

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	2.8mΩ@10V	100A

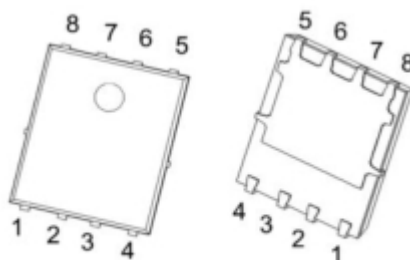
## Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

## Applications

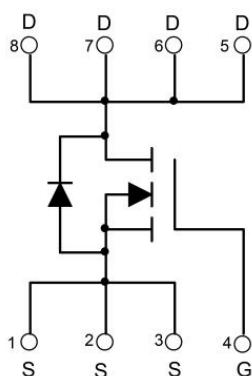
- DC-DC Converters
- Power Management

## Package

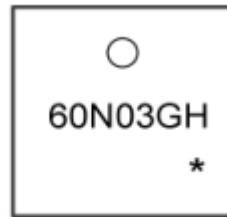


PDFNWB5X6-8L

## Circuit diagram



## Marking



**60N03GH**    =Device Code  
**\***                =Month 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 <sup>1</sup> (T <sub>c</sub> =25°C)	I <sub>D</sub>	100	A
Pulsed Drain Current <sup>2</sup>	I <sub>DM</sub>	400	A
Single Pulse Avalanche Energy <sup>3</sup>	E <sub>AS</sub>	756	mJ
Total Power Dissipation <sup>4</sup> (T <sub>c</sub> =25°C)	P <sub>D</sub>	105	W
Thermal Resistance Junction-Case <sup>1</sup>	R <sub>θJC</sub>	1.19	°C/ W
Storage Temperature Range	T <sub>STG</sub>	-55~ +150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-55~ +150	°C

## Electrical characteristics

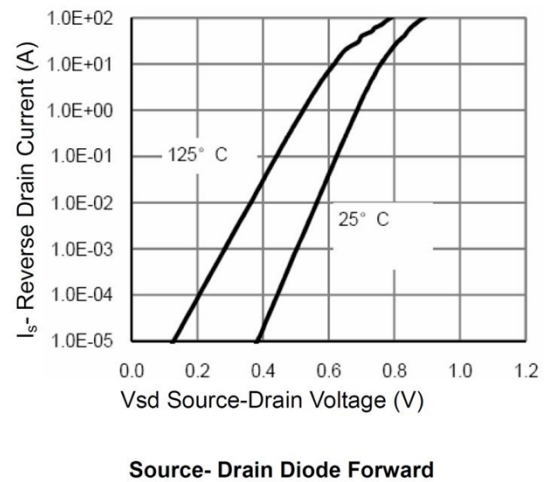
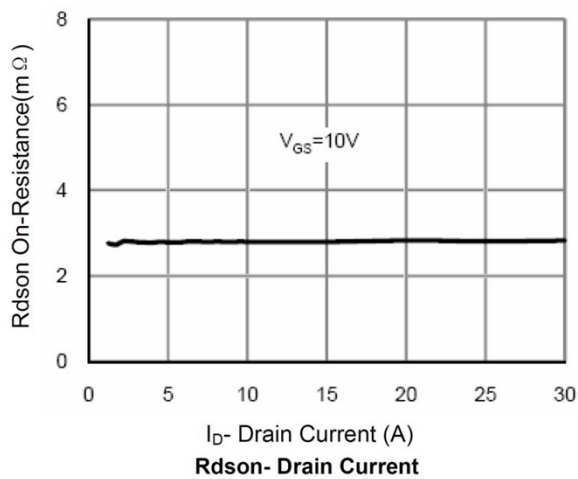
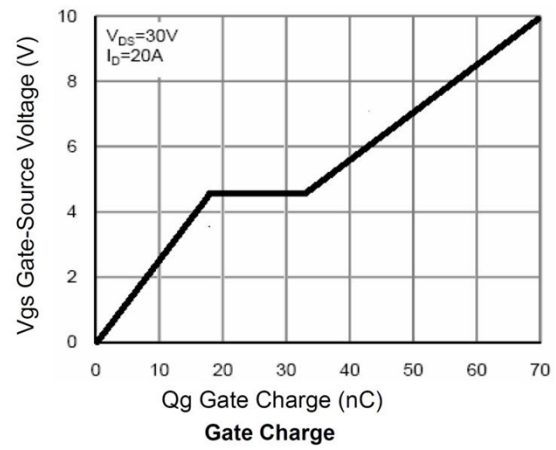
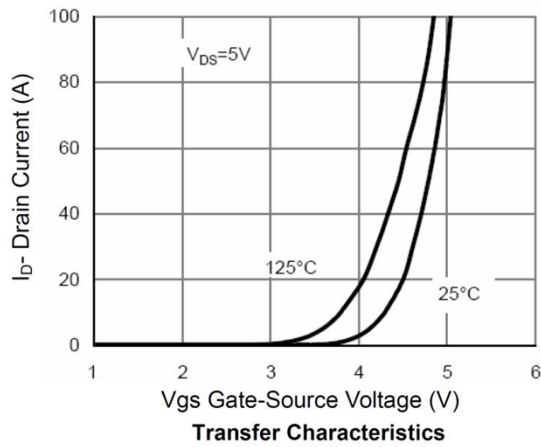
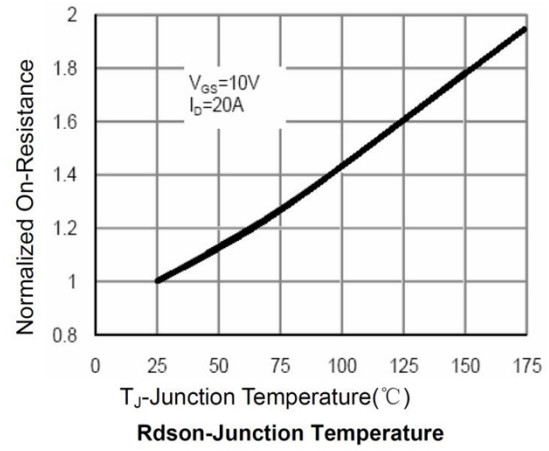
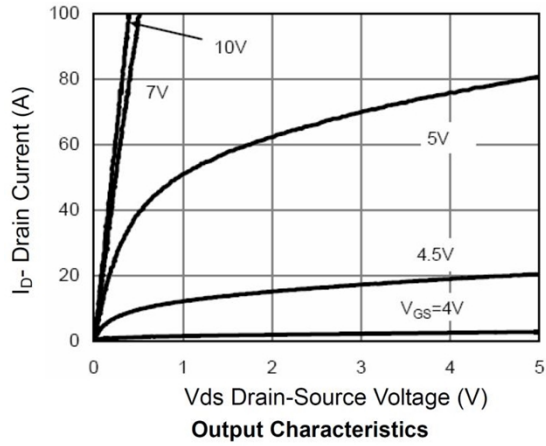
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

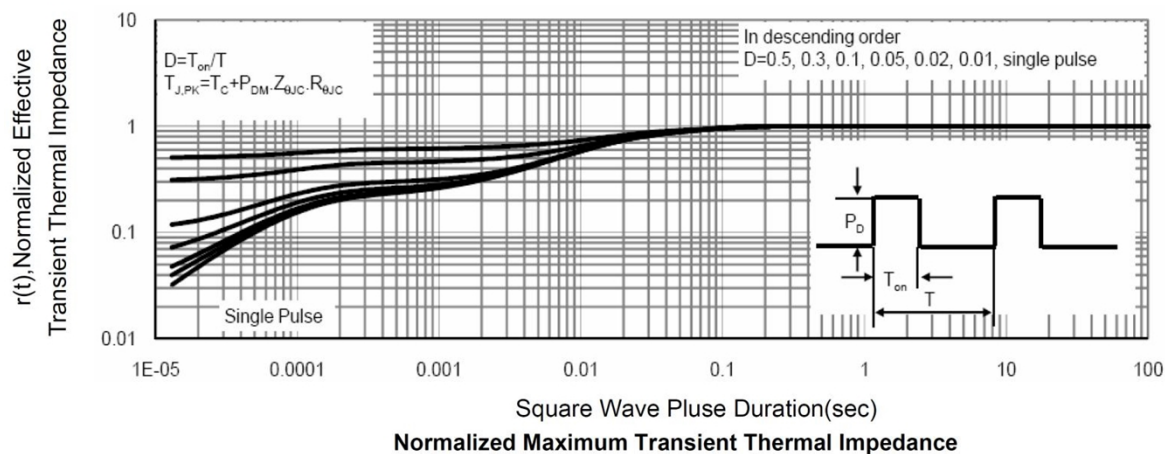
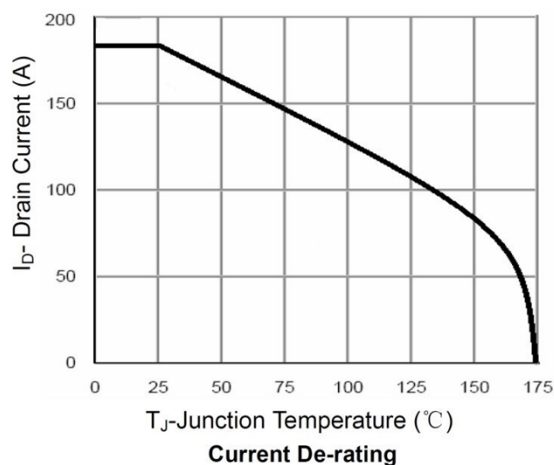
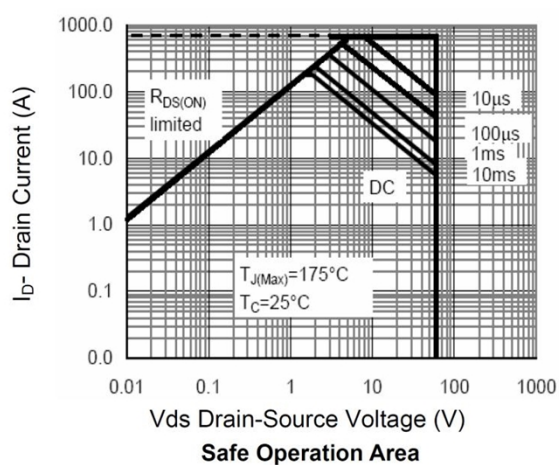
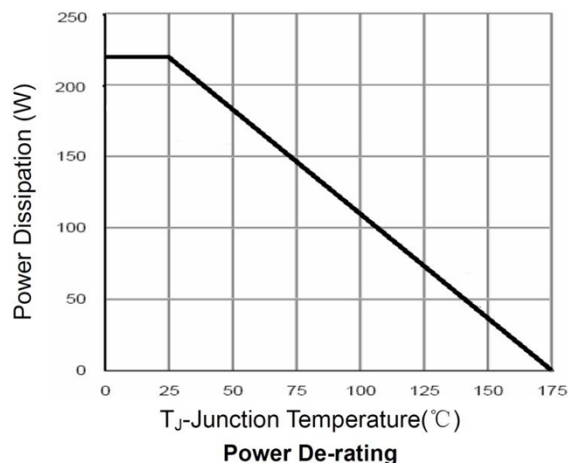
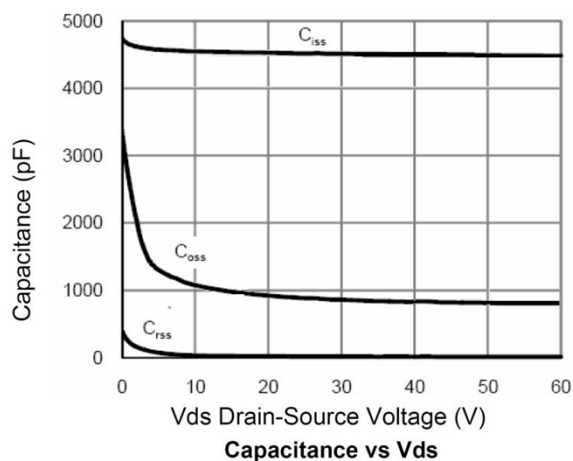
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =48V,V <sub>GS</sub> = 0V			1	uA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±100	uA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2.0	2.5	4.0	V
Static Drain-Source On-Resistance <sup>2</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A		2.8	3.5	mΩ
Dynamic Characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHz		4250		pF
Output Capacitance	C <sub>Oss</sub>			975		
Reverse Transfer Capacitance	C <sub>rss</sub>			41		
Switching Characteristics						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =30V , V <sub>GS</sub> =10V, I <sub>D</sub> =20A		68		pF
Gate-Source Charge	Q <sub>gs</sub>			19		
Gate-Drain Charge	Q <sub>gd</sub>			14		
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>DD</sub> =30V, V <sub>GS</sub> =10V, R <sub>G</sub> =4.7Ω, I <sub>D</sub> =20A		6		nS
Turn-on Rise Time	T <sub>r</sub>			12		
Turn-off Delay Time	T <sub>d(off)</sub>			24		
Turn-off Fall Time	T <sub>f</sub>			5		
Diode Characteristics						
Body Diode Voltage <sup>2</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V ,I <sub>S</sub> =1A,T <sub>J</sub> =25℃			1.2	V

### Note :

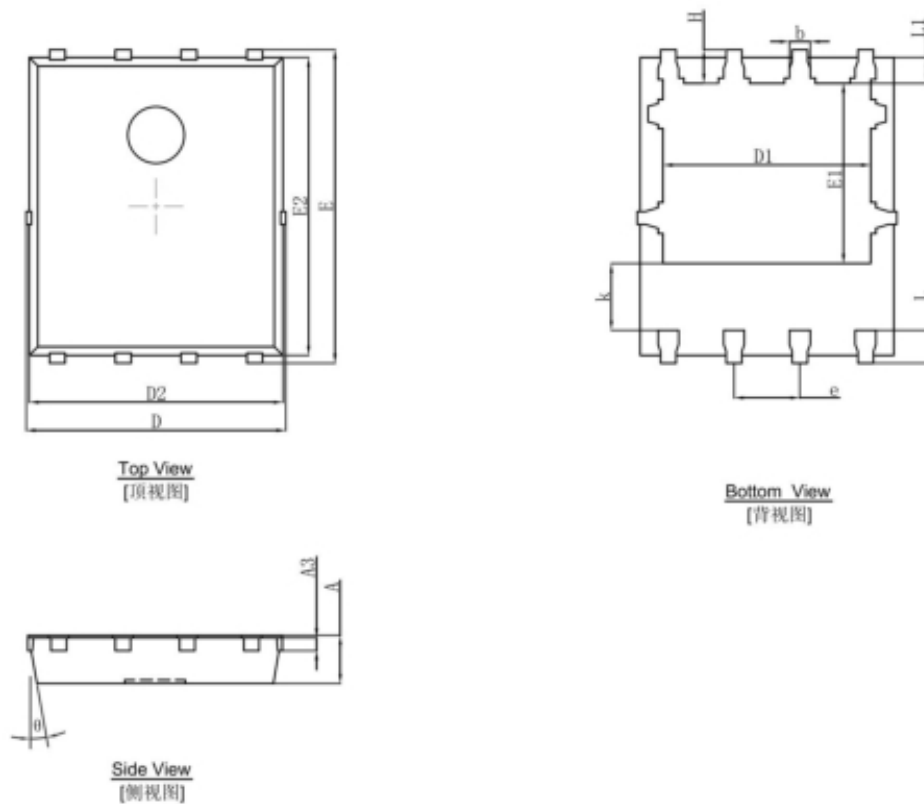
1. The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width  $\leq 300\mu s$  , duty cycle  $\leq 2\%$
3. The EAS data shows Max. rating . The test condition is  $V_{DD}=30V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$
4. The power dissipation is limited by  $150^{\circ}\text{C}$  junction temperature
5. The data is theoretically the same as  $I_D$  and  $I_{DM}$  , in real applications , should be limited by total power dissipation.

## Typical Characteristics





## PDFNWB5X6-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	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°