

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	12mΩ@10V	12A
	15mΩ@4.5V	

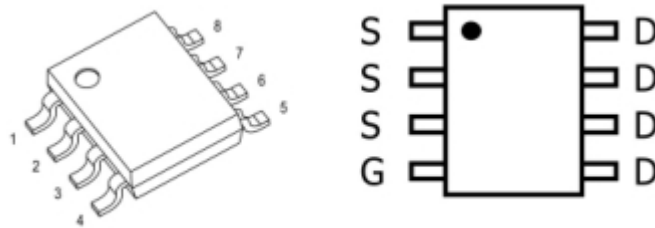
Feature

- Fast Switching
- Extremely low switching loss
- Excellent Rdson and Low Gate Charge

Applications

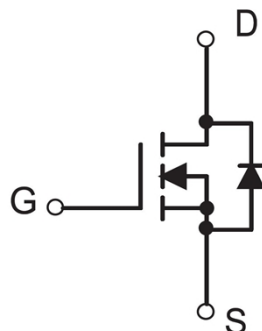
- Power Management
- Switched mode power supply

Package

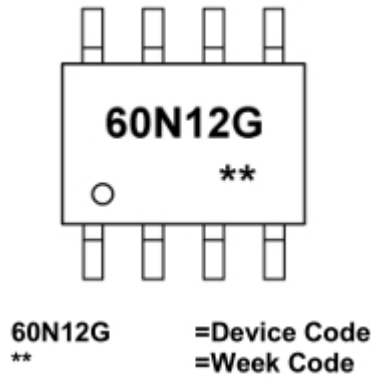


SOP-8L

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°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 ¹⁾ , T _C =25 °C	I _D	12	A
Pulsed drain current ²⁾ , T _C =25 °C	I _{DM}	48	A
Power dissipation ³⁾	P _D	3.3	W
Single pulsed avalanche energy ⁴⁾	E _{AS}	110	mJ
Thermal resistance, junction-Ambient	R _{θJA}	37.8	°C/W
Operation and storage temperature	T _{STG} , T _J	-55 to 150	°C

Electrical characteristics

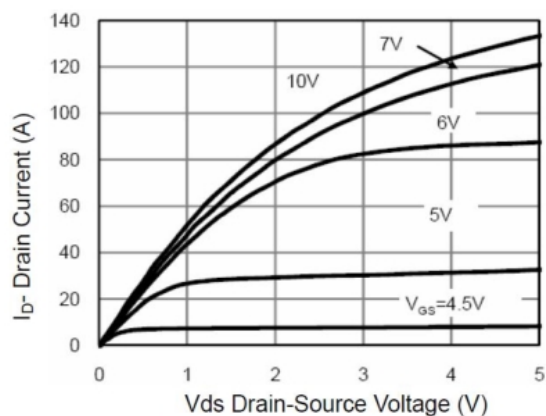
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	60			V
Gate-source leakage current	I _{GSS}	V _{GS} = ±20V			±100	uA
Drain-source leakage current	I _{DSS}	V _{DS} =48V, V _{GS} = 0V			1	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A		12	16	mΩ
		V _{GS} =4.5V, I _D =6A		15	22	
Dynamic and Switching Characteristics						
Input capacitance	C _{iSS}	V _{GS} =0V, V _{DS} =25V, f=1MHz		940		pF
Output capacitance	C _{oSS}			235		
Reverse transfer capacitance	C _{rSS}			10		
Total gate charge	Q _g	V _{GS} =10V , V _{DS} =30V , I _D =20A		23		pF
Gate-source charge	Q _{gs}			4.8		
Gate-drain charge	Q _{gd}			4.0		
Switching Characteristics						
Turn-On Delay Time	T _{d(on)}	V _{GS} =10V, V _{DS} =30V, R _G =1.6Ω, I _D =20A		4.7		nS
Rise Time	T _r			2.9		
Turn-Off Delay Time	T _{d(off)}			14		
Fall Time	t _f			2.9		
Drain-Source Body Diode Characteristics						
Diode forward voltage	V _{SD}	V _{GS} =0V ,I _S =1A			1.2	V

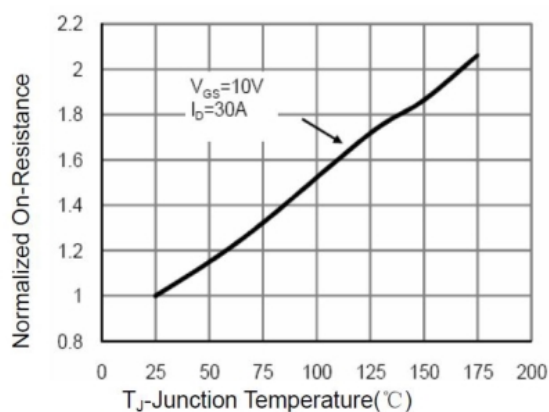
Note:

1. Calculated continuous current based on maximum allowable junction temperature.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. P_d is based on max. junction temperature, using junction-case thermal resistance.
4. $V_{DD}=30V, V_{GS}=10V, L=0.5mH$, starting $T_J=25^{\circ}\text{C}$.

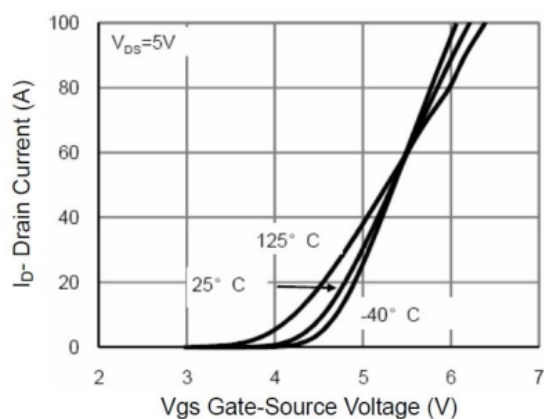
Typical Characteristics



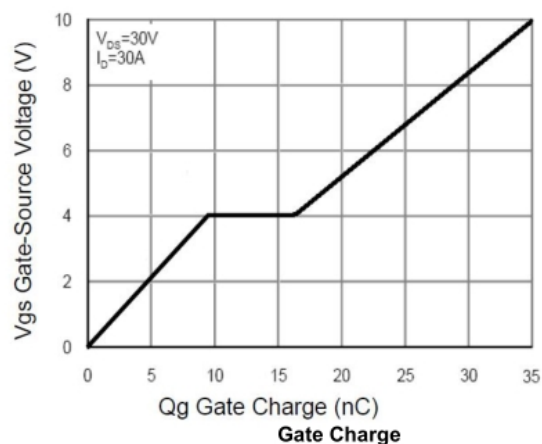
Output Characteristics



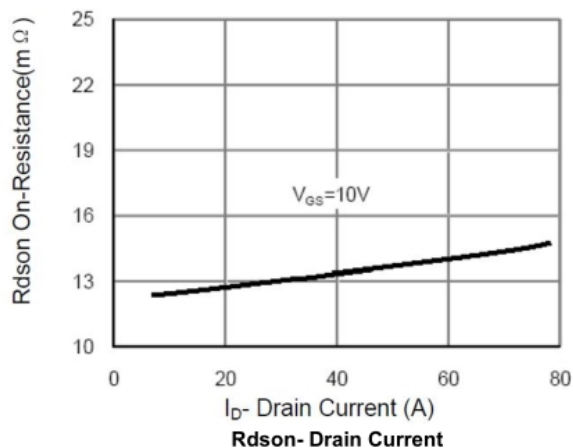
Rdson-Junction Temperature



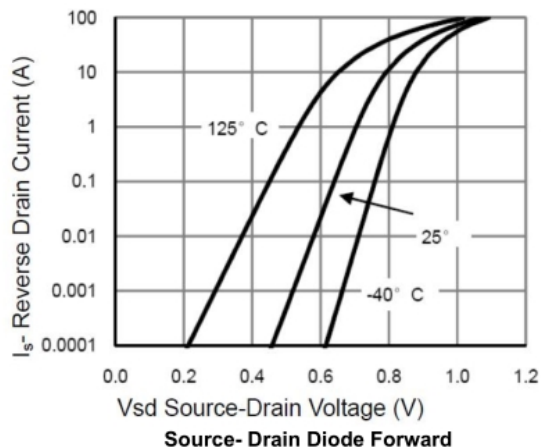
Transfer Characteristics



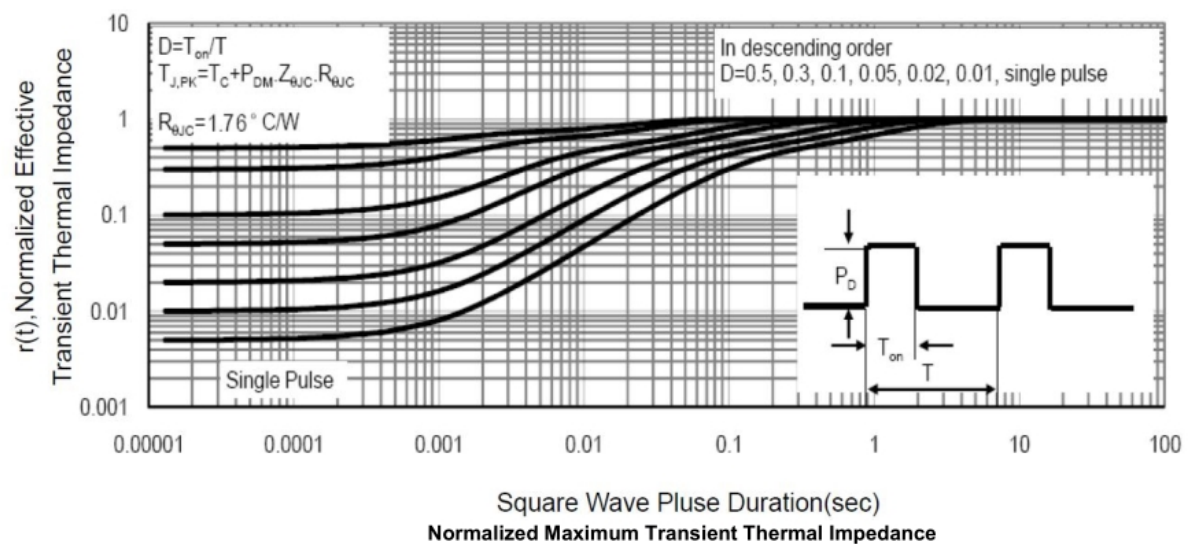
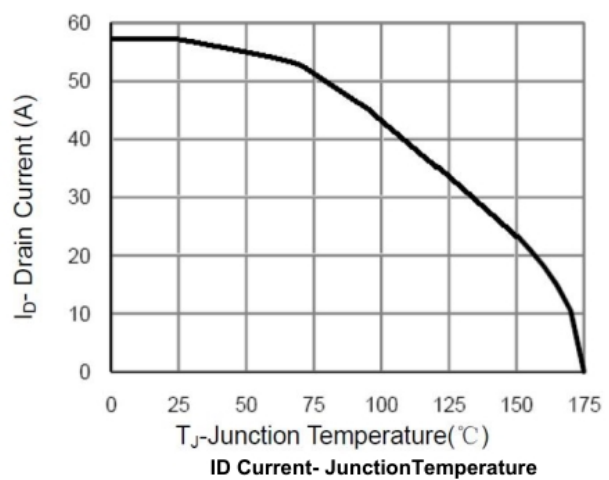
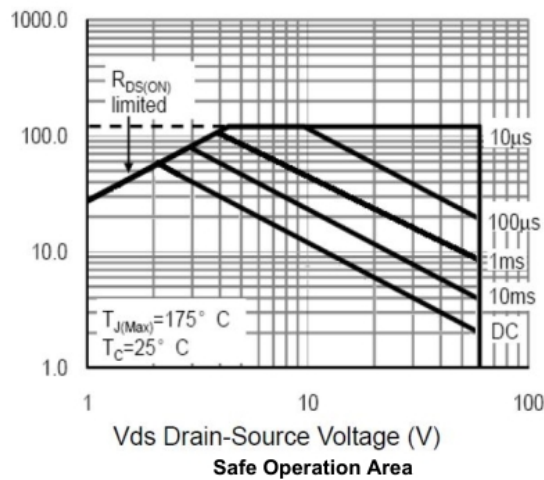
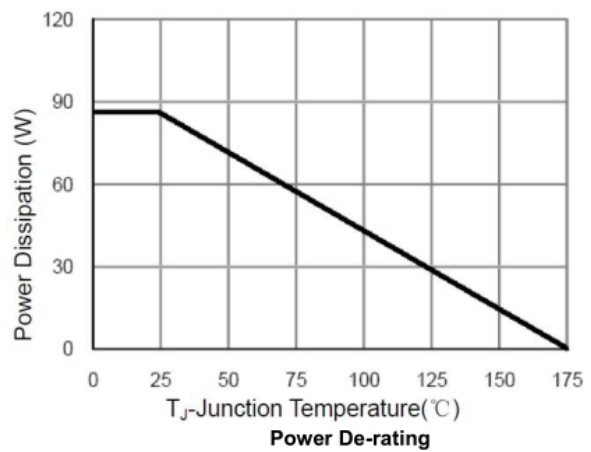
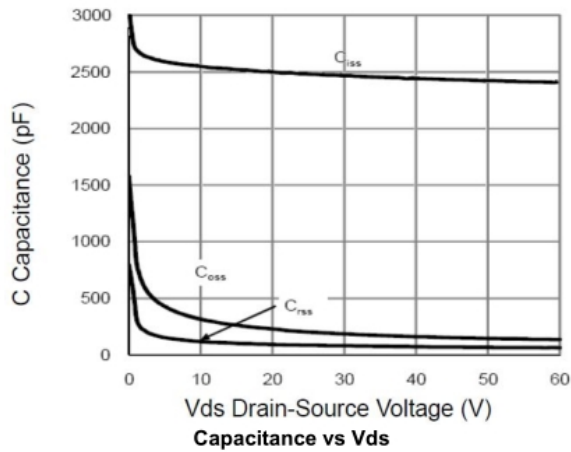
Gate Charge



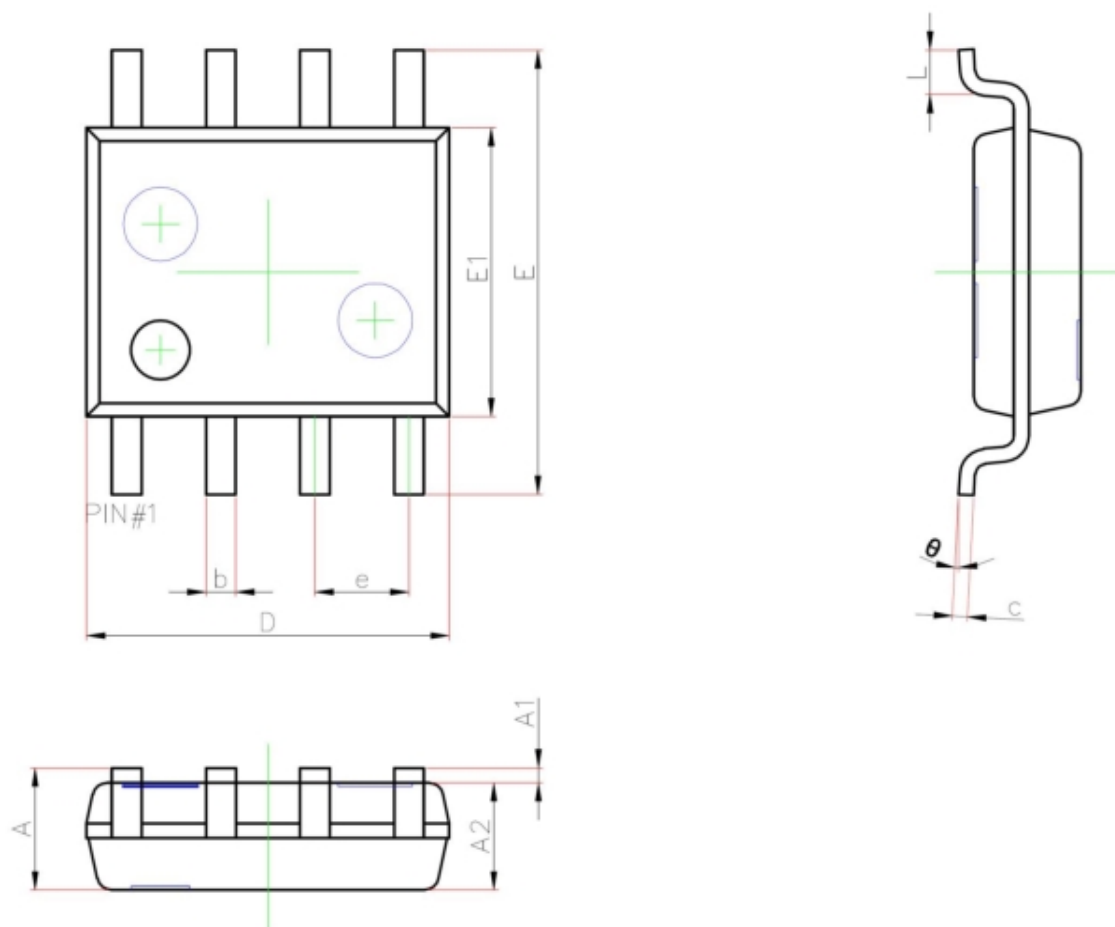
Rdson- Drain Current



Source- Drain Diode Forward



SOP-8 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
θ	0°	8°