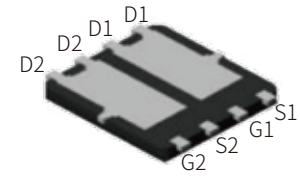
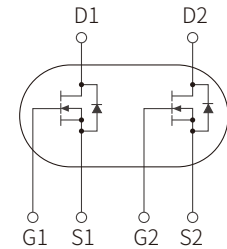


FEATURES

- | $R_{DS(ON)} \leq 13m\Omega$ @ $V_{GS} = 10V$
- | $R_{DS(ON)} \leq 22.5m\Omega$ @ $V_{GS} = 4.5V$
- | Advanced Trench Technology
- | Excellent $R_{DS(ON)}$ and Low Gate Charge
- | 100% UIS TESTED!
- | 100% ΔV_{ds} TESTED!



PDFN3.3×3.3-8L



Schematic Symbol

APPLICATION

- | Load Switch
- | PWM Application
- | Power Management

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	30	V
Pulsed Drain Current ⁽¹⁾	I_{DM}	60	A
Continuous Drain Current	I_D	15	A
		9	A
Power Dissipation $T_c = 25^\circ C$	P_D	5	W
Gate-to-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy ⁽²⁾	E_{AS}	20	mJ
Junction & Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	25	$^\circ C/W$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	1.1	1.6	2.2	V
Drain Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
On Characteristics						
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Static Drain-Source ON-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =10A		9.3	13	mΩ
		V _{GS} =4.5V, I _D =7A		14.5	22.5	mΩ
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f = 1MHz		805		pF
Output capacitance	C _{oss}			103		pF
Reverse transfer capacitance	C _{rss}			82		pF
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =0 to 10V I _D =15A		16		nC
Gate-Source Charge	Q _{gs}			3.6		nC
Gate Drain("Miller") Charge	Q _{gd}			3.4		nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V, V _{GS} =10V R _{GEN} = 3Ω, I _D =15A		6		nS
Turn-on Rise Time	t _r			16		nS
Turn-Off Delay Time	t _{d(off)}			17		nS
Turn-Off Fall Time	t _f			5		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V			1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F =13A di/dt = 100A/us		9.4		nS
Body Diode Reverse Recovery Charge	Q _{rr}			3.3		nC
Maximum Continuous Drain to Source Diode Forward Current	I _S				15	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}				60	A

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition: Starting TJ=25°C, VDD=15V, VG=10V, RG=25ohm, L=0.5mH, IAS=9A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

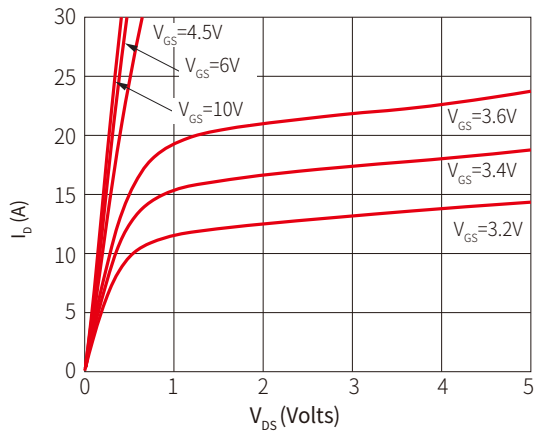


Figure 2: Typical Transfer Characteristics

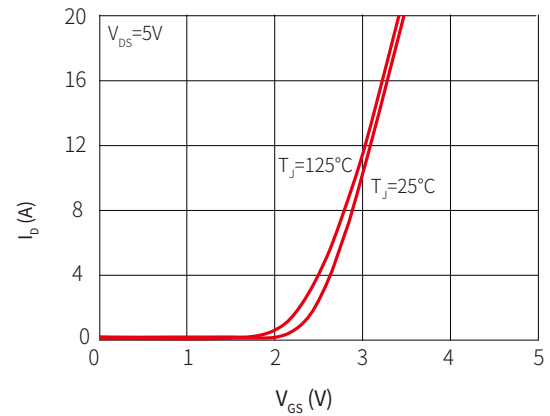


Figure 3: On-Resistance vs. Drain Current

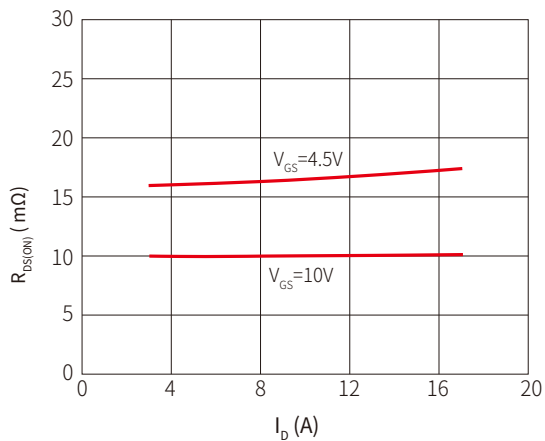


Figure 4: Body Diode Characteristics

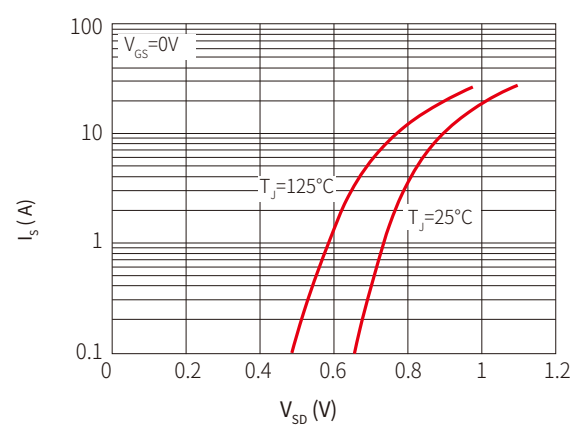


Figure 5: Gate Charge Characteristics

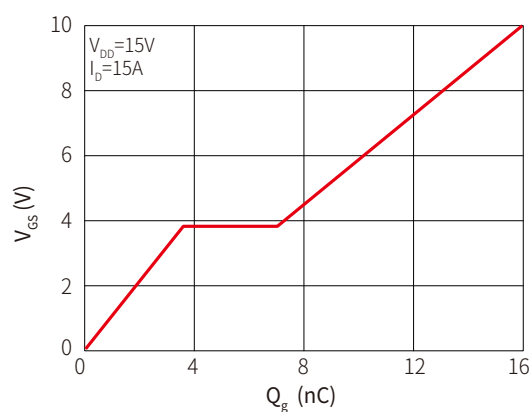


Figure 6: Capacitance Characteristics

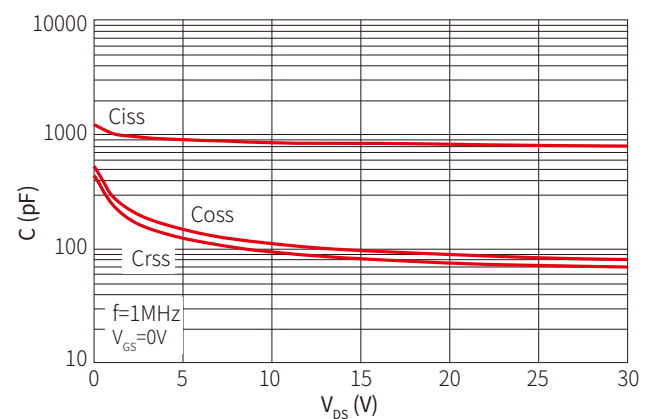
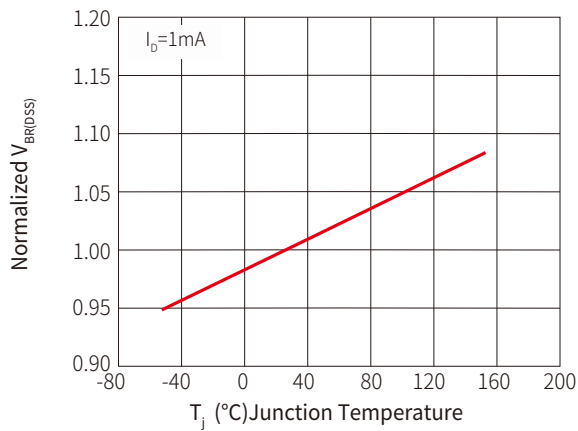
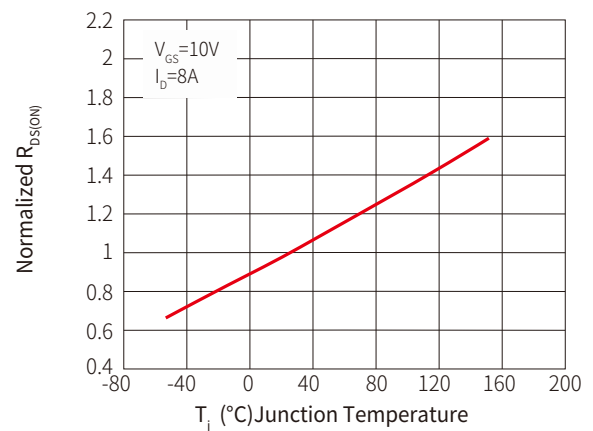
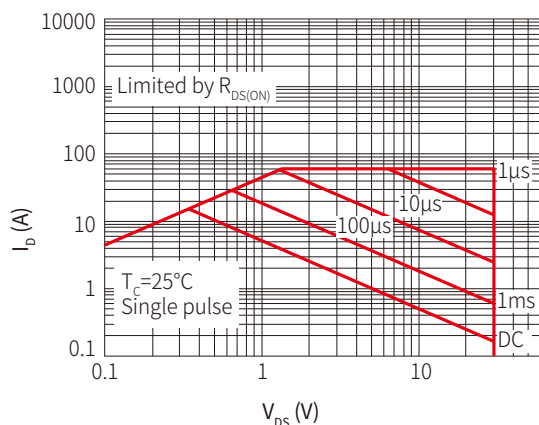
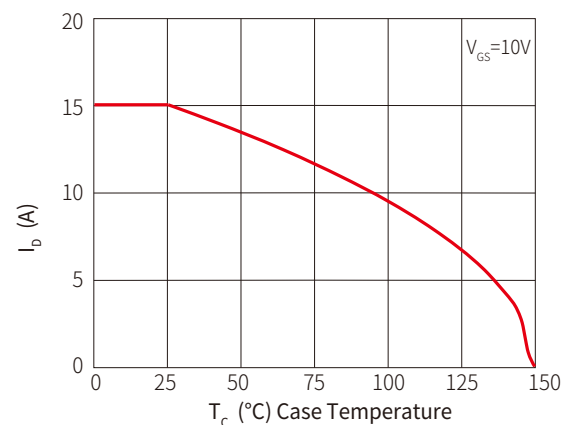
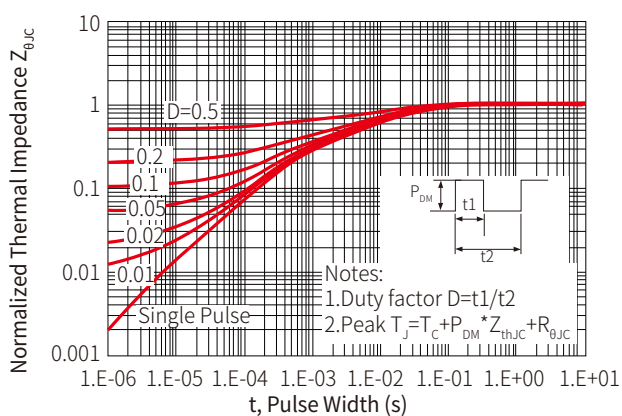
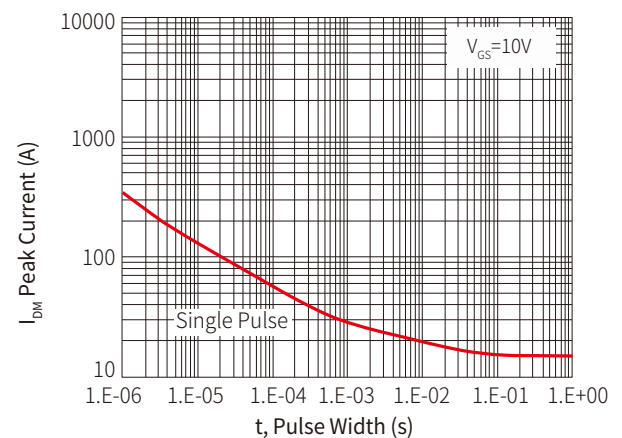
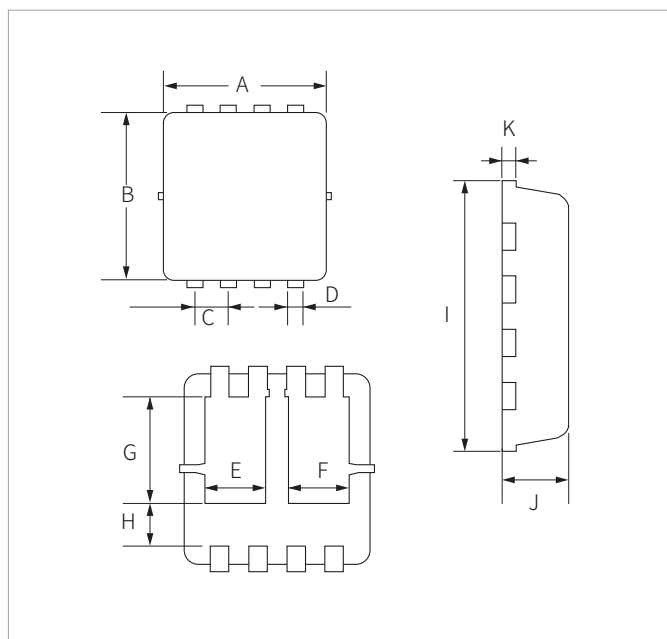


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

Figure 8: Normalized on Resistance vs. Junction Temperature

Figure 9: Maximum Safe Operating Area

Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

Figure 11: Normalized Maximum Transient Thermal Impedance

Figure 12: Peak Current Capacity


PDFN3.3x3.3-8L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.05	3.25	0.120	0.128
B	3.15	3.55	0.124	0.140
C	0.65		0.026	
D	0.32		0.013	
E	0.835	1.235	0.033	0.049
F	0.835	1.235	0.033	0.049
G	1.53	1.93	0.060	0.076
H	0.49	0.89	0.020	0.035
I	3.10	3.50	0.122	0.138
J	0.65	0.90	0.026	0.035
K	0.152		0.006	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNNM20N03D	PDFN3.3×3.3-8L	 20N03 XXXX	5000PCS	13"

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By QR Code

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