

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	6.5mΩ@10V	18A
	8.0mΩ@4.5V	

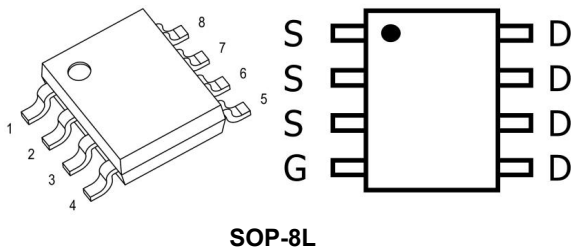
### Feature

- Fast Switching
- Low Gate Charge and Rds on
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

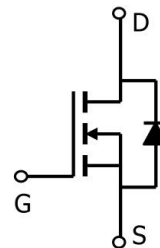
### Applications

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC converter
- Inverters

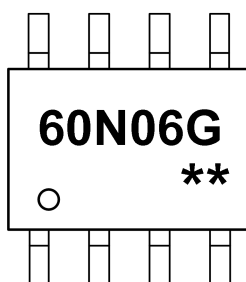
### Package



### Circuit diagram



### Marking



60N06G : Product code  
\*\* : Week code.

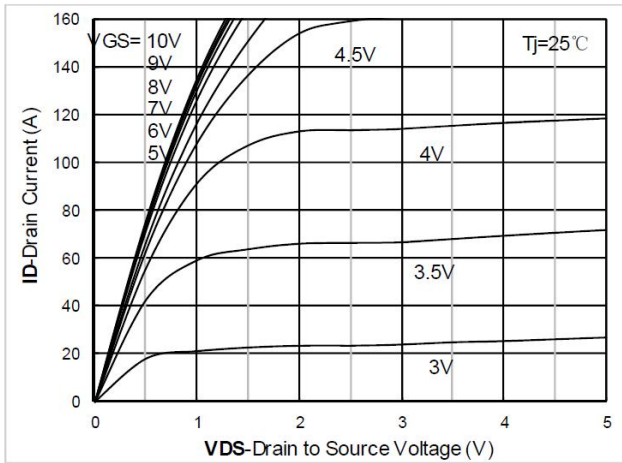
**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V <sub>DS</sub>	60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Drain Current – Continuous	I <sub>D</sub>	18	A
Drain Current – Pulsed <sup>1</sup>	I <sub>DM</sub>	72	A
Power Dissipation (TC=25°C)	P <sub>D</sub>	2.7	W
Thermal Resistance Junction to ambient	R <sub>θJA</sub>	46.3	°C/W
Storage Temperature Range	T <sub>STG</sub>	-50 to 150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-50 to 150	°C

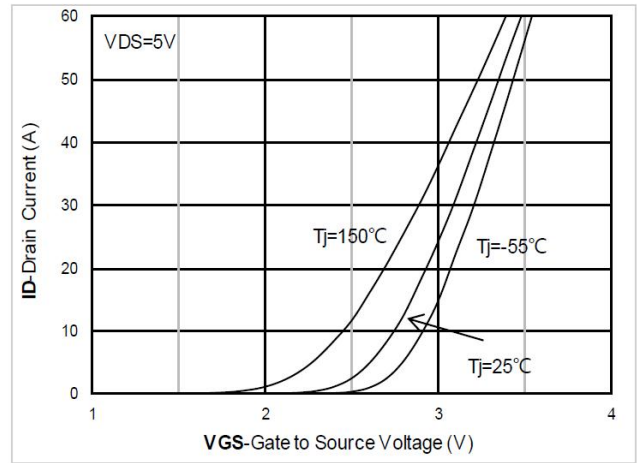
**Electrical characteristics (Ta=25°C, unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	B <sub>VDS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	60	---	---	V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V	---	---	1	uA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1	1.8	2.5	V
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	100	nA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =12A	---	6.5	8	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =10A	---	8	11	mΩ
<b>Dynamic Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =30V, I <sub>D</sub> =12.0A	---	34	---	nC
Gate-Source Charge	Q <sub>gs</sub>		---	7.9	---	
Gate-Drain Charge	Q <sub>gd</sub>		---	5.2	---	
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =30V, I <sub>D</sub> =12.0A, R <sub>GEN</sub> =2Ω	---	11.7	---	ns
Rise Time	T <sub>r</sub>		---	36	---	
Turn-Off Delay Time	T <sub>d(off)</sub>		---	30.9	---	
Fall Time	T <sub>f</sub>		---	57	---	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHZ	---	1982	---	pF
Output Capacitance	C <sub>oss</sub>		---	390	---	
Reverse Transfer Capacitance	C <sub>rss</sub>		---	13	---	
<b>Drain-Source Body Diode Characteristics</b>						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =3A, T <sub>J</sub> =25°C	---	---	1.2	V

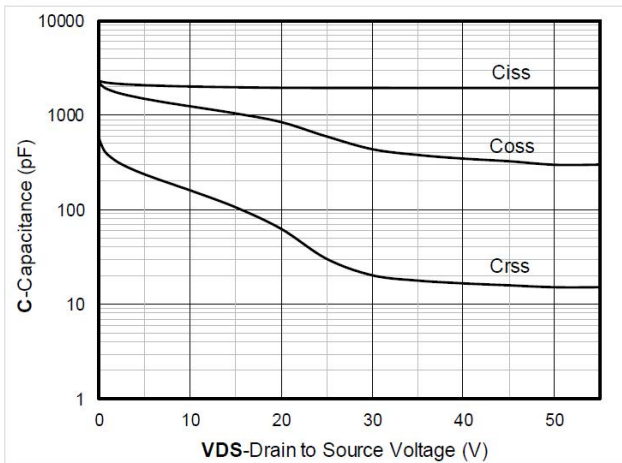
**Typical Characteristics**



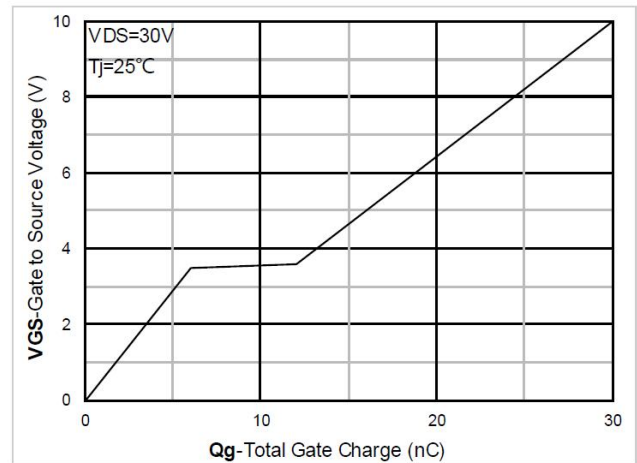
Output Characteristics



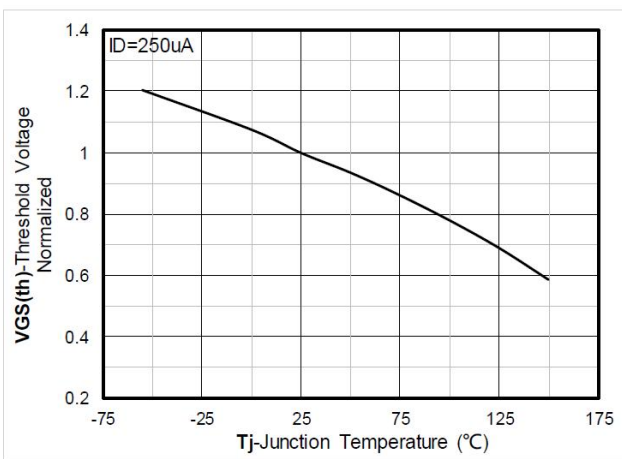
Transfer Characteristics



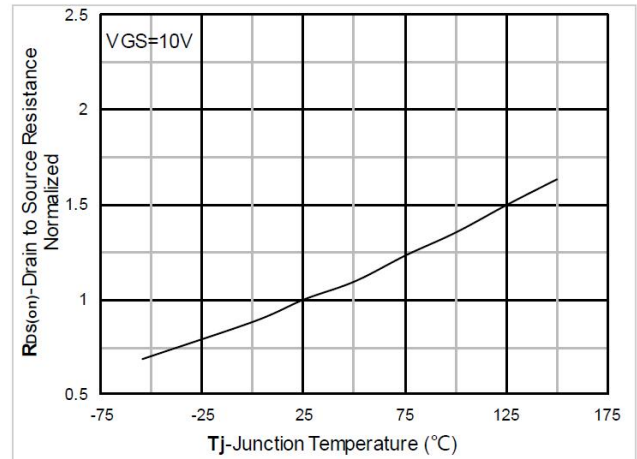
Capacitance Characteristics



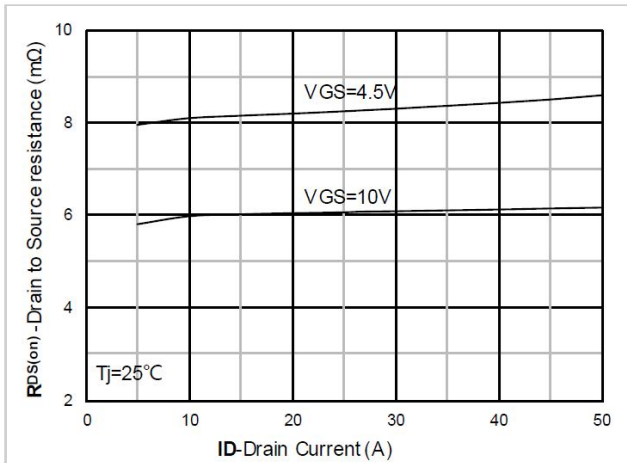
Gate Charge



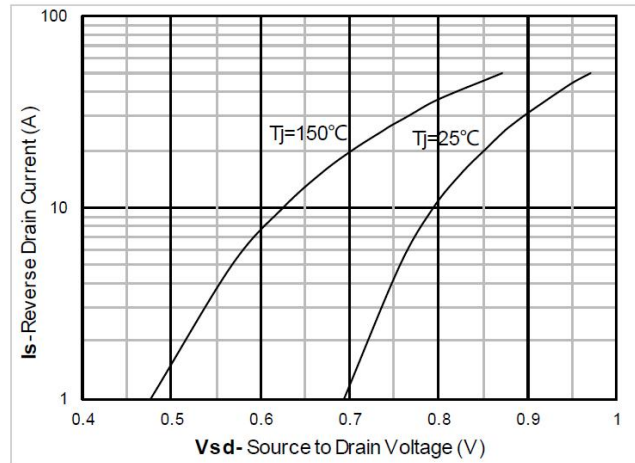
Normalized Threshold voltage



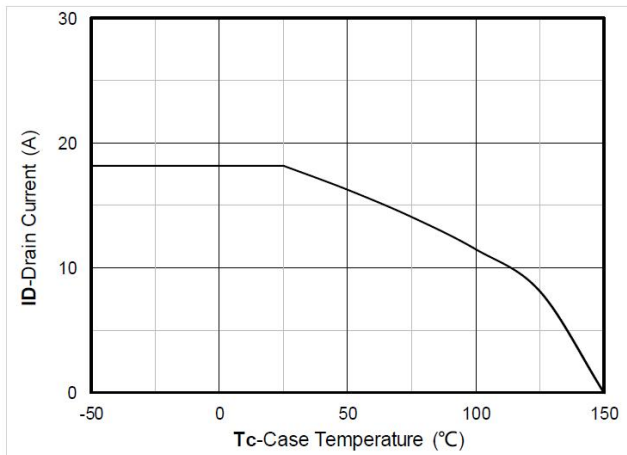
Normalized On-Resistance



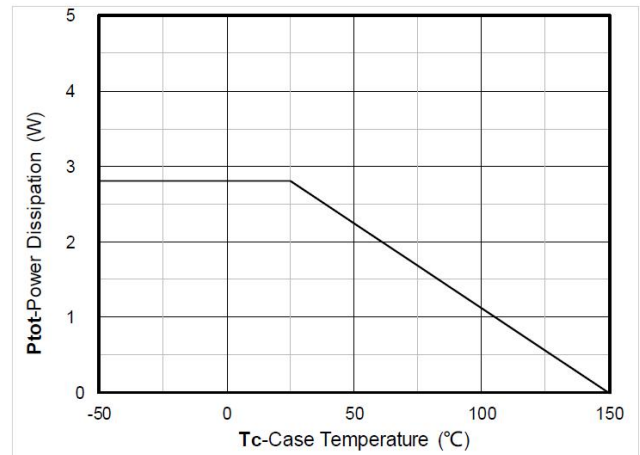
RDS(on) VS Drain Current



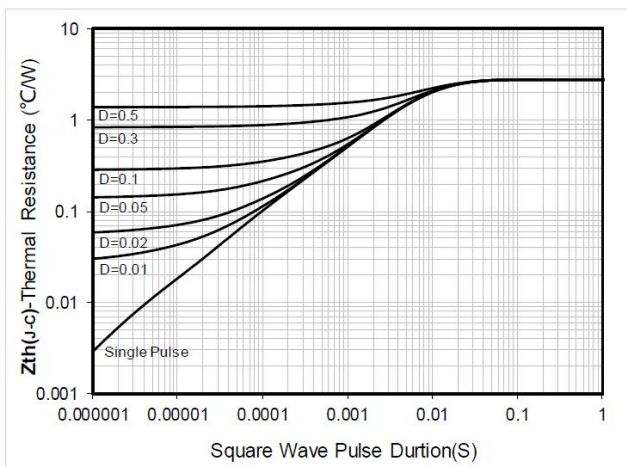
Forward characteristics of reverse diode



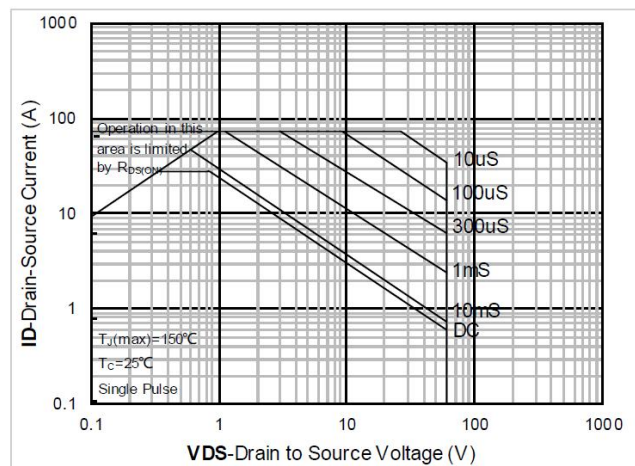
Current dissipation



Power dissipation



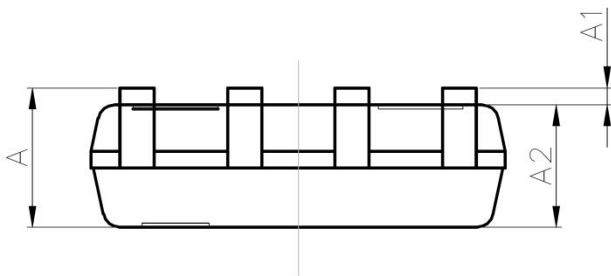
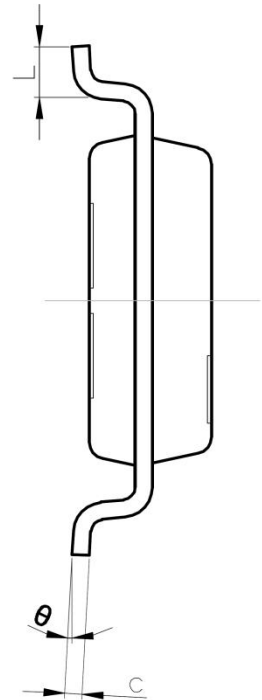
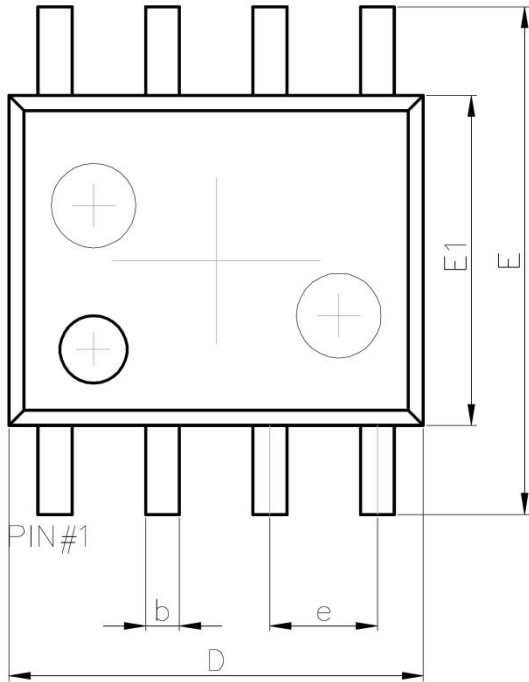
Maximum Transient Thermal Impedance



Safe Operation Area



SOP-8L Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
$\theta$	0°	8°

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