

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	2.7mΩ@10V	110A
	3.2mΩ@4.5V	

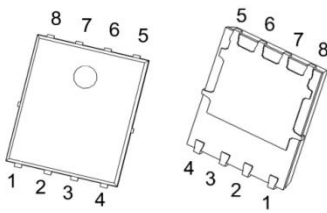
Feature

- Fast Switching
- Low Gate Charge and R_{ds(on)}
- 100% Single Pulse avalanche energy Test

Applications

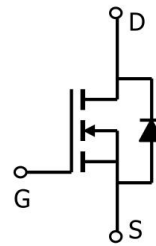
- Load Switch
- PWM Application
- Power Management

Package

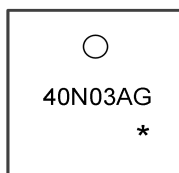


PDFNWB5X6-8L

Circuit diagram



Marking



40N03AG =Device Code
* =Month Code

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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	40	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ¹ (T _c =25°C)	I _D	110	A
Pulsed Drain Current ²	I _{DM}	440	A
Single Pulse Avalanche Energy ³	E _{AS}	462	mJ
Total Power Dissipation ⁴ (T _c =25°C)	P _D	75	W
Thermal Resistance Junction-Case ¹	R _{θJC}	1.67	°C/W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

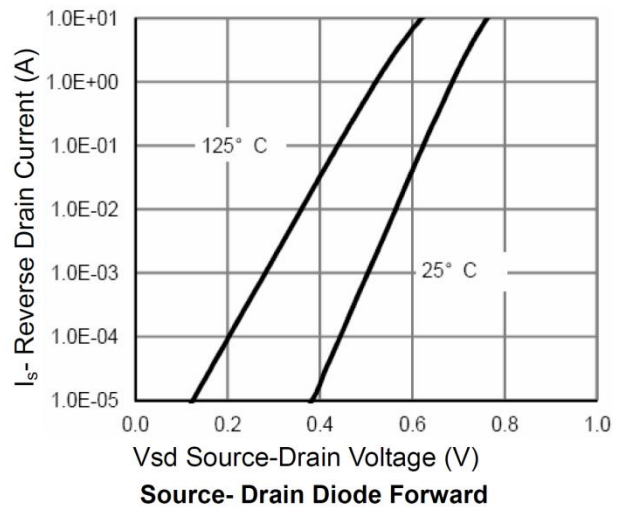
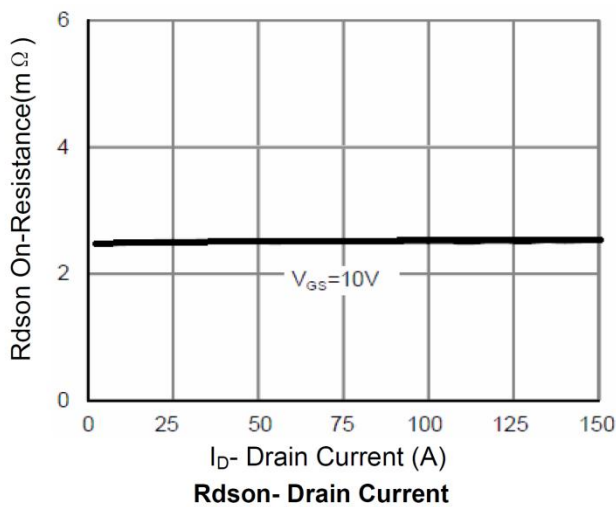
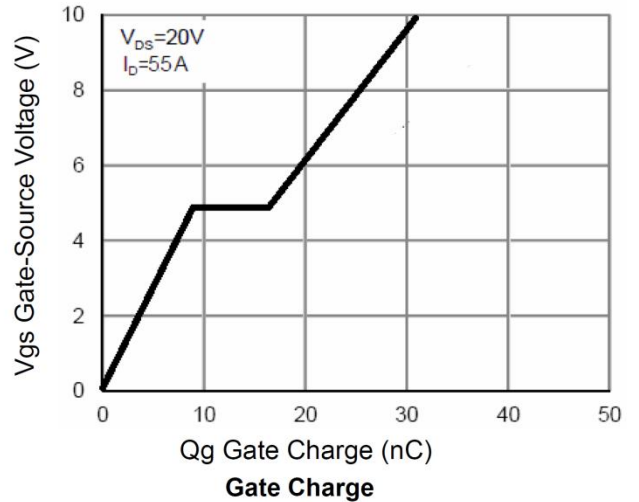
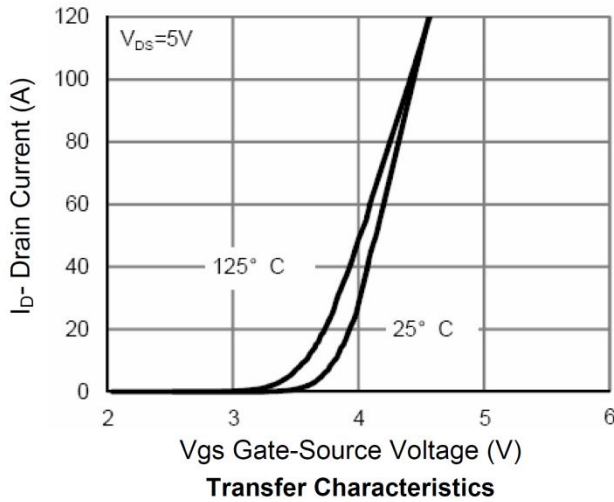
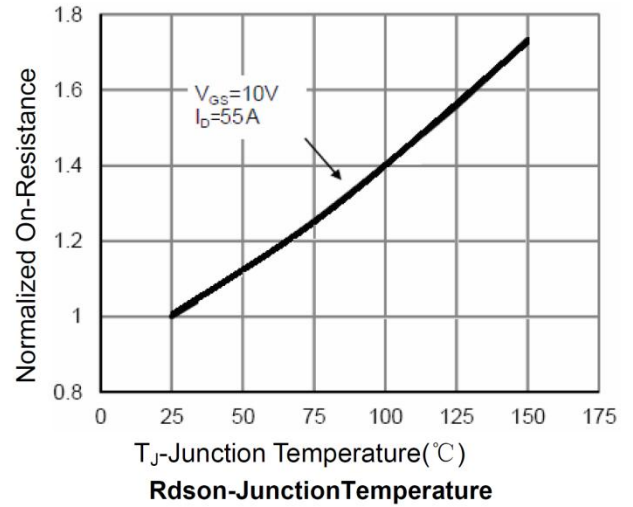
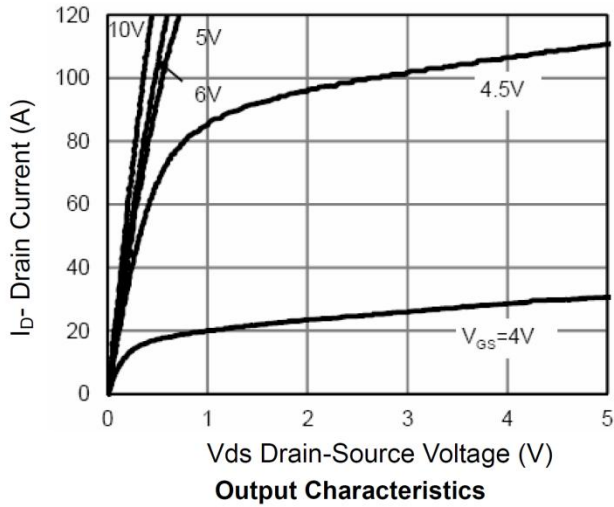
Electrical characteristics (Ta=25°C, unless otherwise noted)

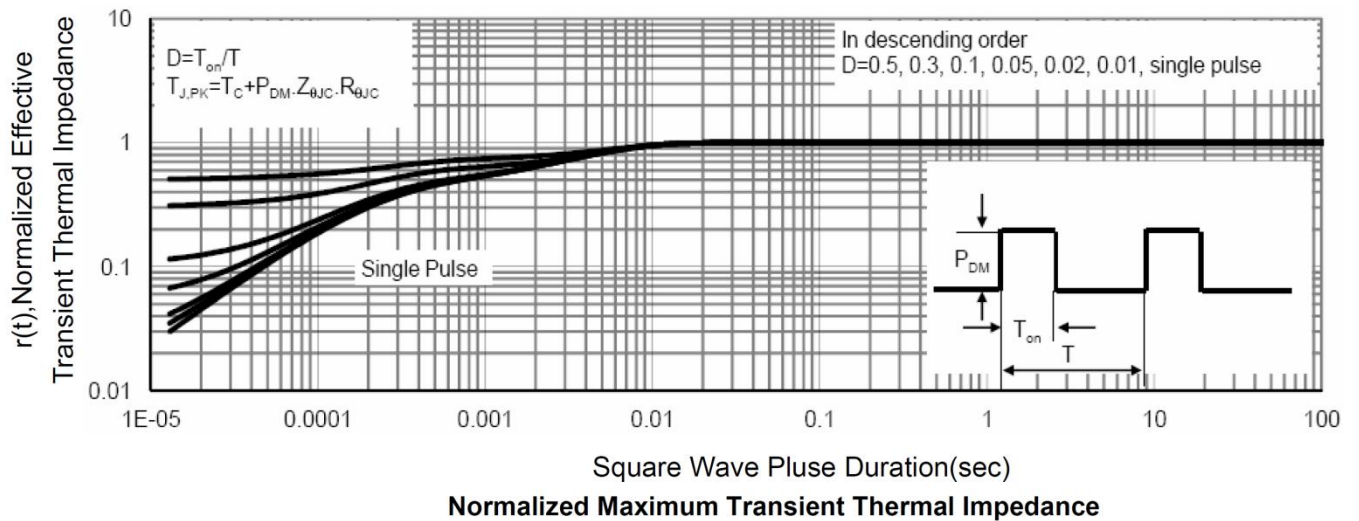
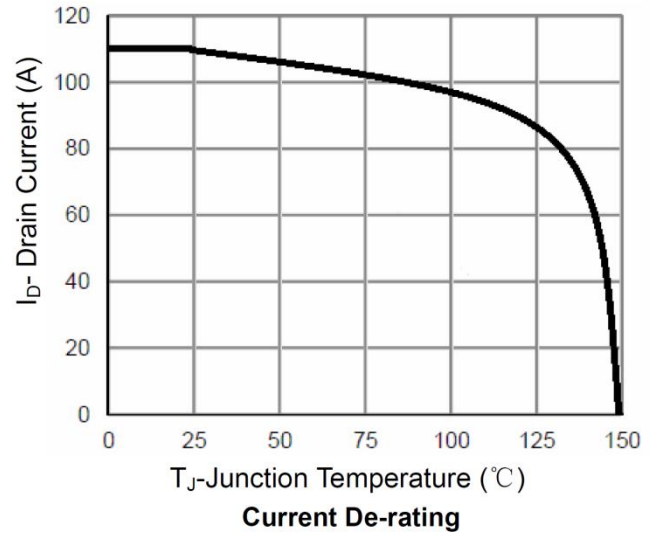
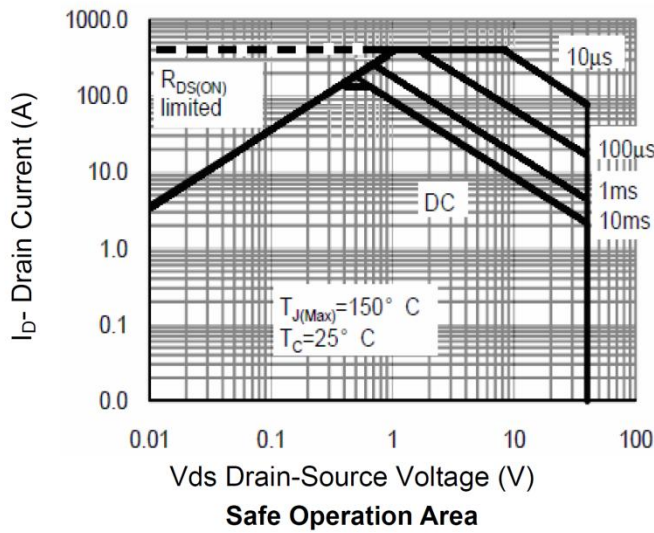
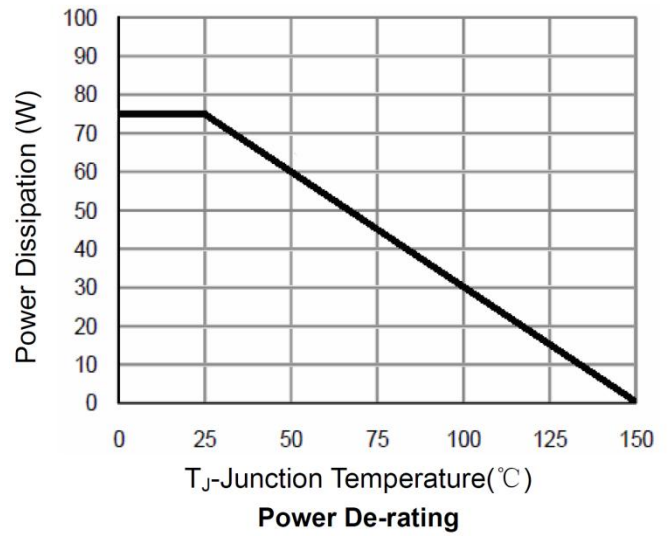
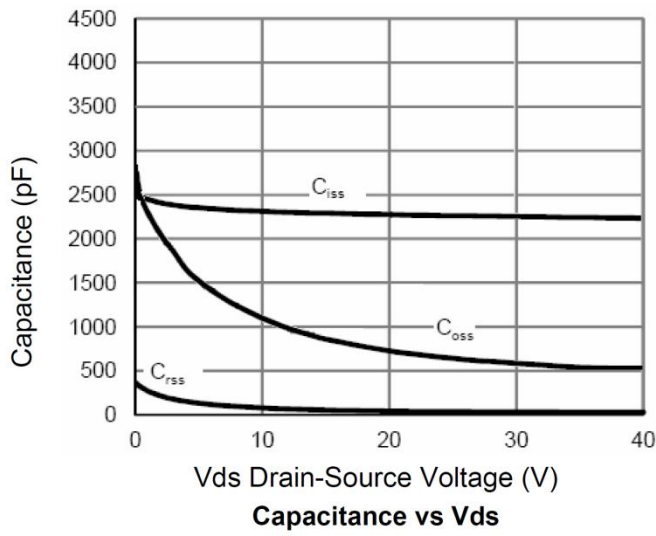
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _D =250uA	40	---	---	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =32V , V _{GS} =0V , T _J =25°C	---	---	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	1	1.5	2.5	V
Static Drain-Source On-Resistance ²	R _{DS(ON)}	V _{GS} =10V , I _D =30A	---	2.7	3.5	mΩ
		V _{GS} =4.5V , I _D =30A	---	3.2	4.3	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =20V , V _{GS} =0V , f=1MHz	---	3210	---	pF
Output Capacitance	C _{oss}		---	750	---	
Reverse Transfer Capacitance	C _{rss}		---	52	---	
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =20V , V _{GS} =10V , I _D =55A	---	60	---	nC
Gate-Source Charge	Q _{gs}		---	10	---	
Gate-Drain Charge	Q _{gd}		---	9.5	---	
Turn-On Delay Time	T _{d(on)}	V _{DD} =20V , V _{GS} =10V , R _G =1.6Ω , I _D =55A	---	11	---	ns
Rise Time	T _r		---	5	---	
Turn-Off Delay Time	T _{d(off)}		---	32	---	
Fall Time	T _f		---	5.5	---	
Diode Characteristics						
Diode Forward Voltage ²	V _{SD}	V _{GS} =0V , I _S =1A , T _J =25°C	---	---	1.2	V

Note :

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≅ 300us , duty cycle ≅ 2%
3. The EAS data shows Max. rating . The test condition is V_{DD}=20V,V_{GS}=10V,L=0.5mH,R_G=25Ω

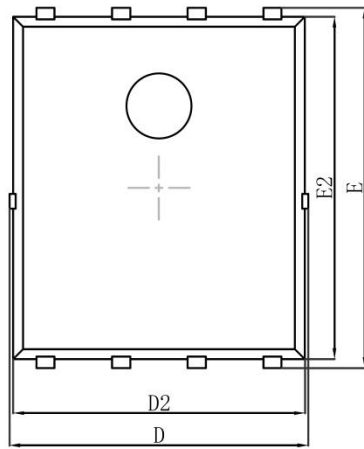
Typical Characteristics



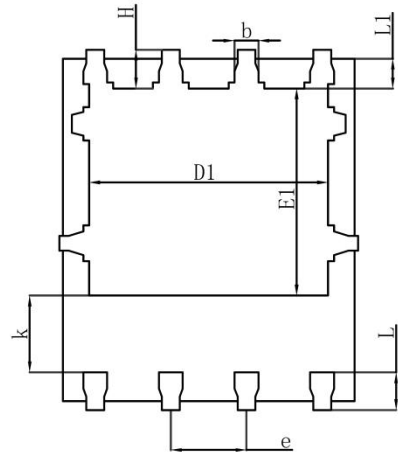




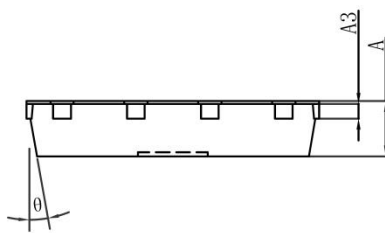
PDFNWB5X6-8L Package Information



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°

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