

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	6mΩ@10V	80A

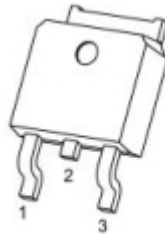
## Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

## Applications

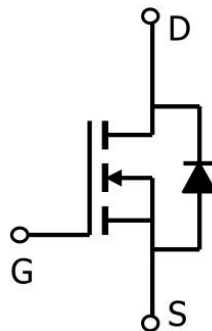
- Power switching application
- DC-DC Converter
- Power Management

## Package

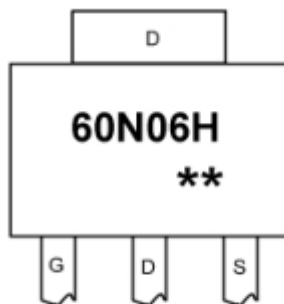


TO-252-2L(G:1 D:2 S:3)

## Circuit diagram



## Marking



**60N06H** : Product code  
**\*\*** : Week code

## Absolute maximum ratings

(T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current(T <sub>c</sub> =25°C)	I <sub>D</sub>	80	A
Pulsed drain current	I <sub>DM</sub>	320	A
Power dissipation(T <sub>c</sub> =25°C)	P <sub>D</sub>	108	W
Single Pulse Avalanche Energy <sup>1</sup>	E <sub>AS</sub>	169	mJ
Thermal Resistance-Junction to Case	R <sub>θJC</sub>	1.16	°C/ W
Storage Temperature Range	T <sub>STG</sub> , T <sub>J</sub>	-55~ +150	°C

## Electrical characteristics

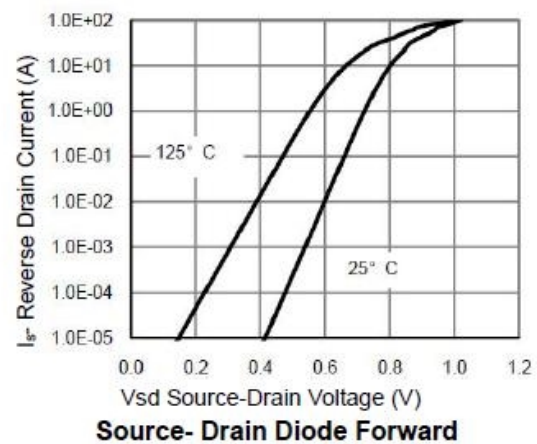
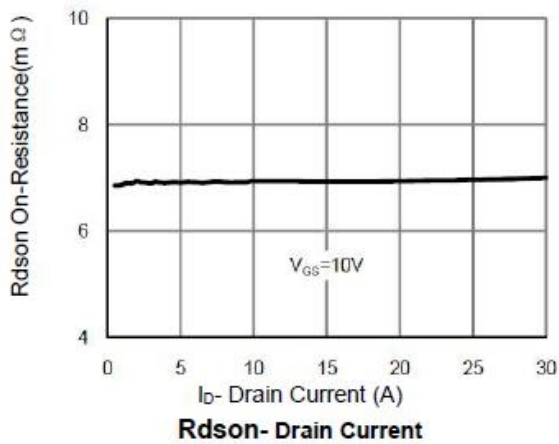
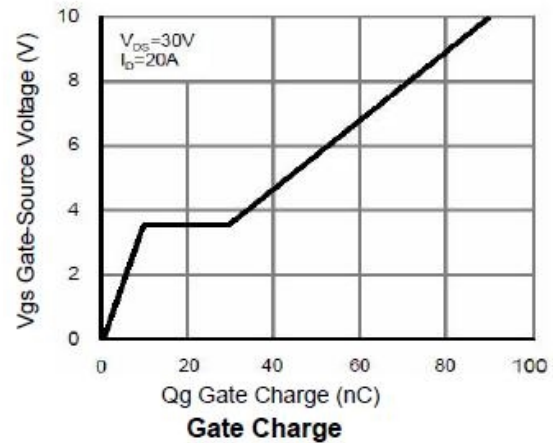
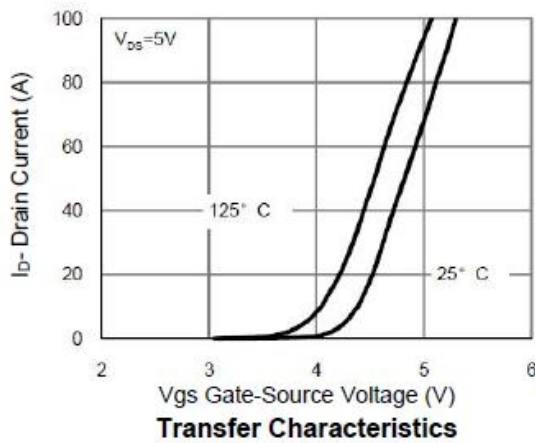
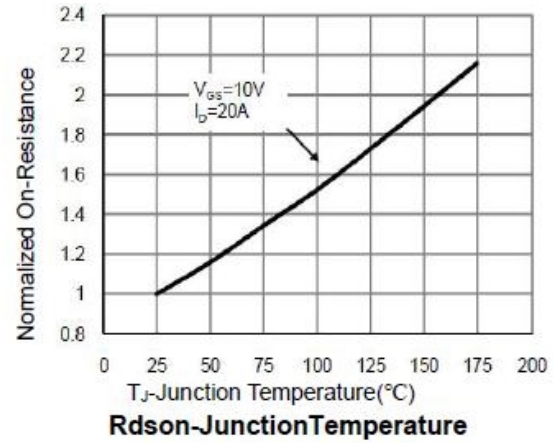
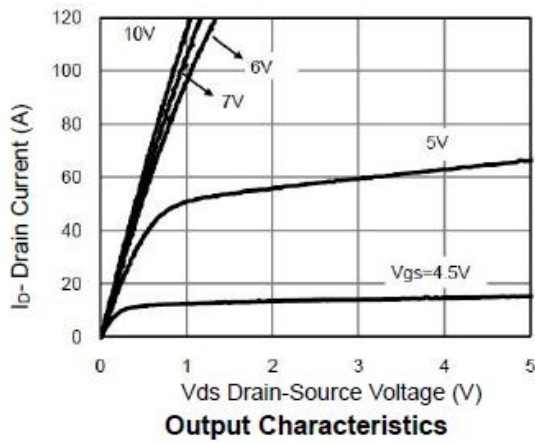
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

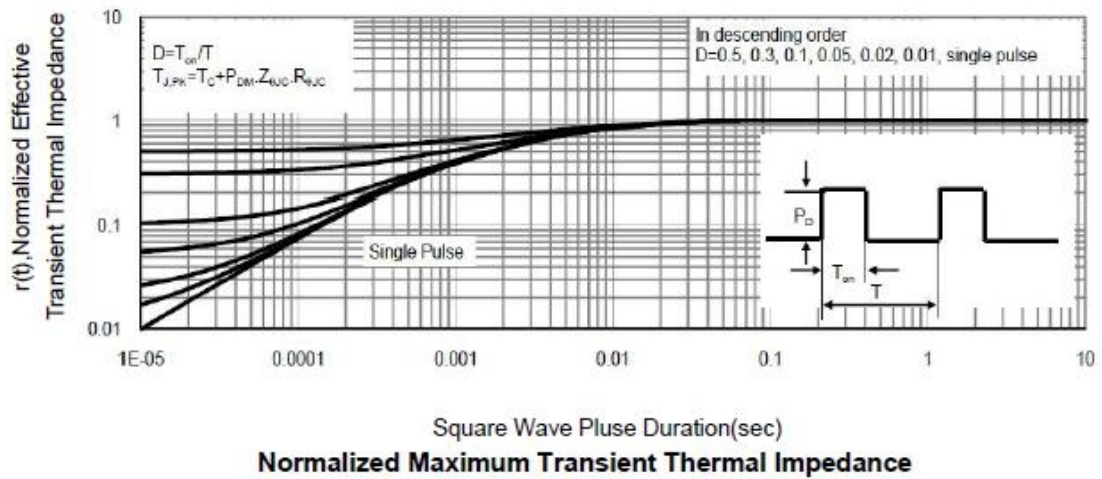
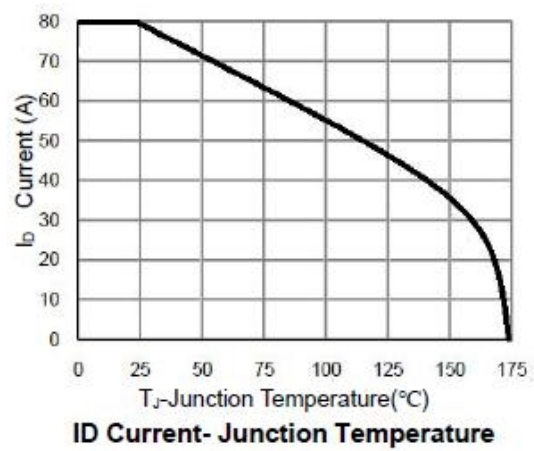
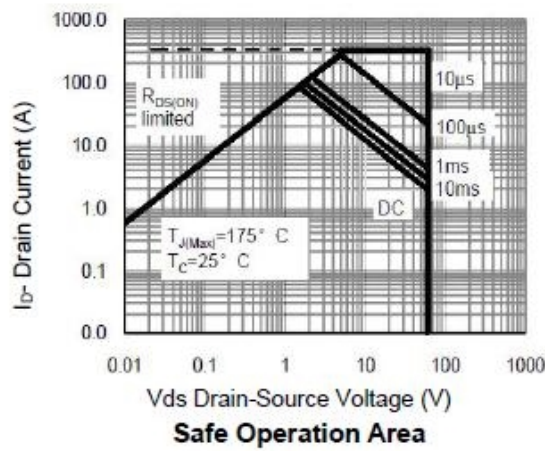
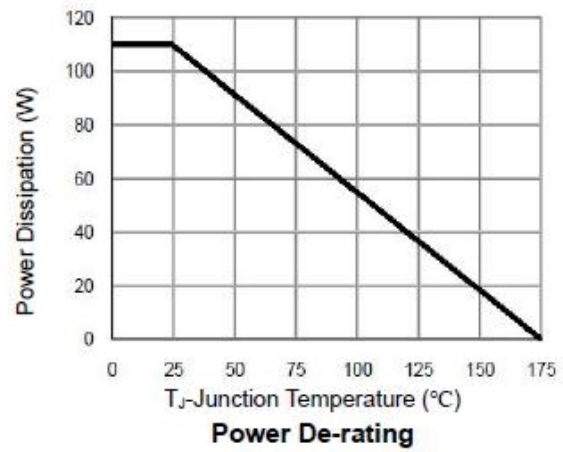
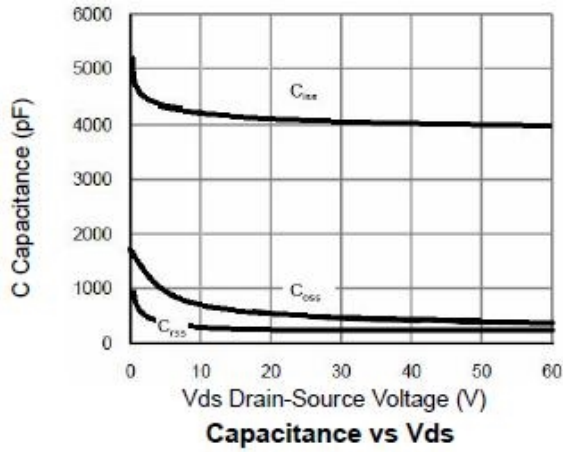
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Drain-source leakage current	I <sub>DSS</sub>	V <sub>DS</sub> =48V,V <sub>GS</sub> = 0V			1	uA
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V			±0.1	uA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2.0	3.0	4.0	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A		6	7.5	mΩ
Dynamic Characteristics Reverse						
Input Capacitance	C <sub>iSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHz		4010		pF
Output Capacitance	C <sub>oSS</sub>			293		
Transfer Capacitance	C <sub>rSS</sub>			215		
Switching Characteristics						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =30V , V <sub>GS</sub> =10V , I <sub>D</sub> =20A		91		pF
Gate-Source Charge	Q <sub>gs</sub>			9		
Gate-Drain Charge	Q <sub>gd</sub>			18.5		
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =30V, R <sub>L</sub> =1Ω, R <sub>G</sub> =3Ω		8.5		nS
Rise Time	T <sub>r</sub>			7		
Turn-Off Delay Time	T <sub>d(off)</sub>			41		
Fall Time	t <sub>f</sub>			14		
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V ,I <sub>S</sub> =1A			1.2	V

### Note :

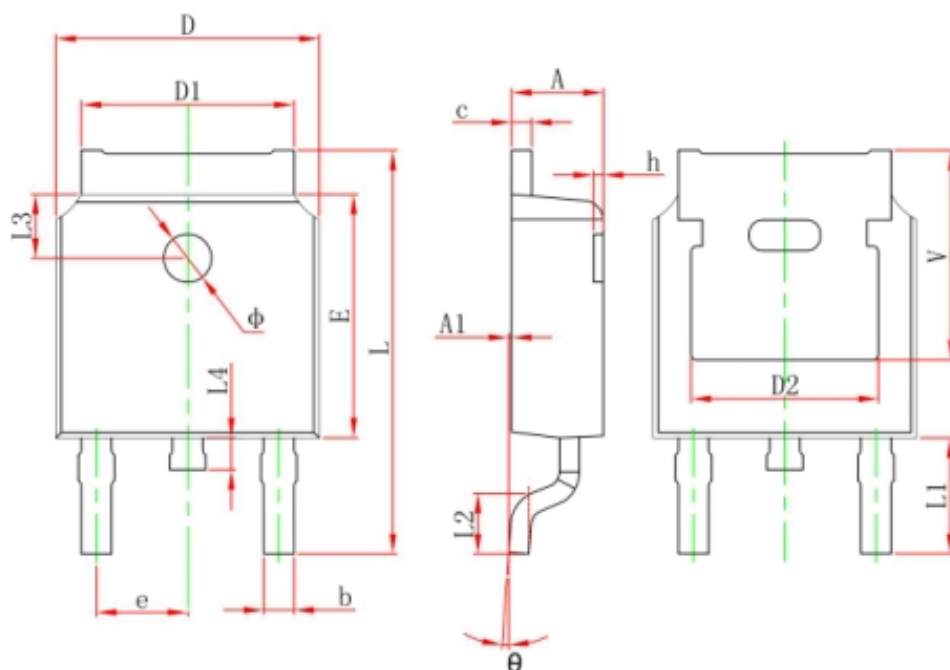
1.  $E_{AS}$  is tested at starting  $T_j = 25^{\circ}\text{C}$ ,  $V_{DD}=30V, V_{GS} = 10V, L = 0.5mH, R_g=25m\Omega$ ;

## Typical Characteristics





## TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
$\Phi$	1.100	1.300	0.043	0.051
$\theta$	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	