

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	6mΩ@10V	90A

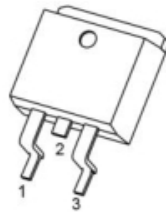
## Feature

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

## Applications

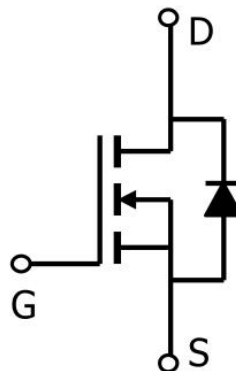
- Power switching application
- DC-DC Converter
- Power Management

## Package

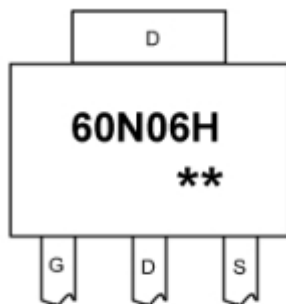


TO-263(G:1 D:2 S:3)

## 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>	90	A
Pulse Drain Current Tested	I <sub>DM</sub>	360	A
Power dissipation(T <sub>c</sub> =25°C)	P <sub>D</sub>	110	W
Single Pulse Avalanche Energy <sup>1</sup>	E <sub>AS</sub>	316	mJ
Thermal Resistance-Junction to Case	R <sub>θJC</sub>	1.13	°C/ W
Storage Temperature Range	T <sub>STG</sub> , T <sub>J</sub>	-55~ +150	°C

## Electrical characteristics

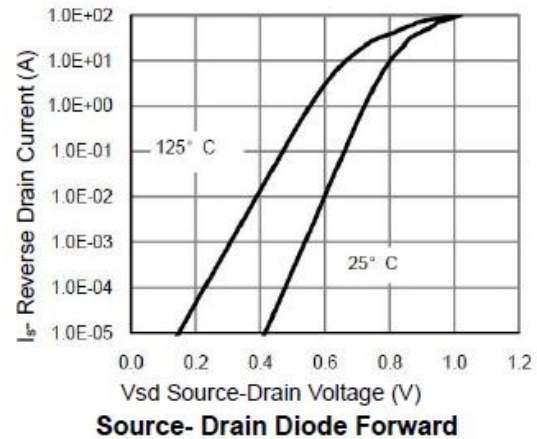
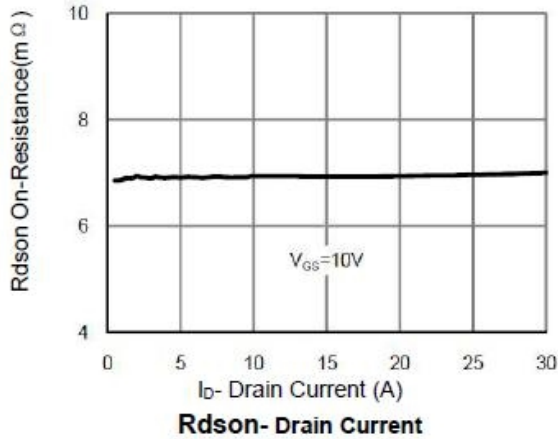
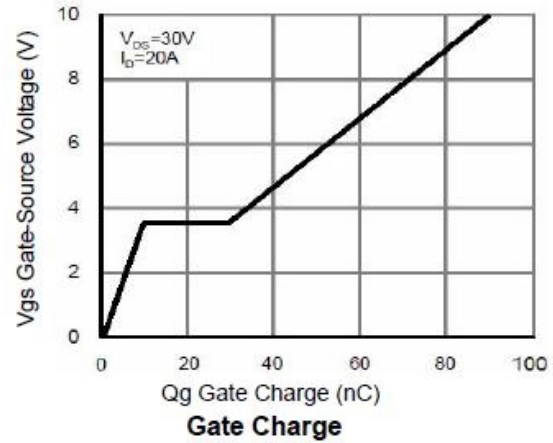
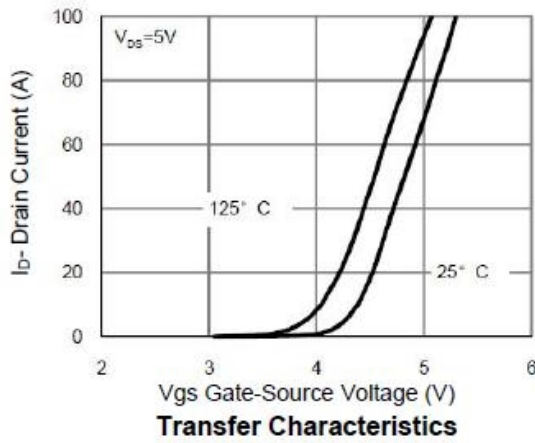
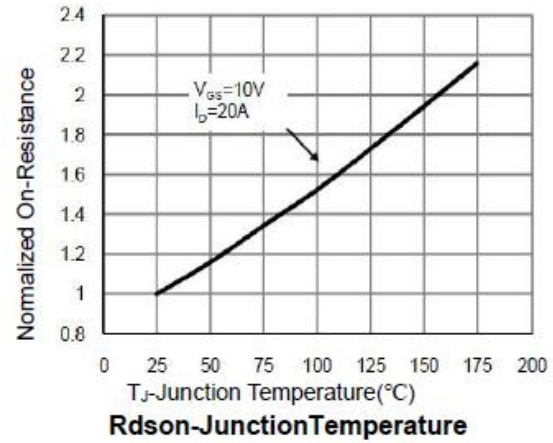
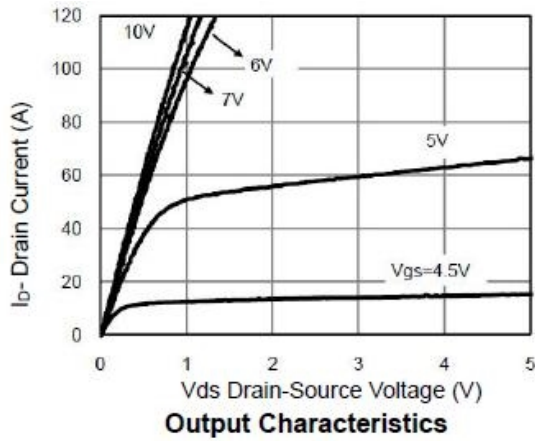
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

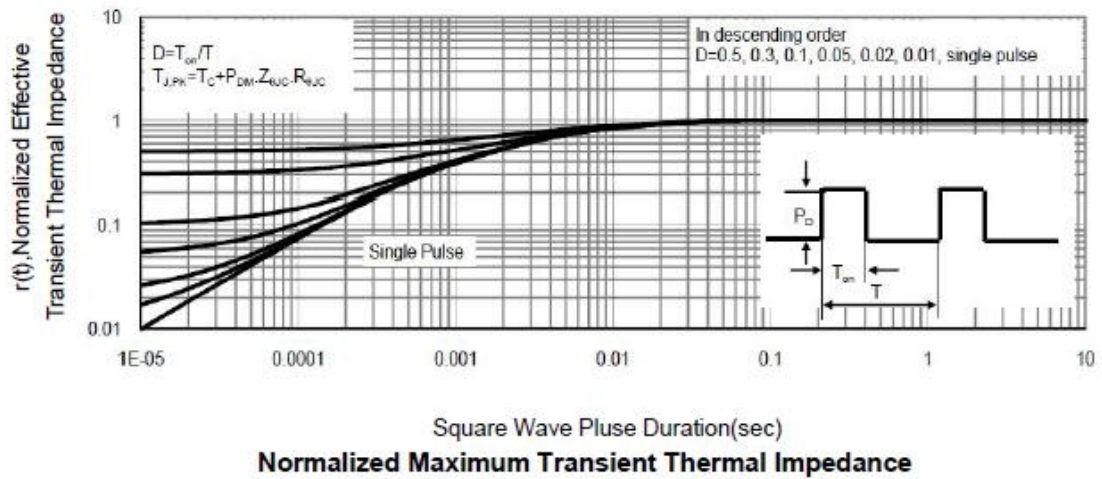
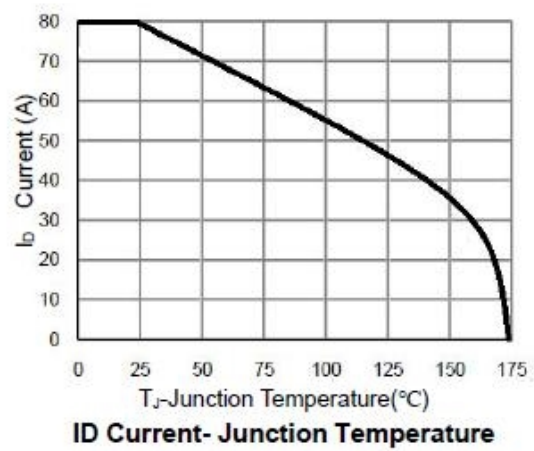
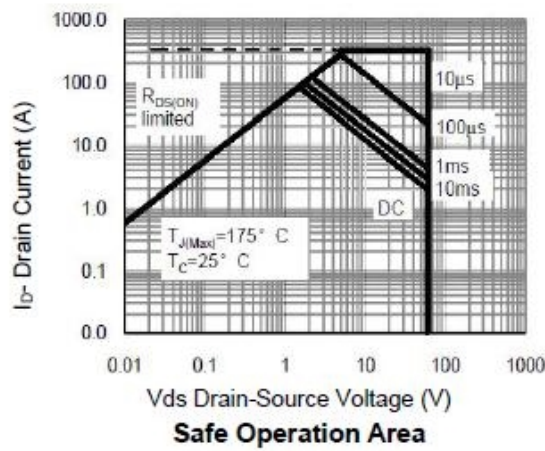
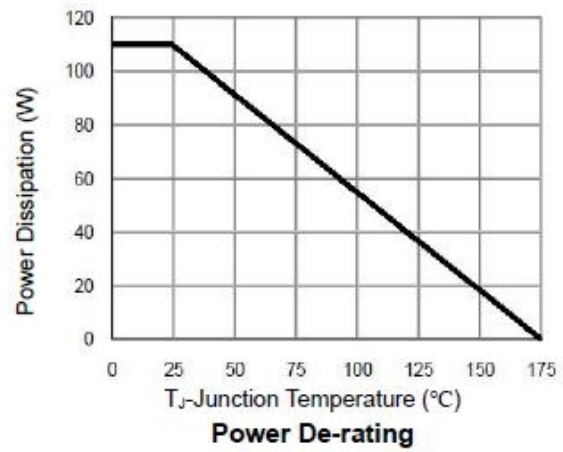
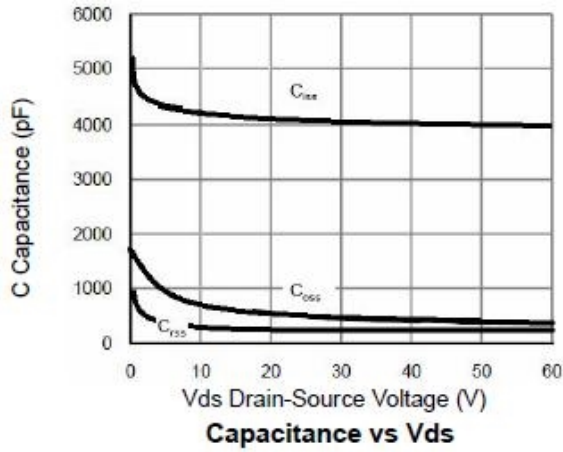
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Drain Cut-Off Current	I <sub>DSS</sub>	V <sub>DS</sub> =48V,V <sub>GS</sub> = 0V			1	uA
Gate Leakage Current	I <sub>GSS</sub>	V <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>G</sub> =3Ω, RL=1Ω		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 :

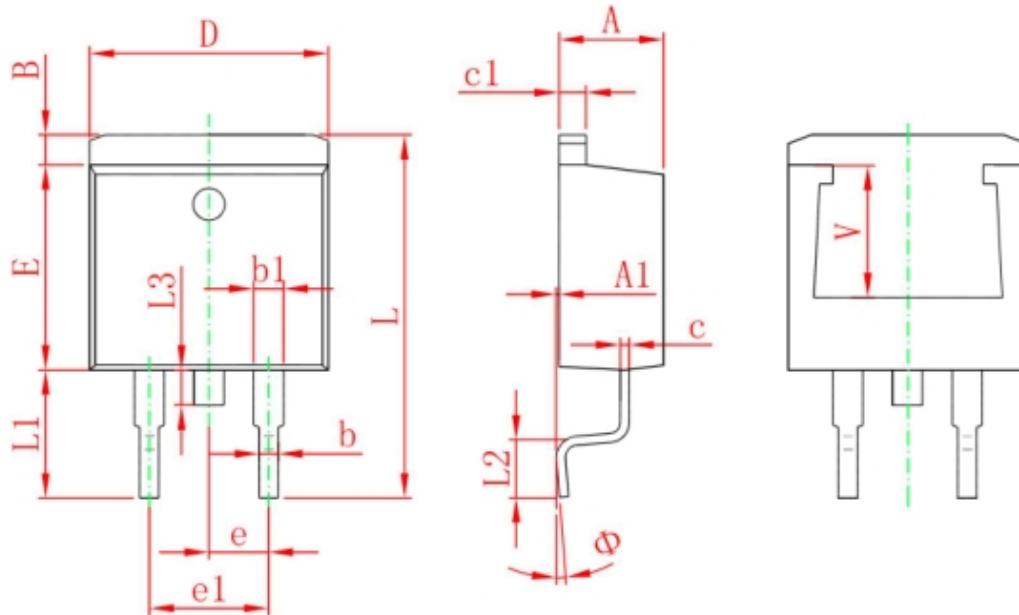
1.  $E_{AS}$  is tested at starting  $T_j = 25^{\circ}\text{C}$ ,  $V_{DD}=50V, V_{GS} = 10V, L = 0.5\text{mH}, R_g=25\text{m}\Omega$ ;

## Typical Characteristics





## TO-263 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	