

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	13mΩ@10V	25A
	16mΩ@4.5V	

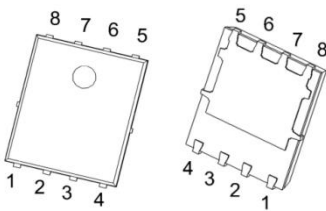
Feature

- Fast switching speed
- Surface mount package
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Applications

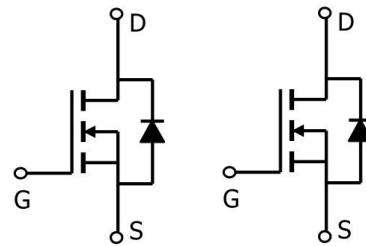
- DC-DC Converters.
- Motor Control.

Package

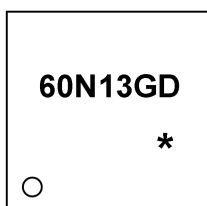


PDFNWB5X6-8L

Circuit diagram



Marking



60N13GD =Device Code
* =Month Code

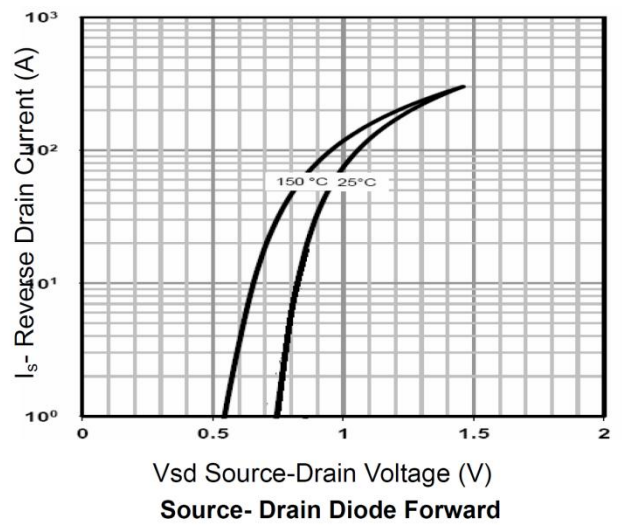
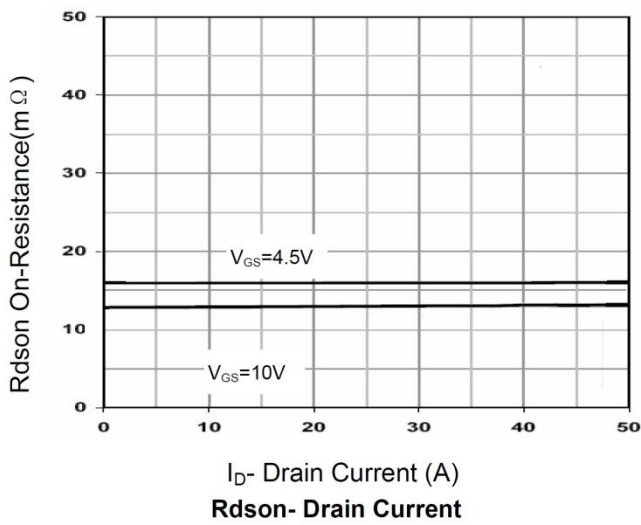
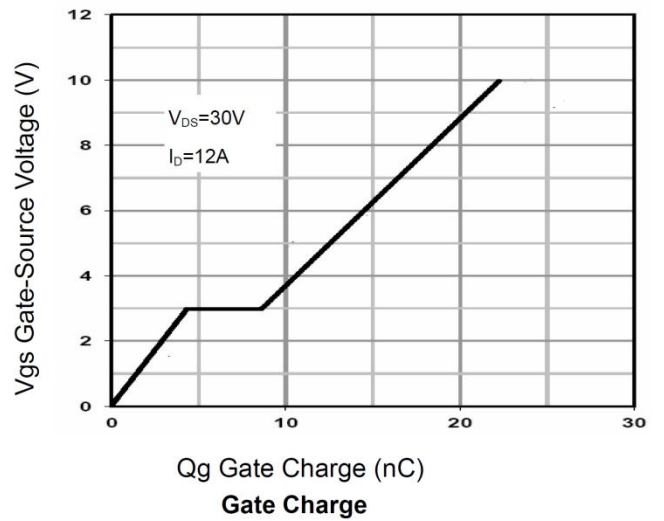
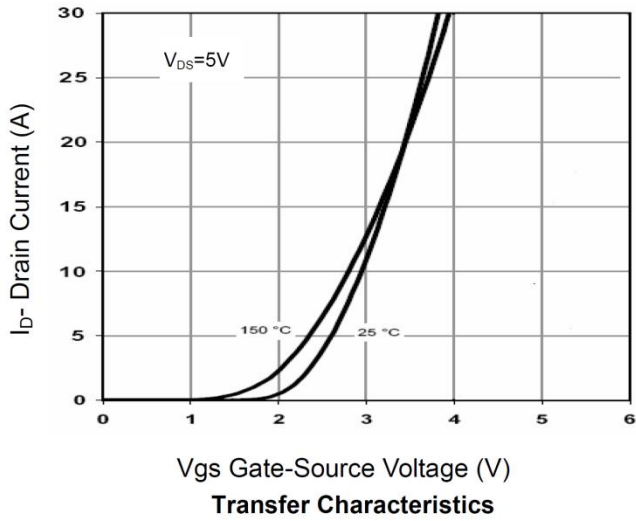
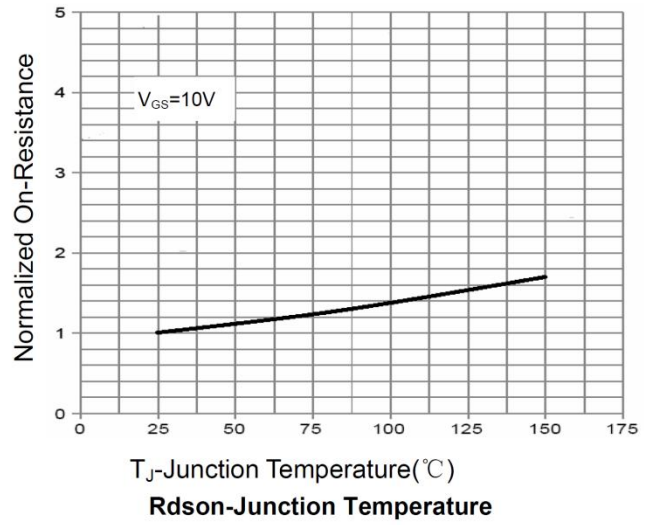
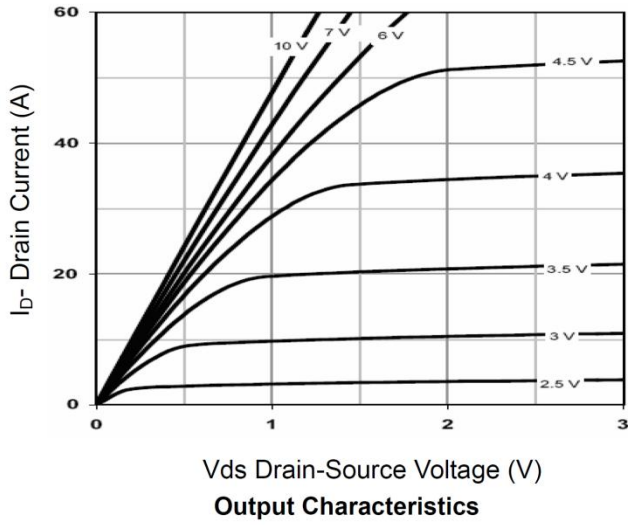
Absolute maximum ratings (Ta=25°C unless otherwise noted)

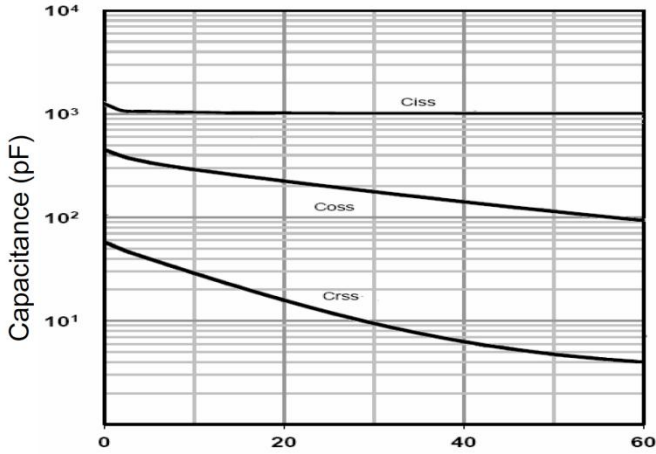
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current (Tc=25°C)	I_D	25	A
Pulse Drain Current Tested	I_{DM}	100	A
Maximum Power Dissipation (Tc=25°C)	P_D	73	W
Thermal Resistance-Junction to Case	$R_{\theta JC}$	1.71	°C/W
Maximum Junction Temperature	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

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

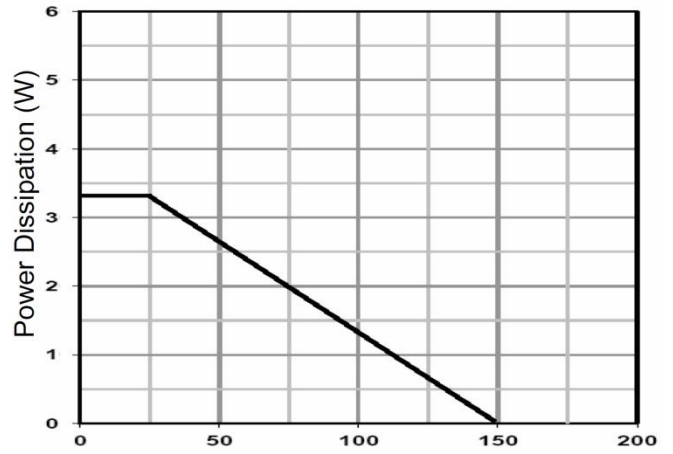
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Electrical Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V, ID=250mA	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	VDS=60V, VGS=0V	-	-	1	uA
Gate Leakage Current	I_{GSS}	VGS= ± 20 V, VDS=0V	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS, ID=250uA	1.0	1.8	2.5	V
Drain-Source On-state Resistance	$R_{DS(ON)}$	VGS=10V, ID=10A	-	13	16	mΩ
		VGS=4.5V, ID=10A	-	16	21	
Dynamic and Switching Characteristics						
Input Capacitance	C_{iss}	VGS=0V, VDS=30V, F=1MHz	-	426	-	pF
Output Capacitance	C_{oss}		-	103	-	
Reverse Transfer Capacitance	C_{riss}		-	8	-	
Turn-on Delay Time	$t_{d(ON)}$	VDD=30V, ID=10A, VGS=10V, RG=1.6Ω	-	8	-	nS
Turn-on Rise Time	t_r		-	5	-	
Turn-off Delay Time	$t_{d(OFF)}$		-	24	-	
Turn-off Fall Time	t_f		-	3.5	-	
Total Gate Charge	Q_g	VDS=30V, VGS=10V, ID=10A	-	35	-	nC
Gate-Source Charge	Q_{gs}		-	6.4	-	
Gate-Drain Charge	Q_{gd}		-	3.5	-	
Source-Drain Characteristics						
Diode Forward Voltage	V_{SD}	IS=1A, VGS=0V	-	-	1.2	V

Typical Characteristics

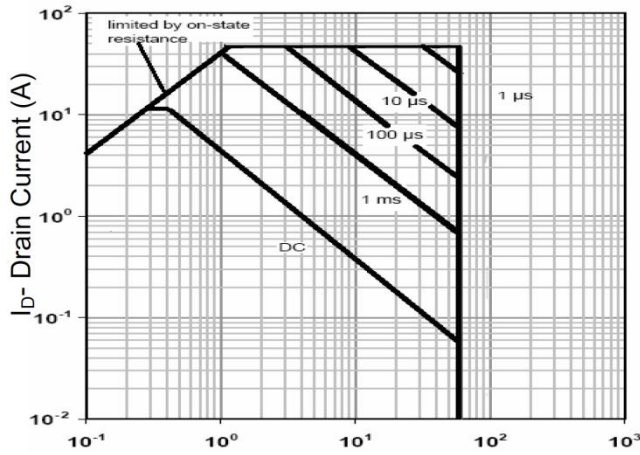




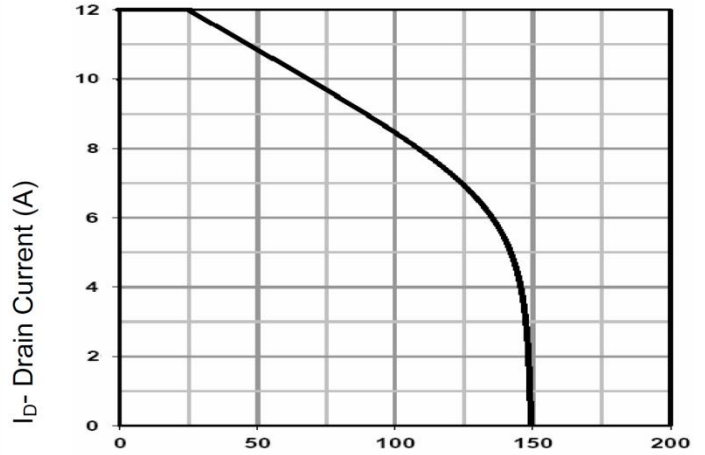
V_{ds} Drain-Source Voltage (V)
Capacitance vs V_{ds}



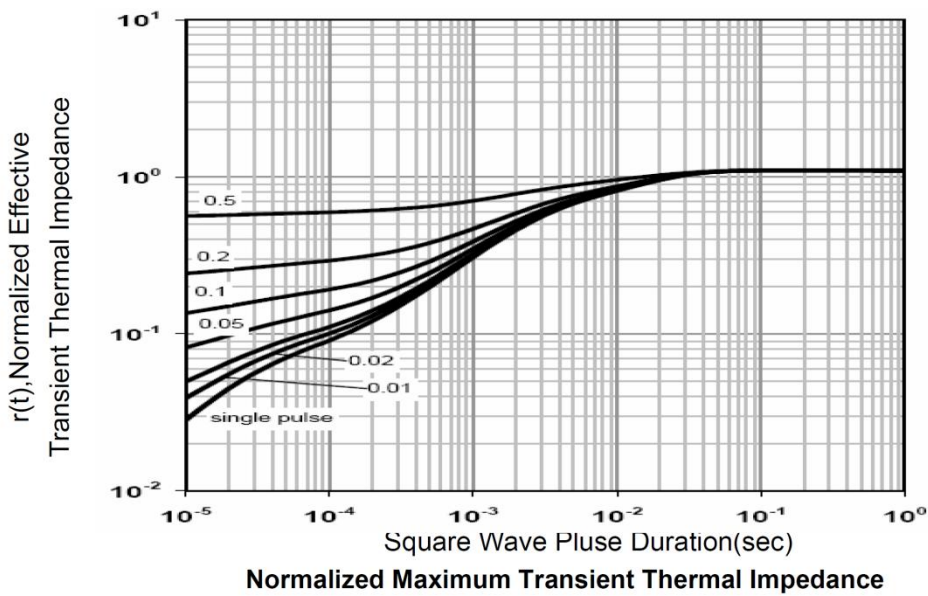
T_J-Junction Temperature(°C)
Power De-rating



V_{ds} Drain-Source Voltage (V)
Safe Operation Area

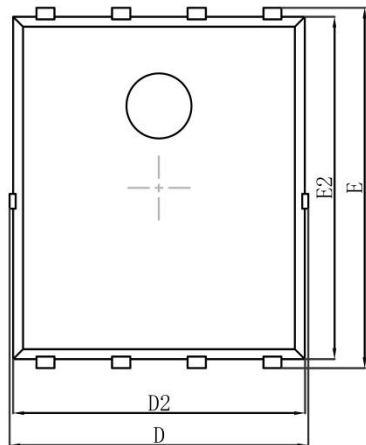


T_J-Junction Temperature (°C)
Current De-rating

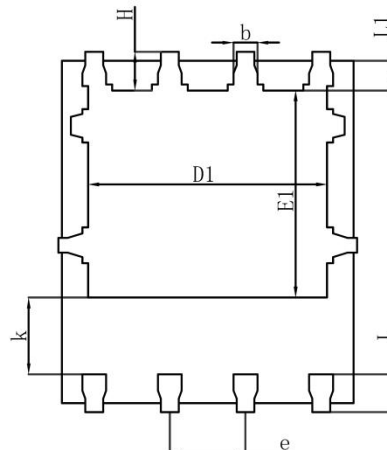




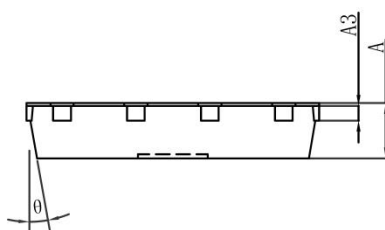
PDFNWB5X6-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

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°