

- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

Description

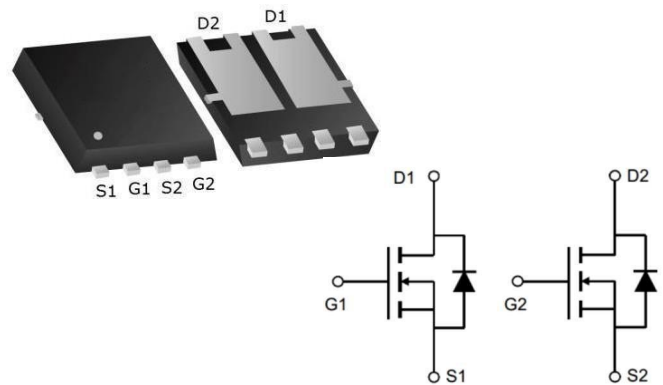
The 80N03ND is the high cell density trenched N-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The 80N03ND meet the RoHS and Green Product requirement 100% EAS guaranteed with full function reliability approved.

Product Summary

BVDSS	RDSON	ID
30V	3.8mΩ	80A

PDFN5*6-8 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	80	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	30	A
I_{DM}	Pulsed Drain Current	150	A
EAS	Single Pulse Avalanche Energy	124	mJ
I_{AS}	Avalanche Current	22	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ⁴	5.8	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ¹	---	85	$^\circ\text{C/W}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V,	-	-	10.0	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} =±20V	-	-	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note3	V _{GS} =10V, I _D =20A	-	3.8	5.5	mΩ
		V _{GS} =4.5V, I _D =10A	-	5.0	8.5	
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1.0MHz	-	1814	-	pF
C _{oss}	Output Capacitance		-	180	-	pF
C _{rss}	Reverse Transfer Capacitance		-	98	-	pF
Q _g	Total Gate Charge	V _{DS} =15V, I _D =11A, V _{GS} =10V	-	36	-	nC
Q _{gs}	Gate-Source Charge		-	2.7	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	4.5	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =15V,R _L =1.35Ω, R _{GEN} =3Ω, V _{GS} =10V	-	6	-	ns
t _r	Turn-on Rise Time		-	10	-	ns
t _{d(off)}	Turn-off Delay Time		-	30	-	ns
t _f	Turn-off Fall Time		-	6.5	-	ns
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	30	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	60	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =15A	-	-	1.2	V
t _{rr}	Body Diode Reverse Recovery Time	I _F =11A,dI/dt=500A/μs	-	7	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	10	-	nC

Typical Electrical And Thermal Characteristics (Curves)

Figure 1. Output Characteristics

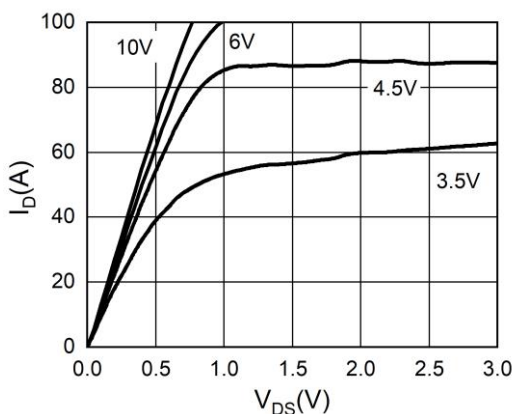


Figure 2. Transfer Characteristics

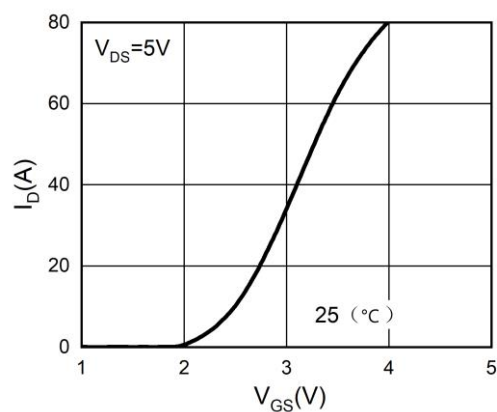


Figure 3. Power Dissipation

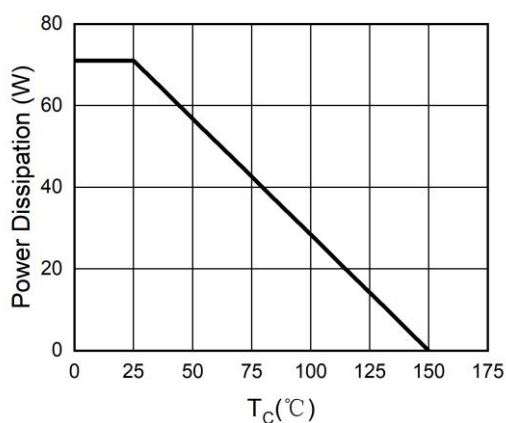


Figure 4. Drain Current

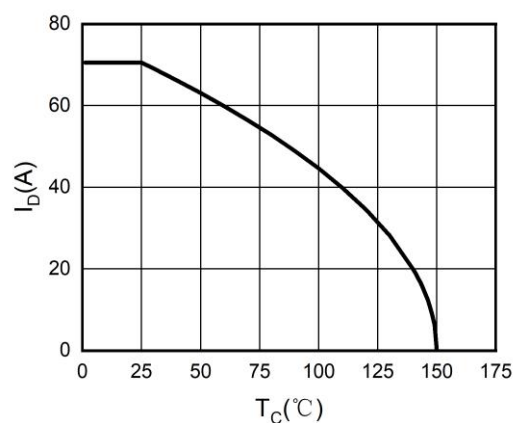


Figure 5. BV_{DSS} vs Junction Temperature

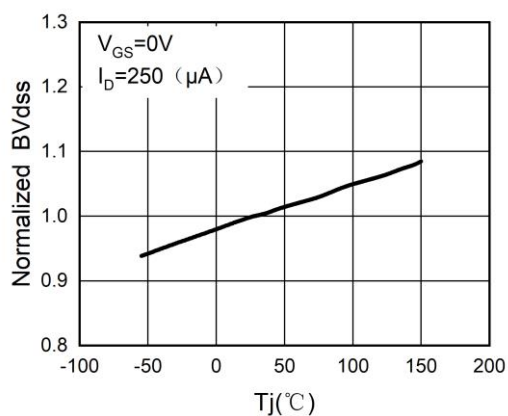
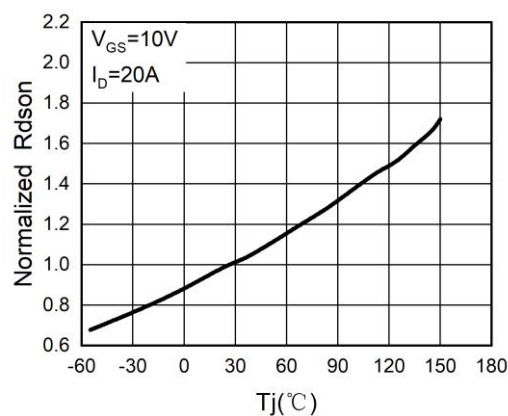
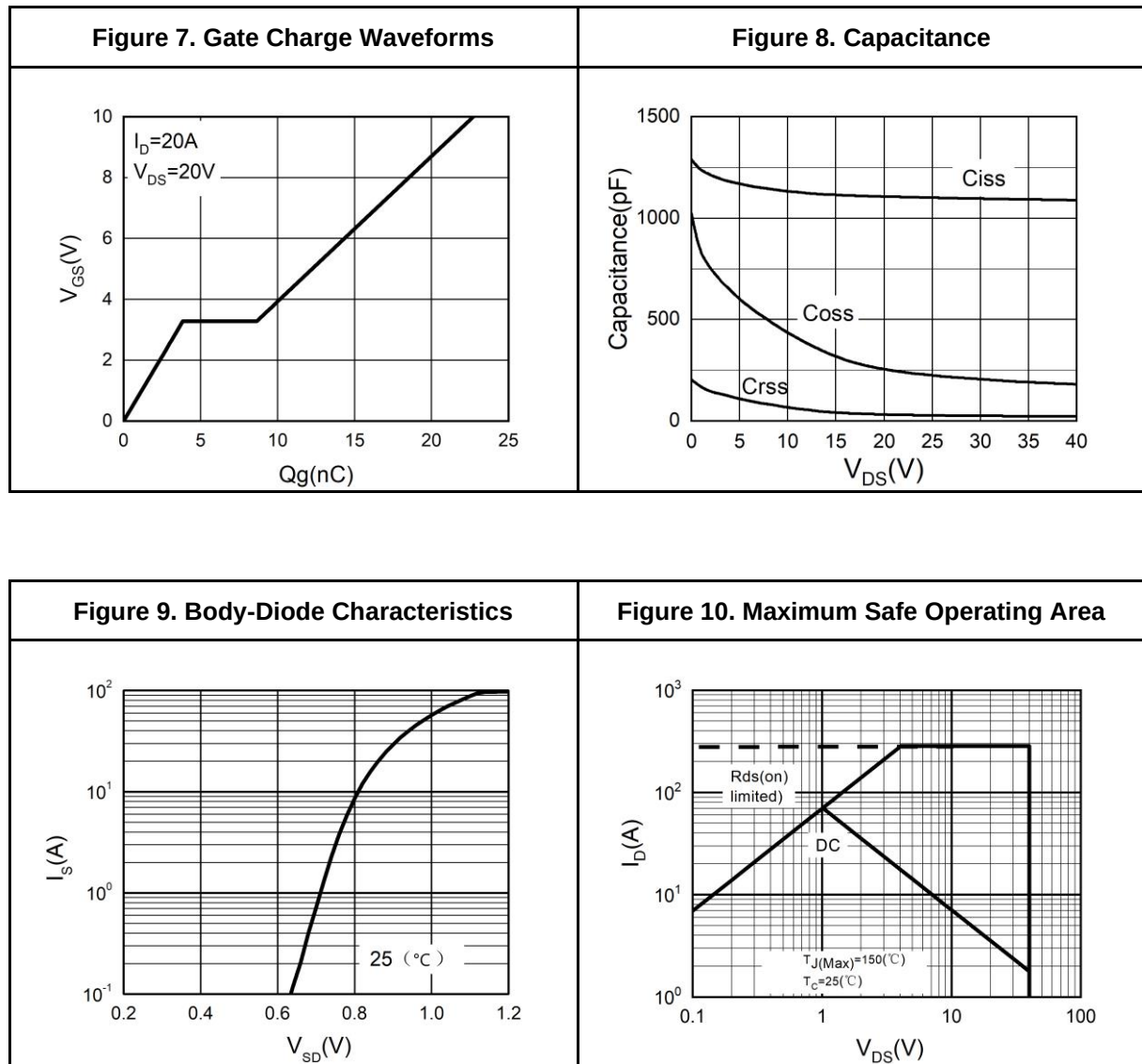


Figure 6. $R_{DS(ON)}$ vs Junction Temperature



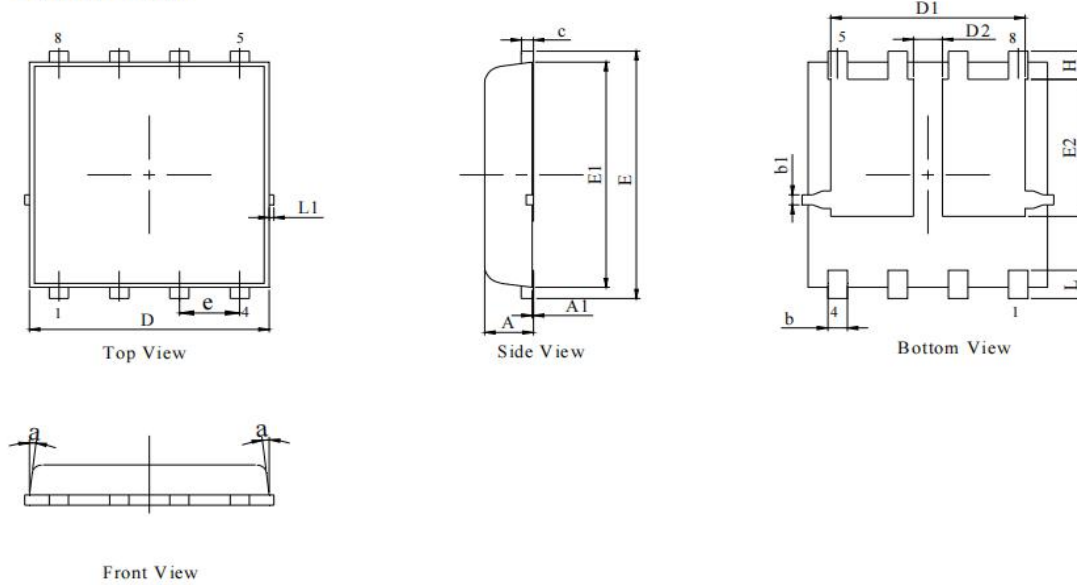
Typical Electrical And Thermal Characteristics (Curves)



Dual PDFN5*6 Package Outline Data

PDFN5x6-8L-D Package Information

Package Outline

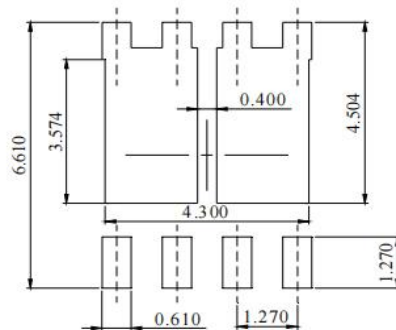


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. ALL DIMENSIONS IN MILLIMETER (ANGLE IN DEGREE).
3. DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD FLASH PROTRUSIONS OR GATE BURRS.

DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0.00	-	0.10
b	0.31	0.41	0.51
b1	0.15	0.25	0.35
c	0.23	-	0.33
D	4.95	5.05	5.15
D1	4.00	4.10	4.20
D2	0.50	0.60	0.70
E	6.05	6.15	6.25
E1	5.50	5.60	5.70
E2	3.31	3.41	3.51
e	1.27BSC		
H	0.60	0.70	0.80
L	0.50	0.70	0.80
L1	-	-	0.125
a	-	-	12°

Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS