

Product Summary

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

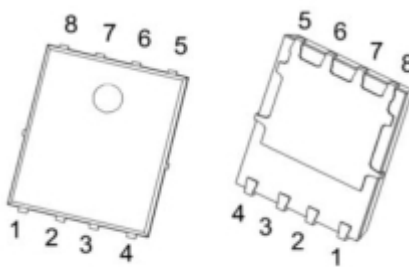
Feature

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

Applications

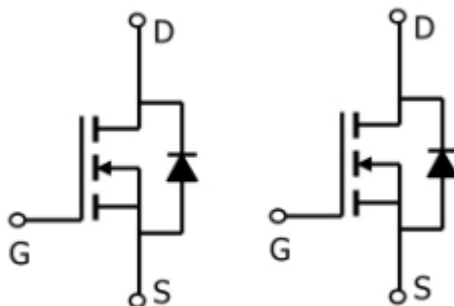
- DC-DC Converters.
- Motor Control.

Package

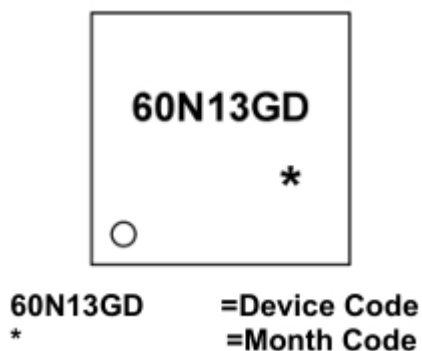


PDFNWB5X6-8L

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

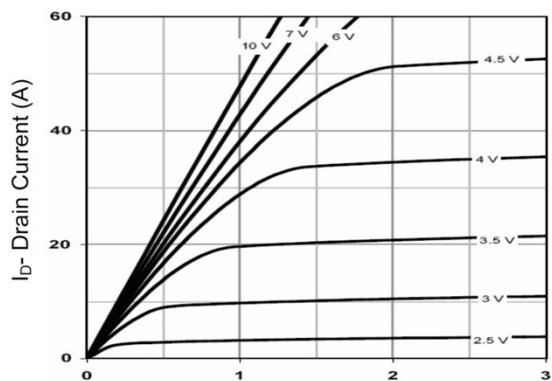
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current(T _c =25°C)	I _D	25	A
Pulse Drain Current Tested	I _{DM}	100	A
Maximum Power Dissipation(T _c =25°C)	P _D	73	W
Thermal Resistance-Junction to Case	R _{θJC}	1.71	°C/W
Maximum Junction Temperature	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

Electrical characteristics

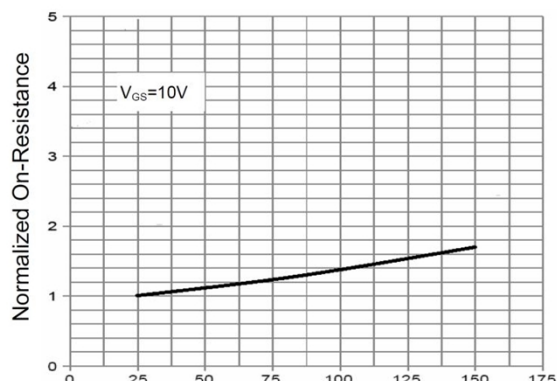
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.8	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		13	16	m Ω
		$V_{GS} = 4.5V, I_D = 10A$		16	21	
Dynamic and Switching Characteristics						
Input capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=30V,$ $f=1MHz$		426		pF
Output capacitance	C_{oss}			103		
Reverse transfer capacitance	C_{rss}			8		
Turn-on Delay Time	$T_{d(on)}$	$V_{DD}=30V, I_D = 10A,$ $V_{GS}=10V, R_G = 1.6\Omega$		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	$V_{DS}=30V, V_{GS}=10V,$ $I_D = 10A$		35		pF
Gate-Source Charge	Q_{gs}			6.4		
Gate-Drain Charge	Q_{gd}			3.5		
Drain-Source Body Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1A$			1.2	V

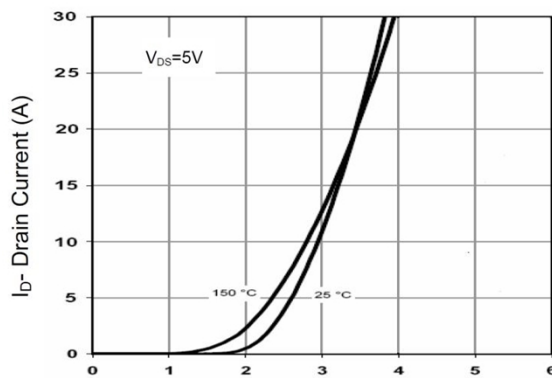
Typical Characteristics



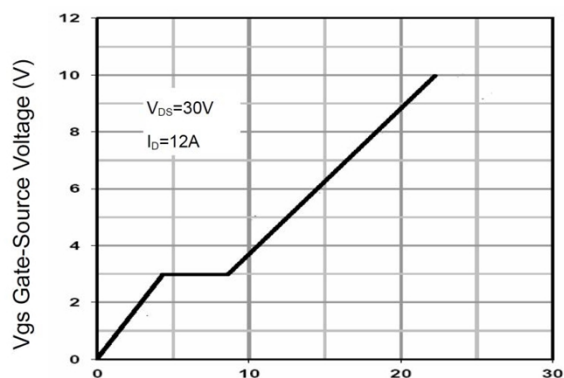
V_{DS} Drain-Source Voltage (V)
Output Characteristics



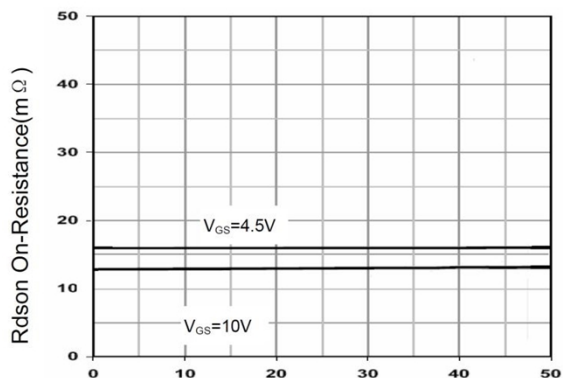
T_J -Junction Temperature($^{\circ}C$)
 $R_{DS(on)}$ -Junction Temperature



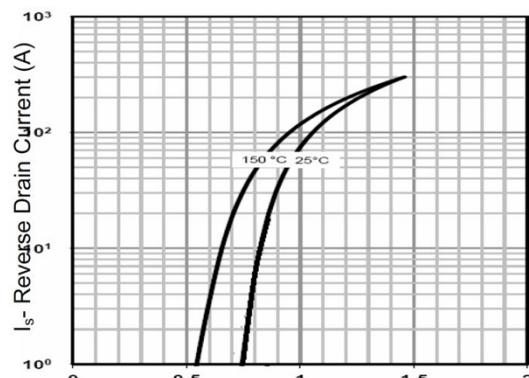
V_{GS} Gate-Source Voltage (V)
Transfer Characteristics



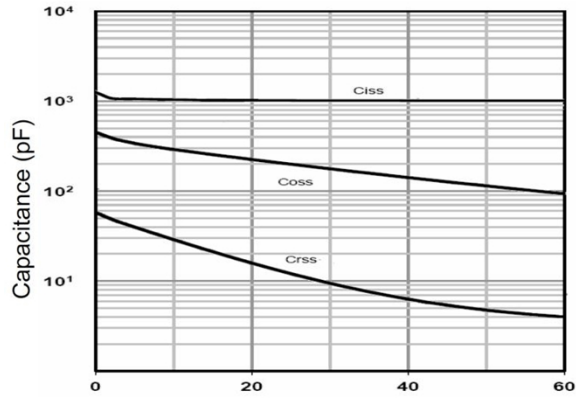
Q_g Gate Charge (nC)
Gate Charge



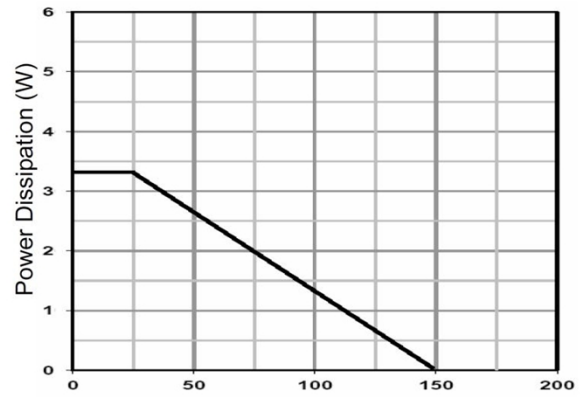
I_D - Drain Current (A)
 $R_{DS(on)}$ - Drain Current



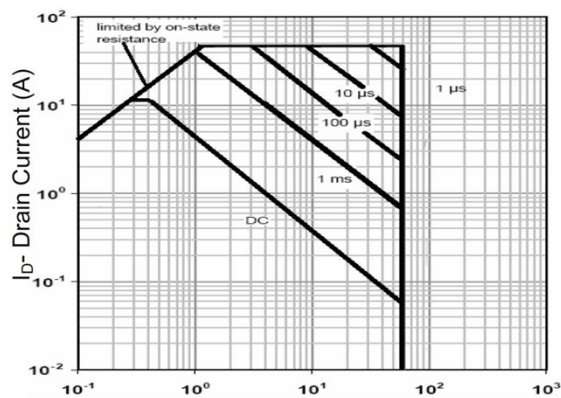
V_{SD} Source-Drain Voltage (V)
Source- Drain Diode Forward



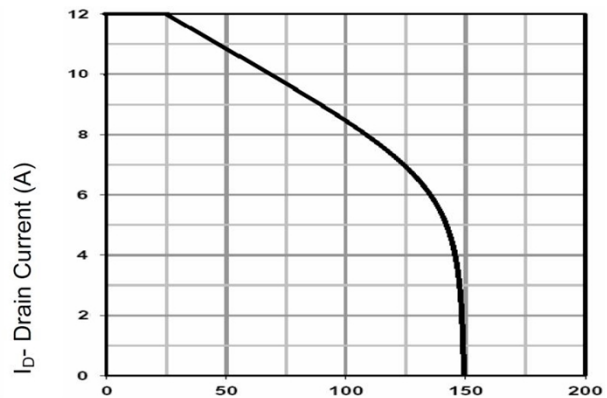
Vds Drain-Source Voltage (V)
Capacitance vs Vds



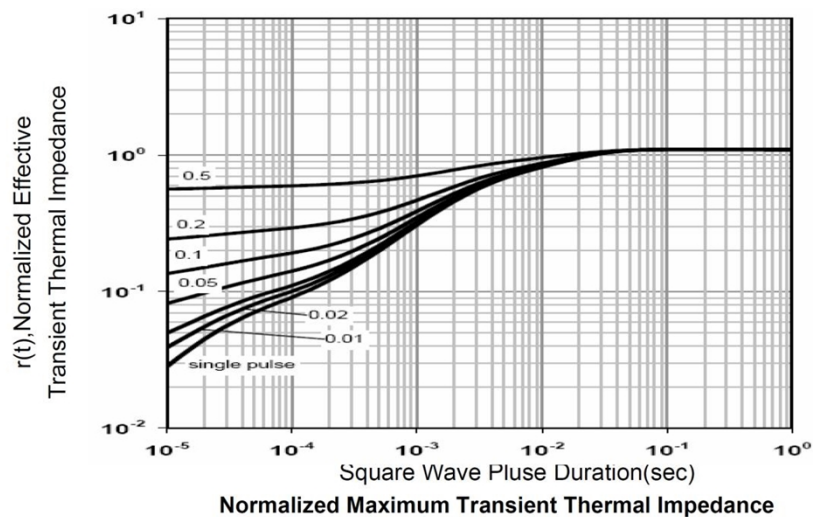
TJ-Junction Temperature(°C)
Power De-rating



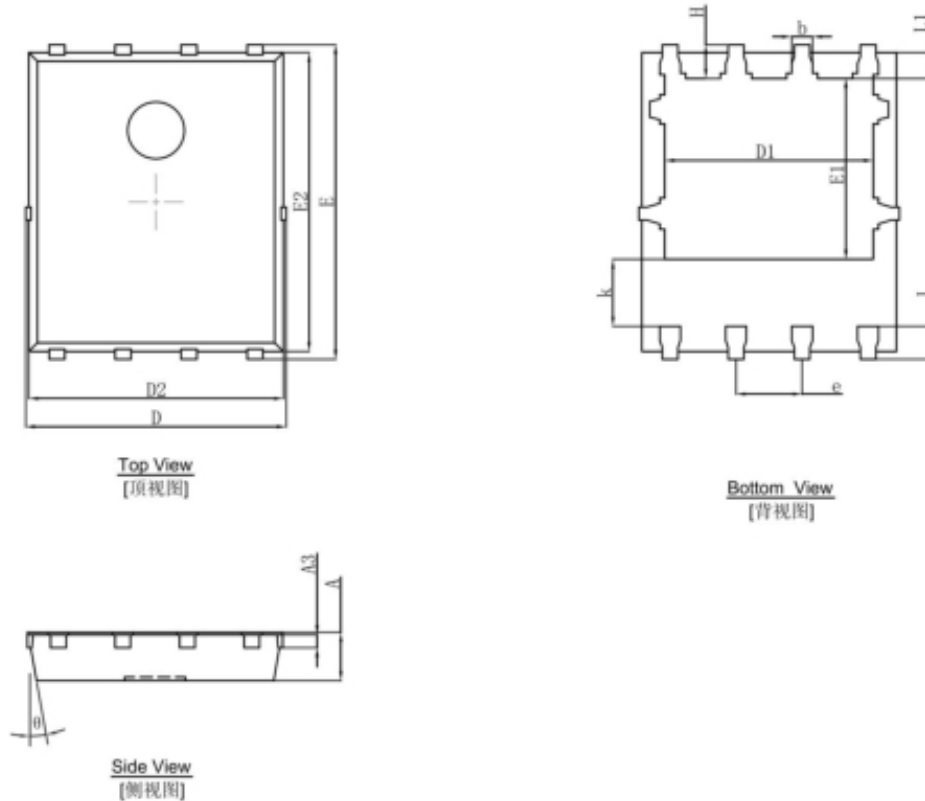
Vds Drain-Source Voltage (V)
Safe Operation Area



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



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°