

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	5mΩ@10V	40A
	8mΩ@4.5V	

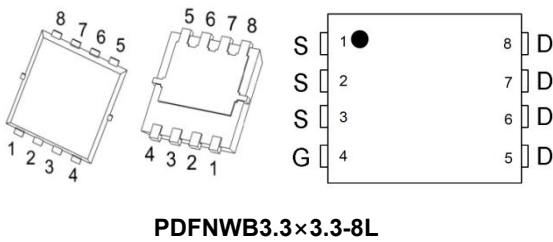
Feature

- Fast switching speed
- Low On-Resistance
- 100% Single Pulse avalanche energy Test

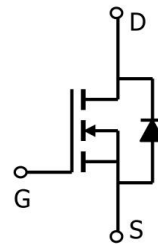
Applications

- DC-DC Converters.
- Power Management

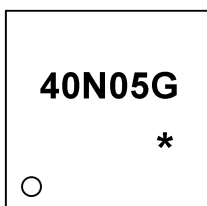
Package



Circuit diagram



Marking



40N05G =Device Code
* =Month Code

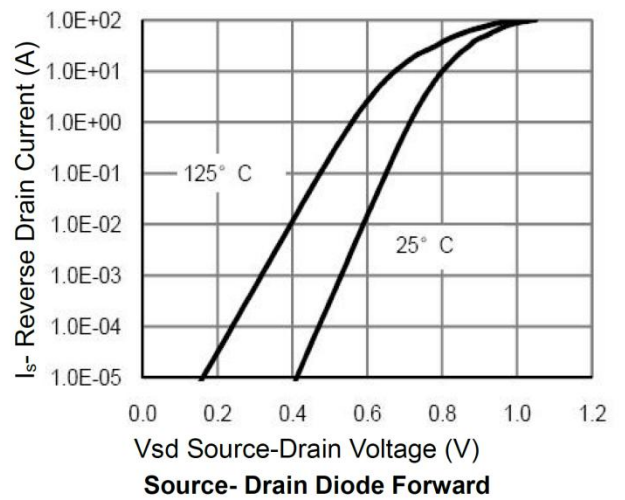
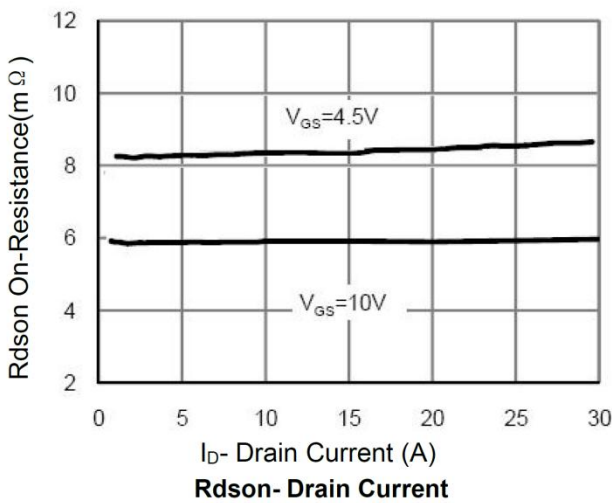
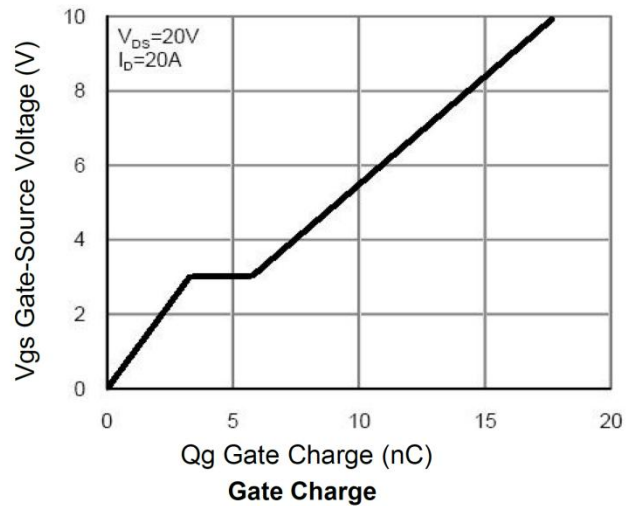
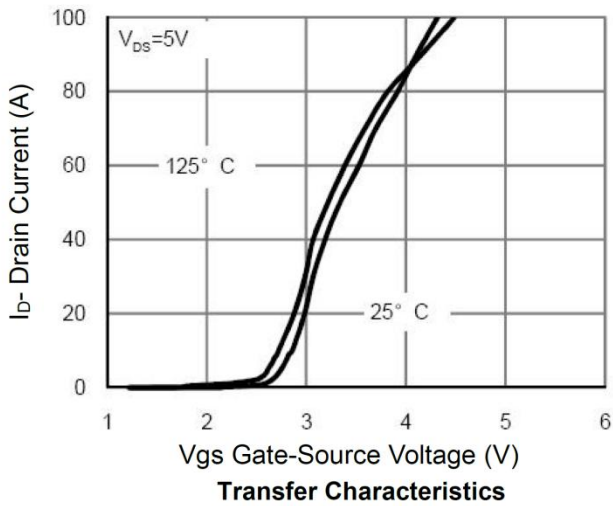
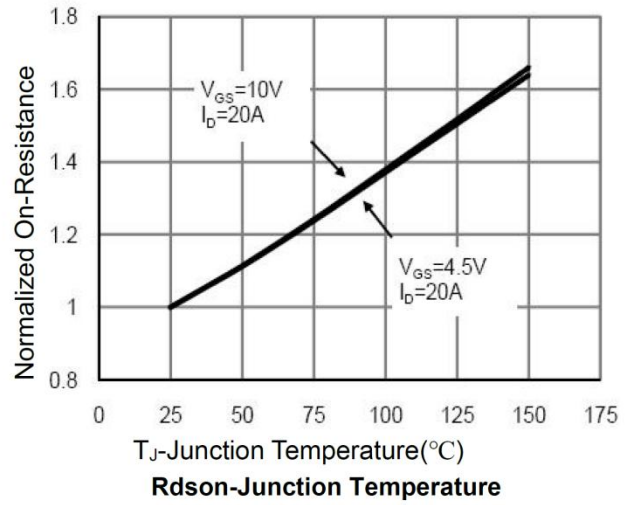
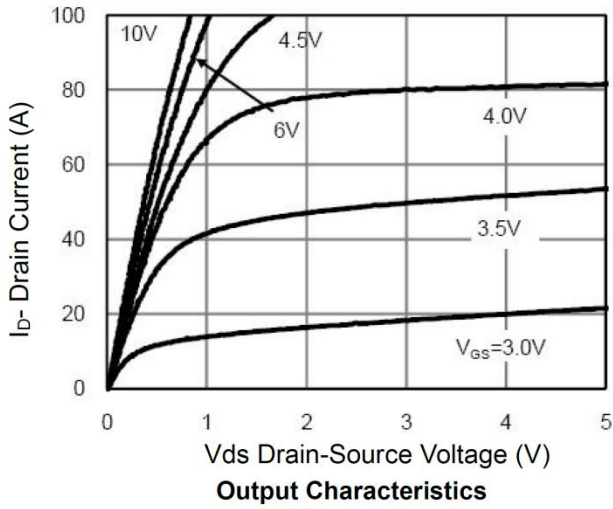
Absolute maximum ratings (Ta=25°C, unless otherwise noted)

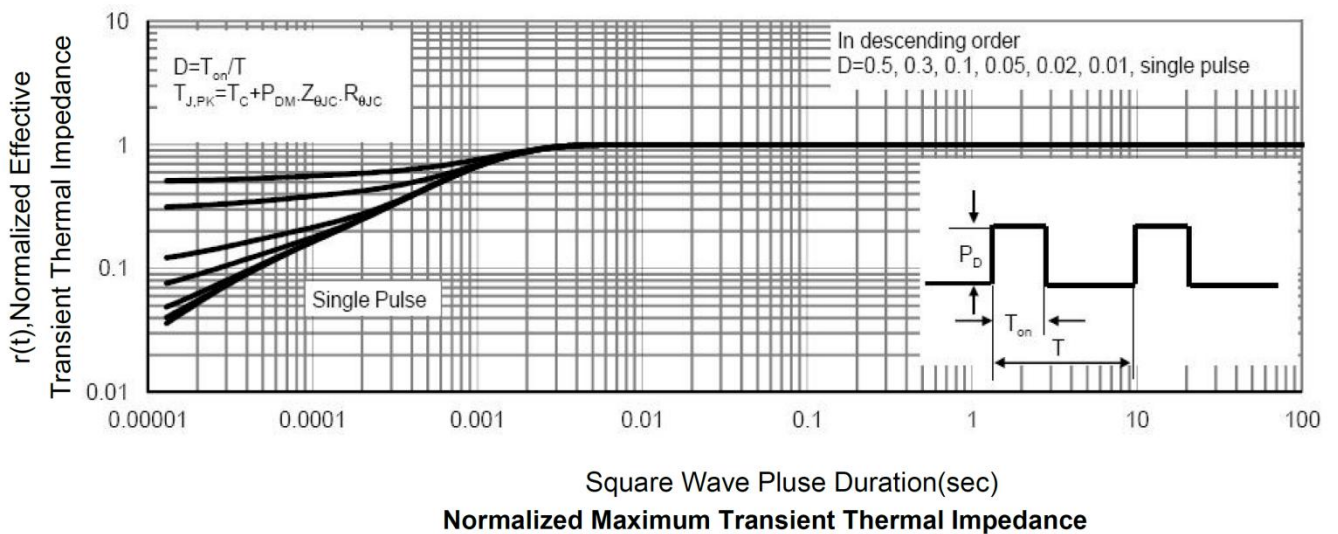
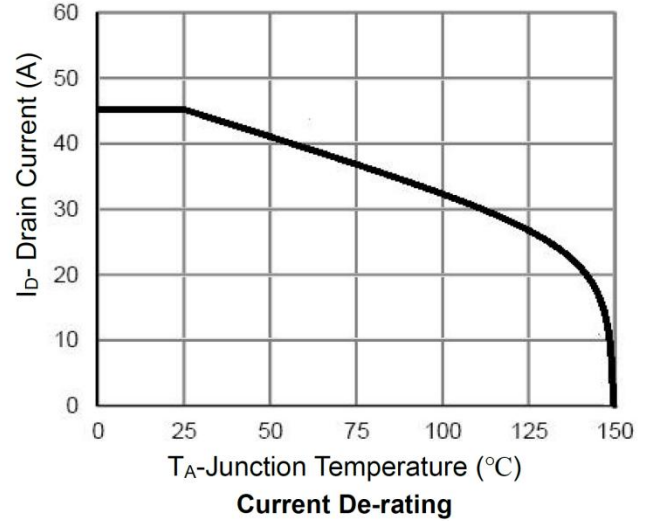
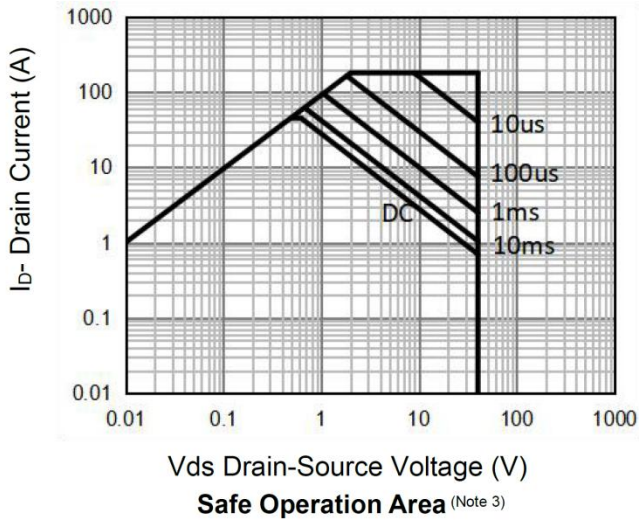
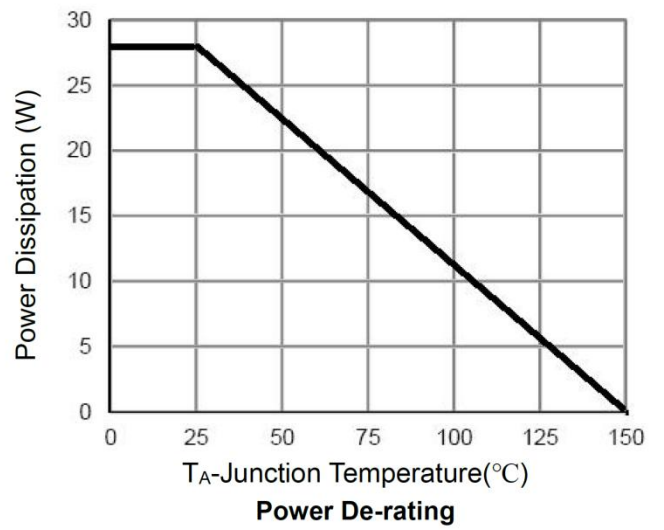
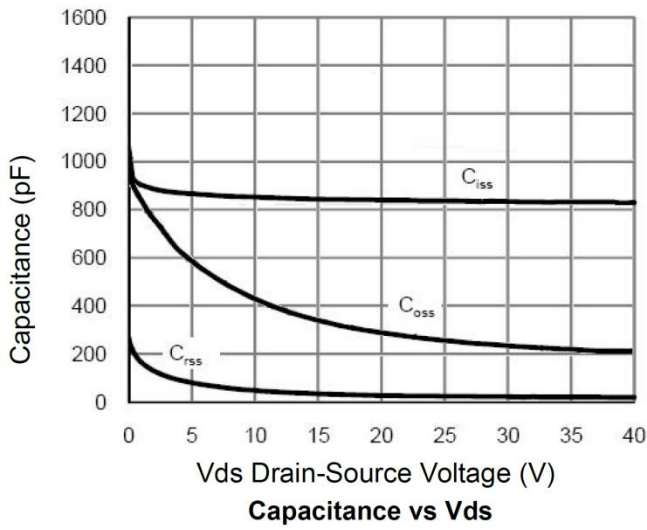
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	40	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current(Tc=25°C)	I_D	40	A
Pulse Drain Current Tested	I_{DM}	160	A
Maximum Power Dissipation(Tc=25°C)	P_D	35	W
Thermal Resistance-Junction to Case	$R_{\theta JC}$	3.85	°C/W
Maximum Junction 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}	$V_{GS}=0V, I_D=250mA$	40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$	-	-	1	uA
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
Drain-Source On-state Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	5	8	mΩ
		$V_{GS}=4.5V, I_D=10A$	-	8	11	
Dynamic and Switching Characteristics						
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=20V, F=1MHz$	-	1278	-	pF
Output Capacitance	C_{oss}		-	583	-	
Reverse Transfer Capacitance	C_{rss}		-	49	-	
Total Gate Charge	Q_g	$V_{DS}=20V, V_{GS}=10V, I_D=20A$	-	25	-	nC
Gate-Source Charge	Q_{gs}		-	5.4	-	
Gate-Drain Charge	Q_{gd}		-	3.2	-	
Turn-on Delay Time	$t_{d(ON)}$	$V_{DD}=20V, I_D=20A, V_{GS}=10V, R_G=1.6\Omega$	-	6	-	nS
Turn-on Rise Time	t_r		-	2.5	-	
Turn-off Delay Time	$t_{d(OFF)}$		-	22	-	
Turn-off Fall Time	t_f		-	3.5	-	
Source-Drain Characteristics						
Diode Forward Voltage	V_{SD}	$I_S=1A, V_{GS}=0V$	-	-	1.2	V

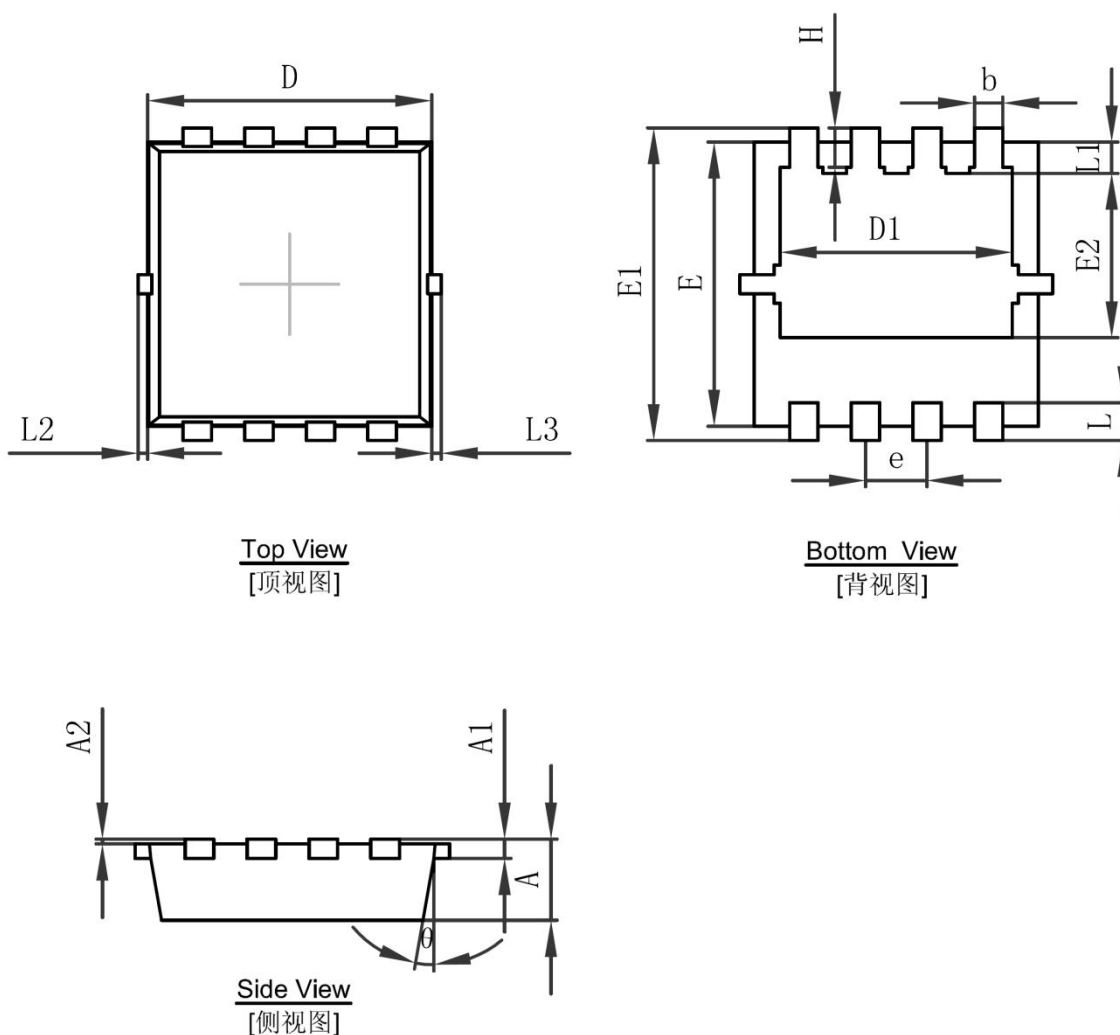
Typical Characteristics







PDFNWB3.3×3.3-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

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