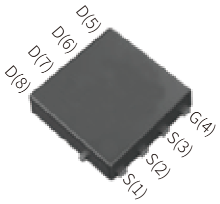
SEMIWARE®

SNM032N10G

N-Channel MOSFET

FEATURES

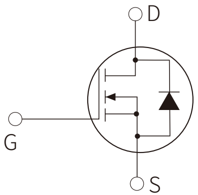
- Uses advanced MOSFET-DPMOS technology
- Extremely low on-resistance $R_{DS(on)}$
- Excellent Q_gx$R_{DS(on)}$ product(FOM)
- Qualified according to JEDEC criteria



PDFN5×6-8L

APPLICATION

- Motor control and drive
- Battery management
- UPS (Uninterrupible Power Supplies)



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	100	V
Pulsed drain current (T_C=25°C, tp limited by T_{jmax})		$I_{D\,pulse}$	820	A
Continuous Drain Current	T_C=25°C	I_D	205	A
	T_C=100°C		145	A
Gate-Source Voltage		V_{GSS}	±20	V
Power Dissipation (Tc=25°C)		P_{tot}	213	W
Junction Temperature		T_J	-55 to 150	°C
Storage Temperature		T_{STG}	-55 to 150	°C
Thermal resistance, junction – Ambient(min. footprint)		$R_{\theta JA}$	50	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1.2	1.6	2.2	V
Drain Leakage Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±100	nA
On-State Resistance (3)	$R_{DS(on)}$	V_{GS}=10V,I_D=40A		2.4	3.0	mΩ
		V_{GS}=4.5V,I_D=40A		3.0	3.9	mΩ
Dynamic Characteristics						
Total Gate Charge	Q_g	V_{GS} =10V V_{DS}=50V,I_D=50A,f=1MHz		65		nC
Gate Source Charge	Q_{gs}			19		nC
Gate Drain("Miller") Charge	Q_{gd}			9		nC
Input capacitance	C_{iss}	V_{GS}=0V,V_{DS}=50V, f=1MHz		4436		pF
Output capacitance	C_{oss}			1977		pF
Reverse transfer capacitance	C_{rss}			32		pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=50V,V_{GS}=10V R_{GEN}= 2.7Ω		15		nS
Turn-on Rise Time	t_r			47		nS
Turn-Off Delay Time	$t_{d(off)}$			46		nS
Turn-Off Fall Time	t_f			18		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V_{SD}	I_{SD}=20A,V_{GS}=0V		0.8	1.3	V
Body Diode Reverse Recovery Time (1)	t_{rr}	I_F=50A, dI/dt=40A/μs		58		ns
Body Diode Reverse Recovery Charge (1)	Q_{rr}			95		nC

Notes:
1.Defined by design. Not subject to production test

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

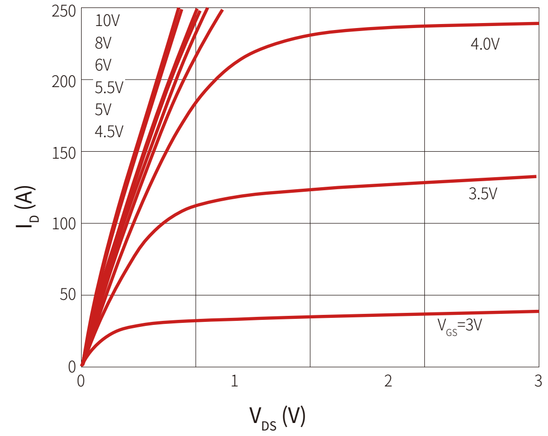


Figure 2: Transfer Characteristics

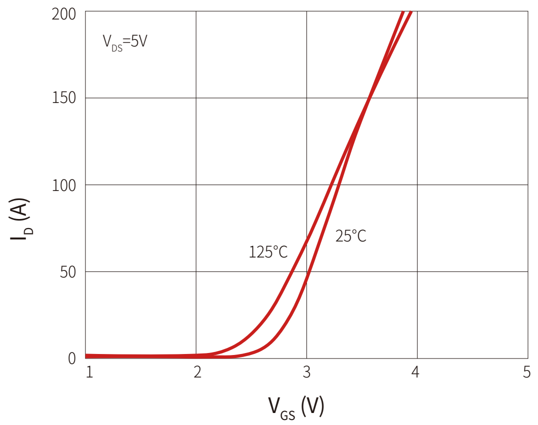


Figure 3: On-Resistance vs. Drain Current

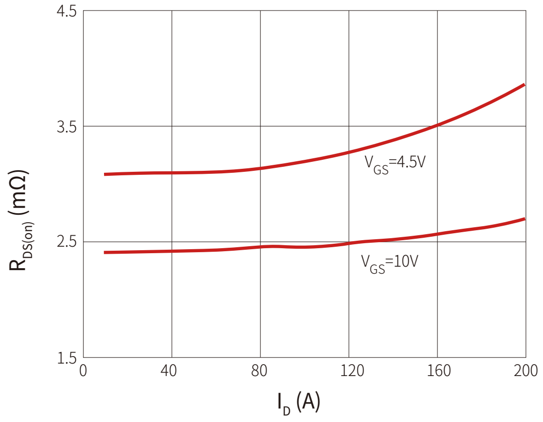


Figure 4: $R_{DS(ON)}$ vs Gate Voltage

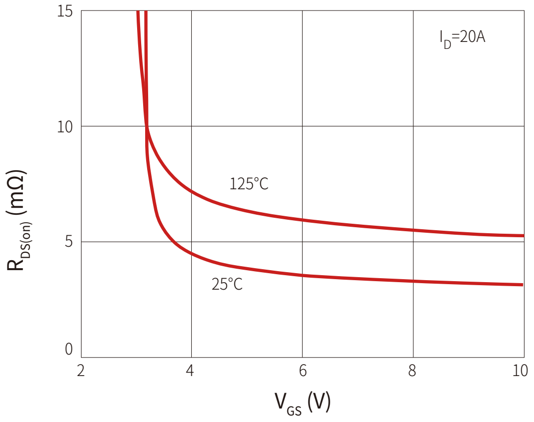


Figure 5: $R_{DS(ON)}$ vs. Temperature

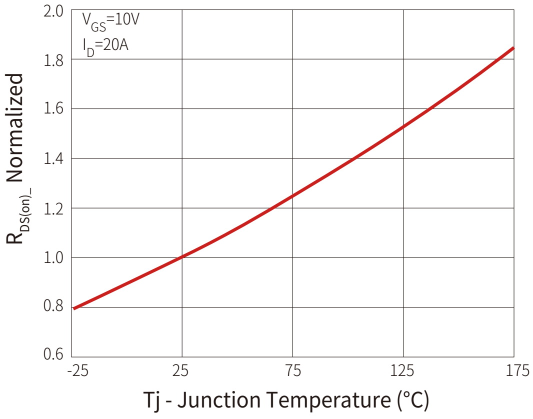


Figure 6: Capacitance Characteristics

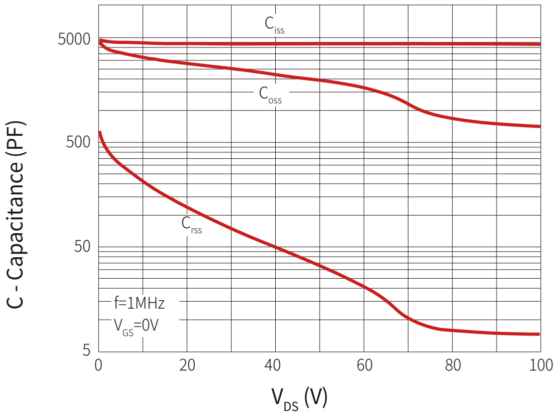


Figure 7: Gate Charge Characteristics

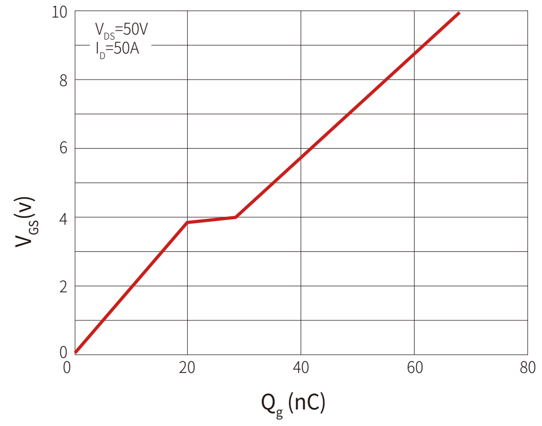


Figure 8: Body-Diode Forward Characteristics

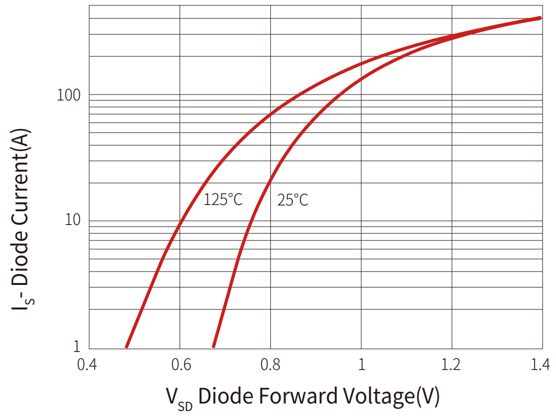


Figure 9: Power Dissipation

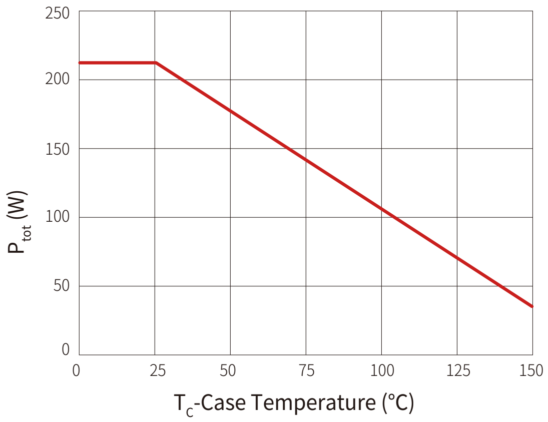


Figure 10: Drain Current Derating

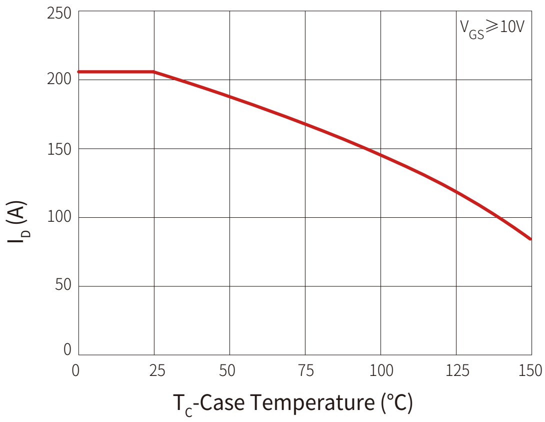


Figure 11: Safe Operating Area

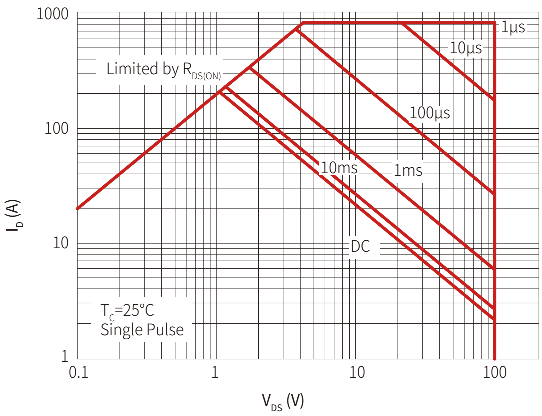
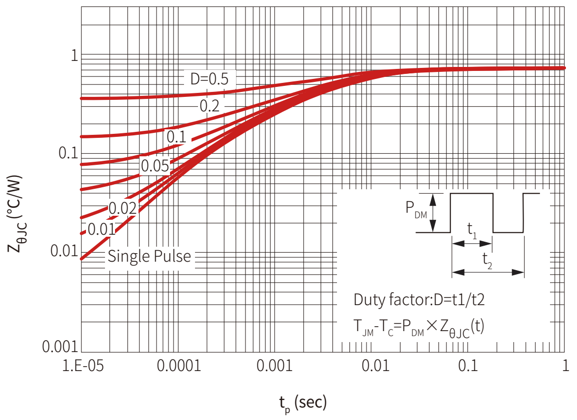
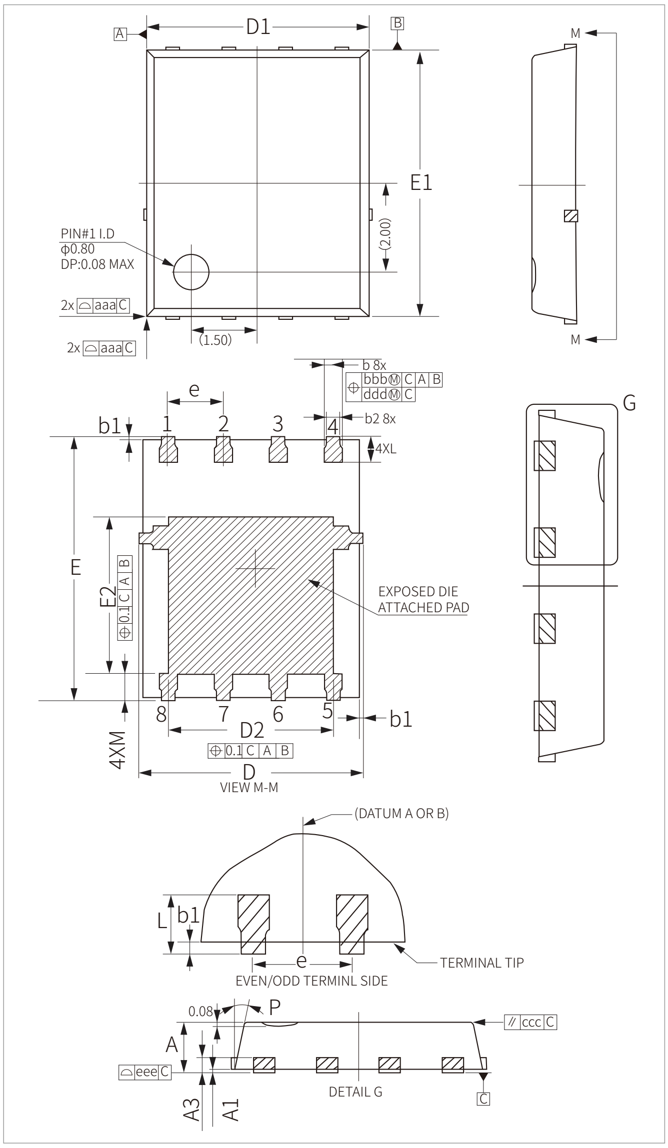


Figure 12: Max. Transient Thermal Impedance



PDFN5×6-8L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.17	0.035	0.046
A1	0.00	0.05	0.000	0.002
A3	0.254REF		0.010REF	
b	0.31	0.51	0.012	0.020
b1	0.03	0.13	0.001	0.005
b2	0.21	0.41	0.008	0.016
D	5.15BSC		0.203BSC	
D1	5.00BSC		0.197BSC	
D2	3.70	3.90	0.146	0.154
E	6.15BSC		0.242BSC	
E1	6.00BSC		0.236BSC	
E2	3.56	3.76	0.140	0.148
e	1.27BSC		0.050BSC	
L	0.51	0.71	0.020	0.028
M	0.51	0.71	0.020	0.028
P	10°	12°	0.394°	0.472°
aaa	0.10		0.004	
bbb	0.10		0.004	
ccc	0.10		0.004	
ddd	0.05		0.002	
eee	0.08		0.003	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM032N10G	PDFN5×6-8L	032N10 XXXX	5000PCS	13”

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By QR Code

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