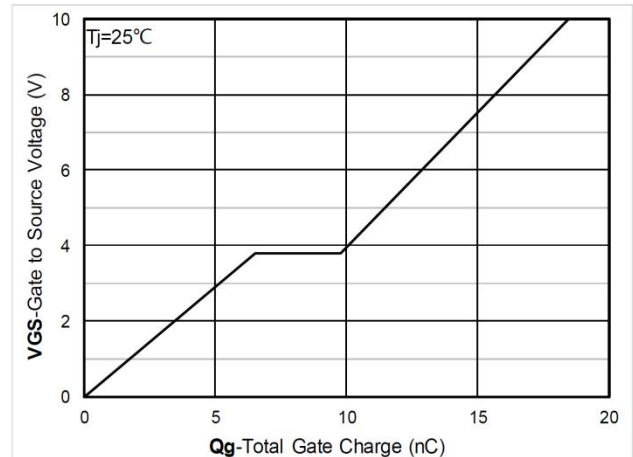
Output Characteristics



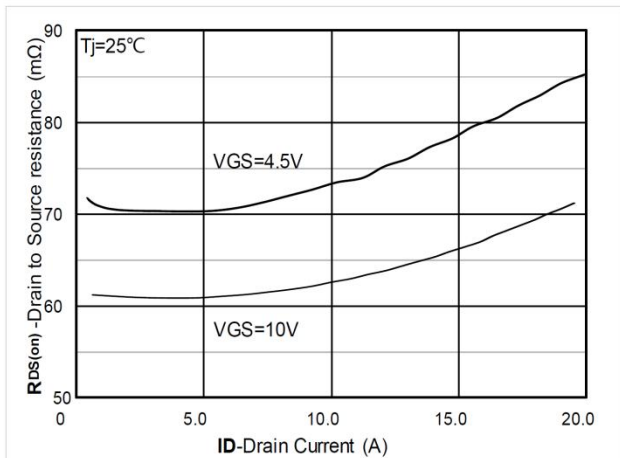
Transfer Characteristics



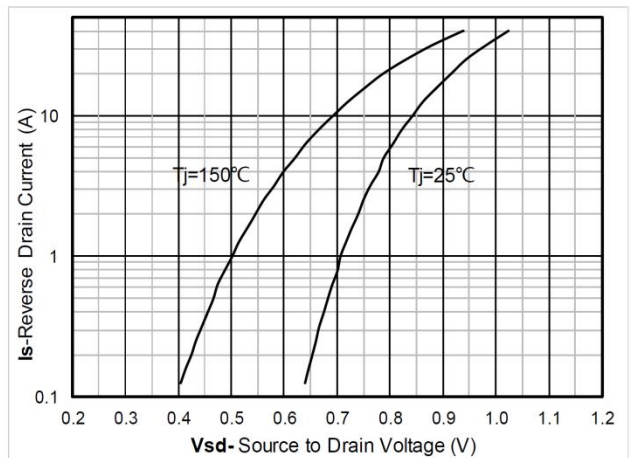
Capacitance Characteristics



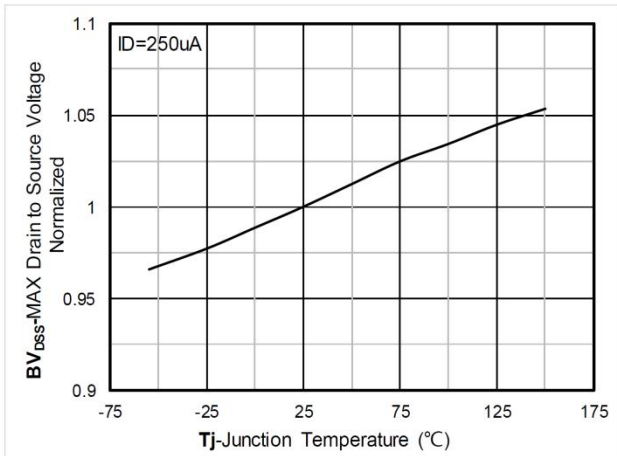
Gate Charge



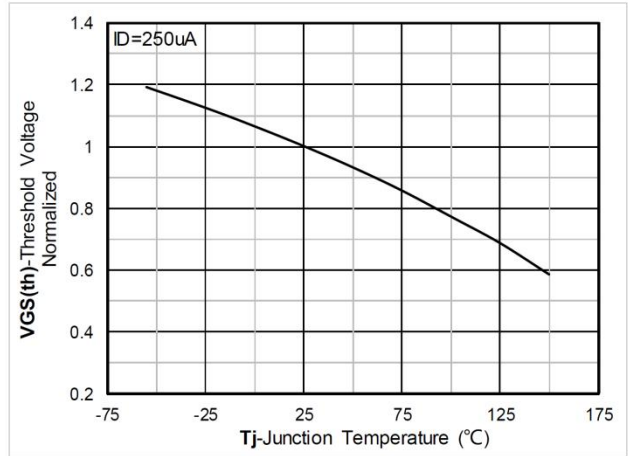
$R_{DS(on)}$ VS Drain Current



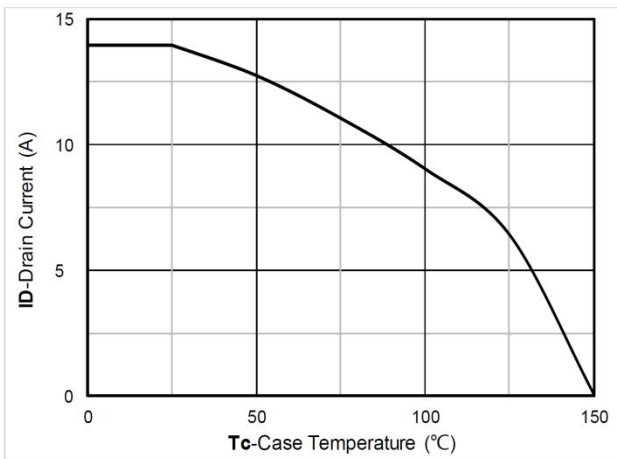
Forward characteristics of reverse diode



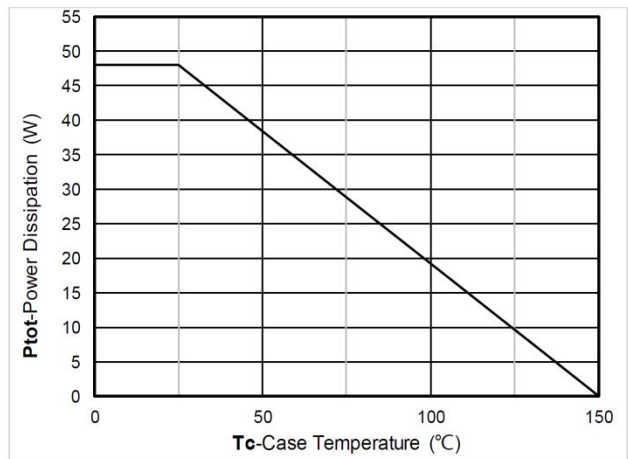
Normalized breakdown voltage



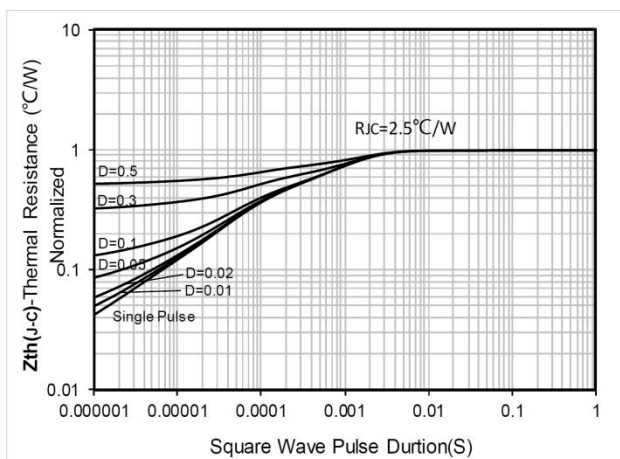
Normalized Threshold voltage



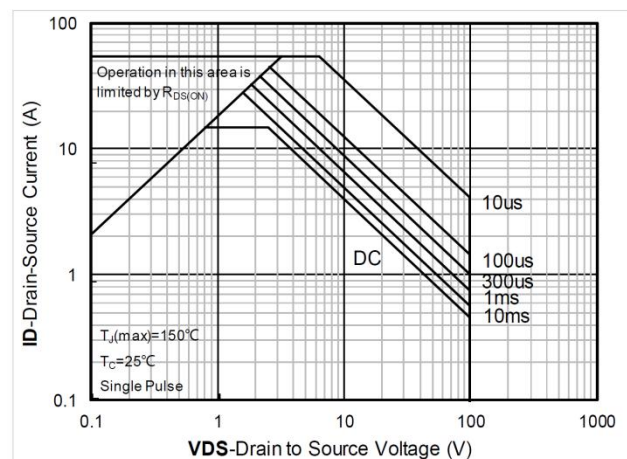
Current dissipation



Power dissipation



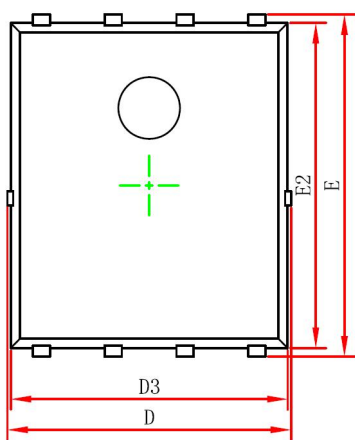
Maximum Transient Thermal Impedance



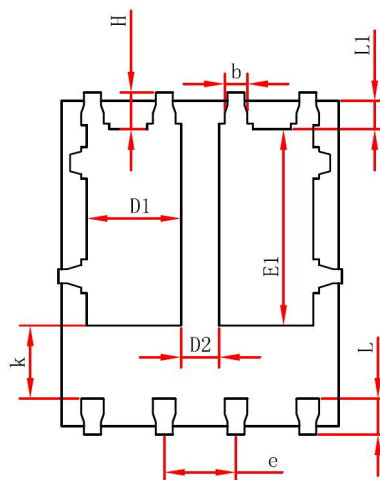
Safe Operation Area



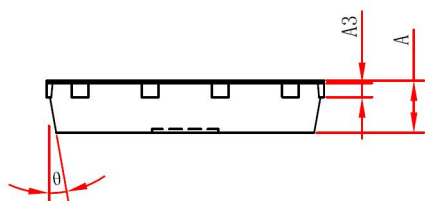
PDFN5x6-8L Package Information



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	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	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°

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