

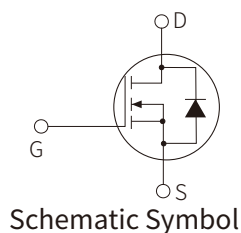
FEATURES

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



APPLICATION

- Networking DC-DC Power System
- Battery management
- Load Switch



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}	60	V
Pulsed drain current ($T_c=25^\circ\text{C}$, tp limited by T_{jmax})	$I_{D\ pulse}$	1104	A
Continuous Drain Current	I_D	$T_c=25^\circ\text{C}$ 276	A
		$T_c=100^\circ\text{C}$ 175	A
Gate-Source Voltage	V_{GSS}	± 20	V
Power Dissipation ($T_c=25^\circ\text{C}$)	P_{tot}	208	W
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance- Junction to Case	$R_{\theta JC}$	0.6	$^\circ\text{C/W}$
Thermal resistance, junction – Ambient(min. footprint)	$R_{\theta JA}$	62	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V,I _{DS} =250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _{DS} =250μA	1.2	1.8	2.4	V
Drain Leakage Current	I _{DSS}	V _{DS} =60V,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 =20A		1.5	2	mΩ
		V _{GS} =4.5V,I _D =20A		1.8	2.35	mΩ
Dynamic Characteristics						
Total Gate Charge	Q _g	V _{GS} =10V V _{DS} =30V,I _D =30A,f=1MHz		55		nC
Gate Source Charge	Q _{gs}			16		nC
Gate Drain("Miller") Charge	Q _{gd}			10		nC
Input capacitance	C _{iss}	V _{GS} =0V,V _{DS} =30V, f=1MHz		3552		pF
Output capacitance	C _{oss}			816		pF
Reverse transfer capacitance	C _{rss}			53		pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V,V _{GS} =10V R _{GEN} =2.7Ω		9		nS
Turn-on Rise Time	t _r			12		nS
Turn-Off Delay Time	t _{d(off)}			47		nS
Turn-Off Fall Time	t _f			12		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V _{SD}	I _{SD} =30A,V _{GS} =0V		0.8	1.2	V
Diode continuous forward current T _c = 25°C	I _S				276	A
Diode pluse current T _c = 25°C	I _{S pluse}				1104	A
Body Diode Reverse Recovery Time ⁽¹⁾	t _{rr}	I _F =30A, dI/dt=100A/μs		32		ns
Body Diode Reverse Recovery Charge ⁽¹⁾	Q _{rr}			65		nC

Notes:

1. Defined by design. Not subject to production test

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

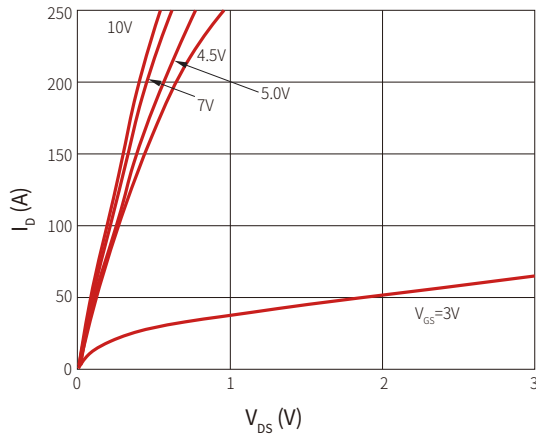


Figure 2: Transfer Characteristics

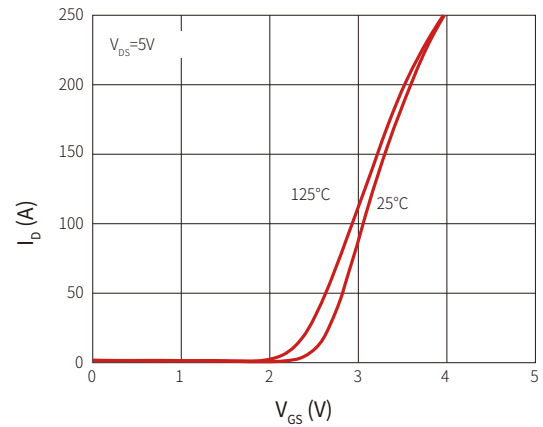


Figure 3: On-Resistance vs. Drain Current

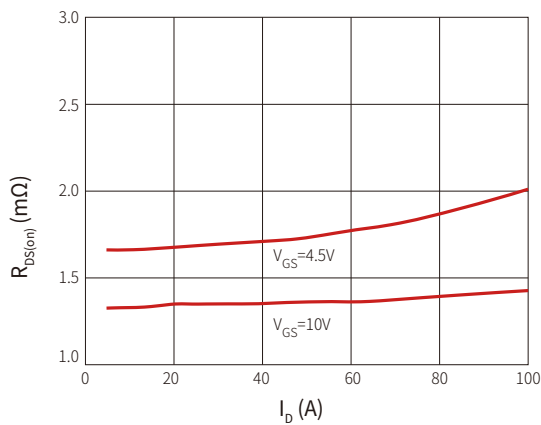


Figure 4: $R_{DS(on)}$ vs Gate Voltage

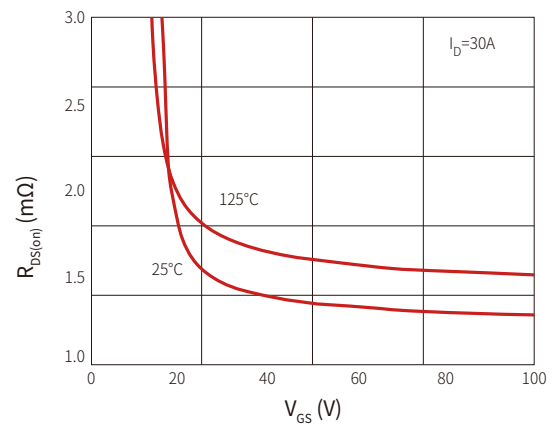


Figure 5: $R_{DS(on)}$ vs. Temperature

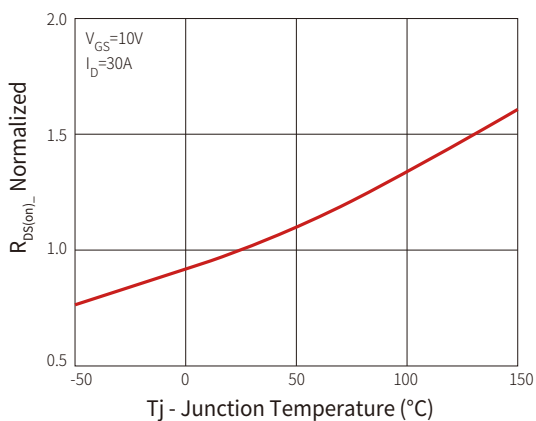


Figure 6: Capacitance Characteristics

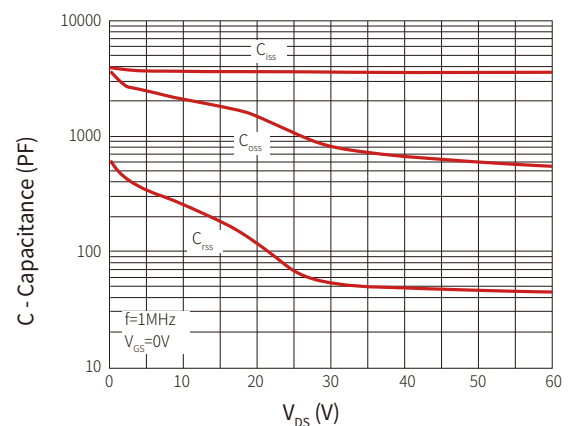
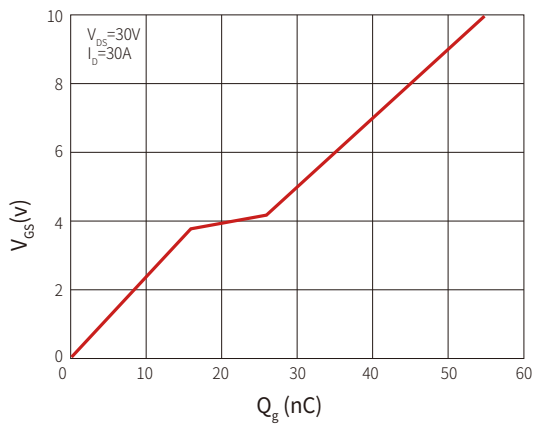
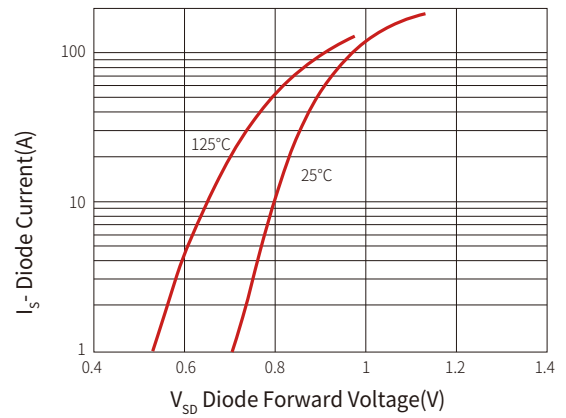
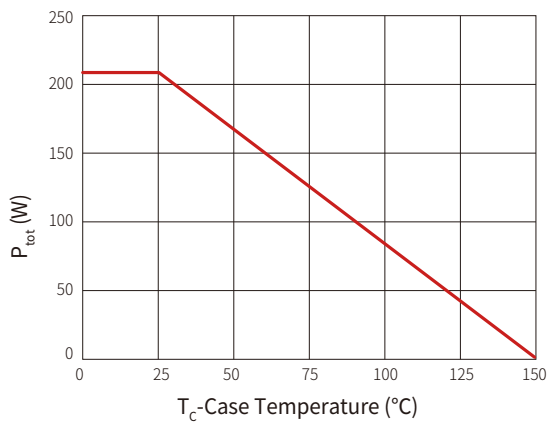
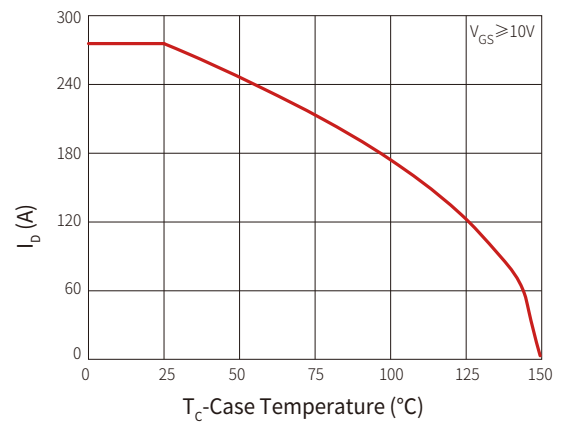
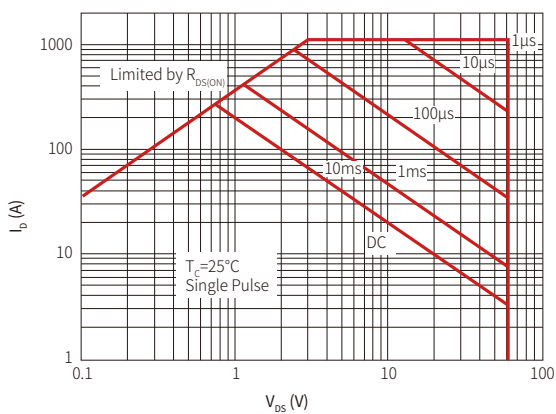
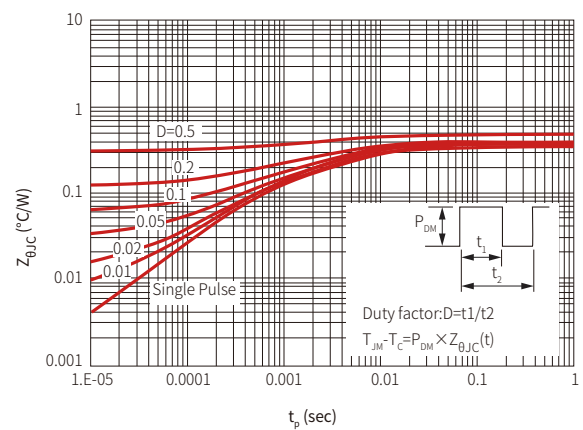
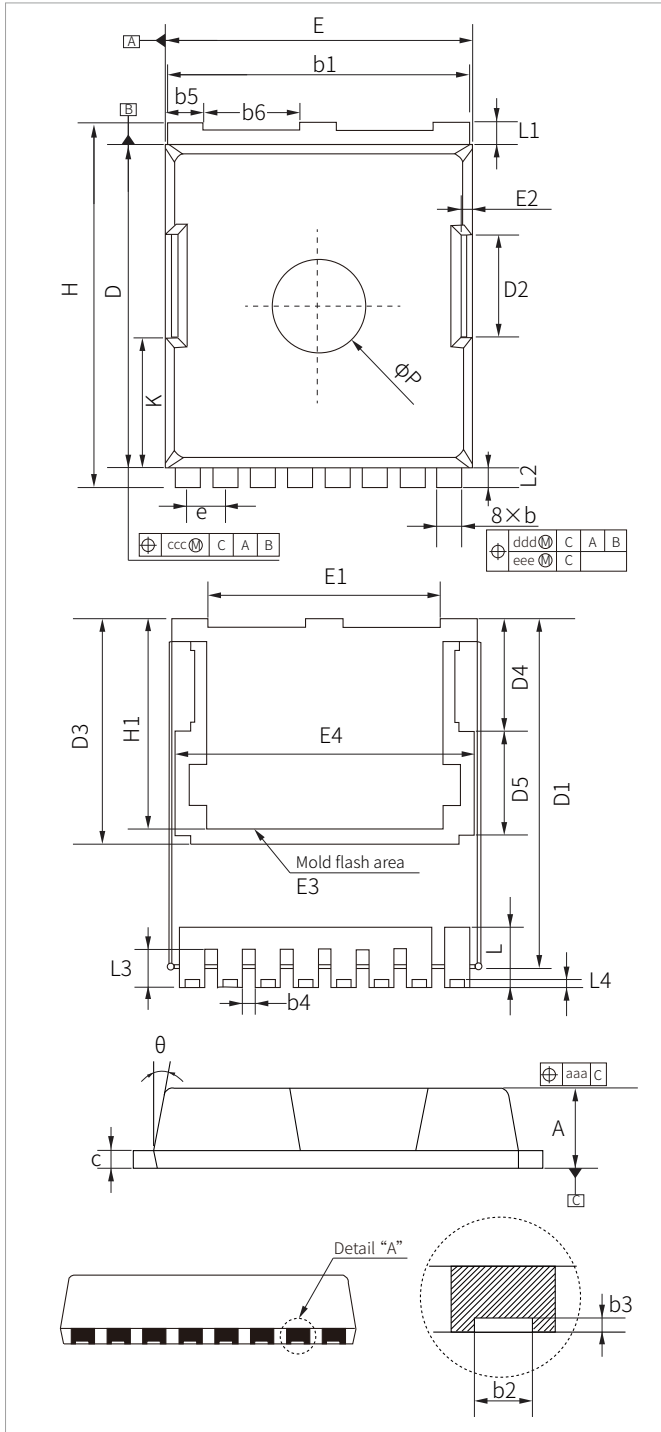


Figure 7: Gate Charge Characteristics

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


TOLL-8L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
b	0.70	0.90	0.028	0.035
b1	9.70	9.90	0.382	0.390
b2	0.36	0.55	0.014	0.022
b3	0.05	-	0.002	-
b4	0.30	0.50	0.012	0.020
b5	1.10	1.30	0.043	0.051
b6	3.00	3.20	0.118	0.126
c	0.40	0.60	0.016	0.024
D	10.28	10.55	0.405	0.415
D1	10.98	11.18	0.432	0.440
D2	3.20	3.40	0.126	0.134
D3	7.15		0.281	
D4	3.59		0.141	
D5	3.26		0.128	
e	1.10	1.30	0.043	0.051
E	9.80	10.00	0.386	0.394
E1	7.40	7.60	0.291	0.299
E2	7.40	7.60	0.291	0.299
E3	8.50		0.335	
E4	9.46		0.372	
H	11.50	11.85	0.453	0.466
H1	6.55	6.75	0.258	0.266
K	4.08	4.28	0.161	0.169
L	1.60	2.10	0.063	0.083
L1	0.50	0.90	0.020	0.035
L2	0.50	0.70	0.020	0.028
L3	1.00	1.30	0.040	0.051
L4	0.13	0.33	0.005	0.013
P	2.85	3.15	0.112	0.124
θ	10°REF		0.398°REF	
aaa	0.20		0.008	
ccc	0.20		0.008	
ddd	0.25		0.010	
eee	0.20		0.008	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	QTY/Box
SNM270N06T	TOLL-8L	 270N06 XXXX	2000PCS	10000PCS

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By QR Code

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