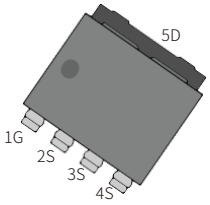
FEATURES

- Surface-mounted package
- Advanced trench cell design
- Super Trench



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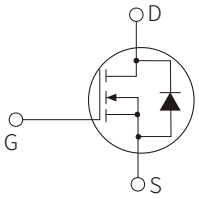
APPLICATION

- BMS
- Drones
- High power inverter system
- Light electric vehicles



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 T_C=25°C		V_{DS}	60	V
Drain Current (Pulsed) T_C=25°C		I_{DM}	1200	A
Drain Current (DC)	T_C=25°C	I_D**	300	A
	T_C=100°C		250	A
Gate-Source Voltage T_C=25°C		V_{GS}	±20	V
Drain power dissipation T_C=25°C		P_{tot}	197	W
Junction Temperature		T_J	175	°C
Storage Temperature		T_{STG}	-55 to 175	°C
Single Pulsed Avalanche Energy L=1.0mH		E_{AS}	1200	mJ
Thermal Resistance –Junction to Ambient		$R_{\theta JA}$*	46	°C/W
Thermal Resistance- Junction to Case		$R_{\theta JC}$	0.76	°C/W
Continuous-Source Current T_C=25°C		I_S	300	A

Notes:
* Surface Mounted on 1 in² pad area, t ≤10 sec
** Pulse width ≤300us, duty cycle≤ 2 %

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_{DS}=250μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_{DS}=250μA	1		2.5	V
Drain Leakage Current	I_{DSS}	V_{DS}=48V,V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±100	nA
On-State Resistance	$R_{DS(on)}$ [a]	V_{GS}=10V,I_{DS}=50A		0.6	0.68	mΩ
		V_{GS}=4.5V,I_{DS}=30A		1.1	1.45	mΩ
Diode Characteristics						
Diode Forward Voltage	V_{SD} [a]	I_{SD}=50A,V_{GS}=0V			1.3	V
Reverse Recovery Time	t_{rr}	I_{DS}=50A, V_{GS}=0V dI_{SD}/dt=100A/μs		82		nS
Reverse Recovery Charge	Q_{rr}			165		nC
Dynamic Characteristics[b]						
Input capacitance	C_{iss}	V_{GS}=0V,V_{DS}=30V, Frequency = 1 MHz		8770		pF
Output capacitance	C_{oss}			2389		pF
Reverse transfer capacitance	C_{rss}			268		pF
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=30V,V_{GEN}=10V R_G= 3.9Ω, R_L=0.6Ω, I_{DS}=50A		22		nS
Turn-on Rise Time	t_r			107		nS
Turn-Off Delay Time	$t_{d(off)}$			135		nS
Turn-Off Fall Time	t_f			102		nS
Gate Charge Characteristics[b]						
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=10V,I_{DS}=50A		171		nC
Gate-Source Charge	Q_{gs}			39		nC
Gate-Drain Charge	Q_{gd}			39		nC

Notes:
a : Pulse test ; pulse width≤300us, duty cycle≤2 %
b : Guaranteed by design, not subject to production testing

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

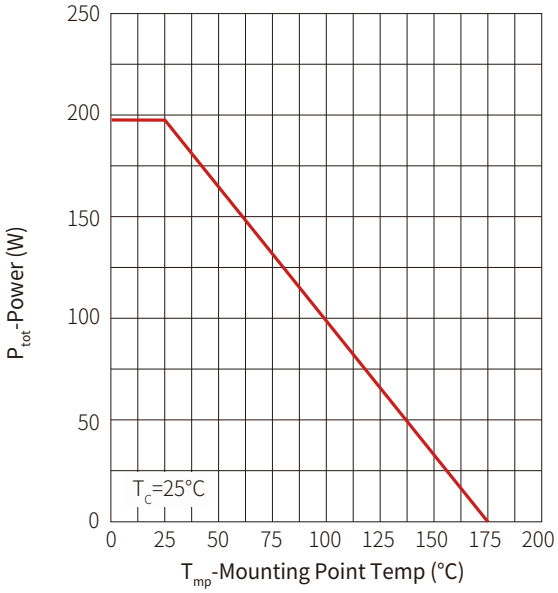


Figure2: Current Capability

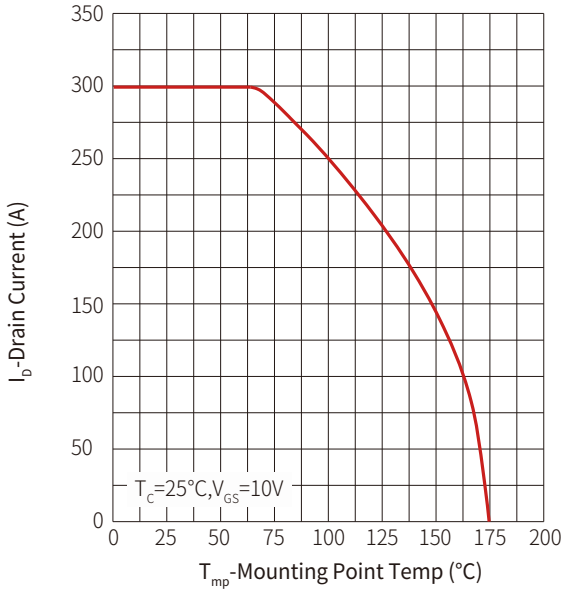


Figure3: Safe operating Area

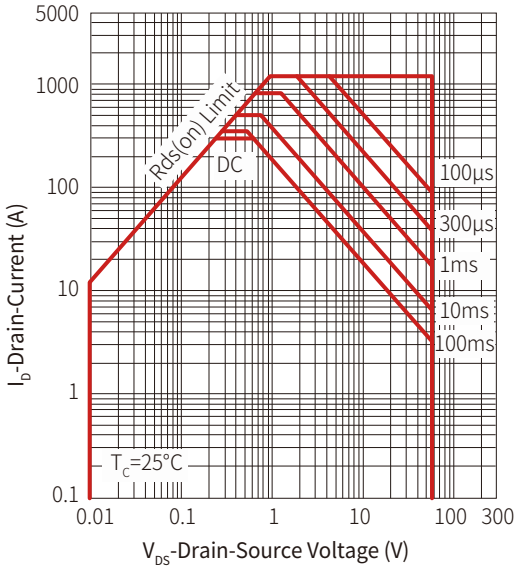


Figure 4: Transient Thermal Impedance

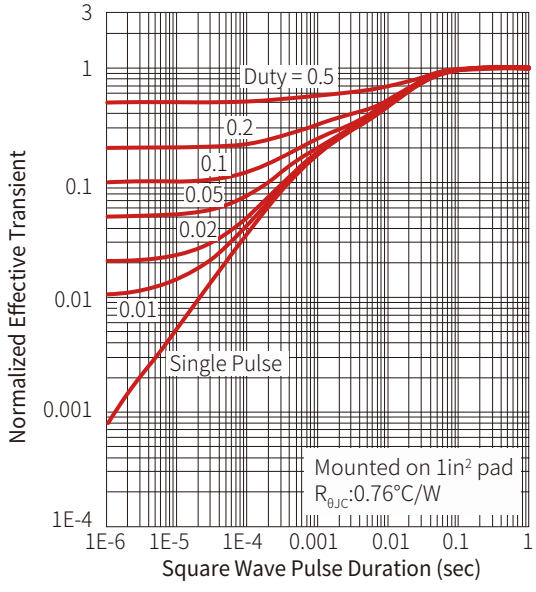


Figure 5:Output Characteristics

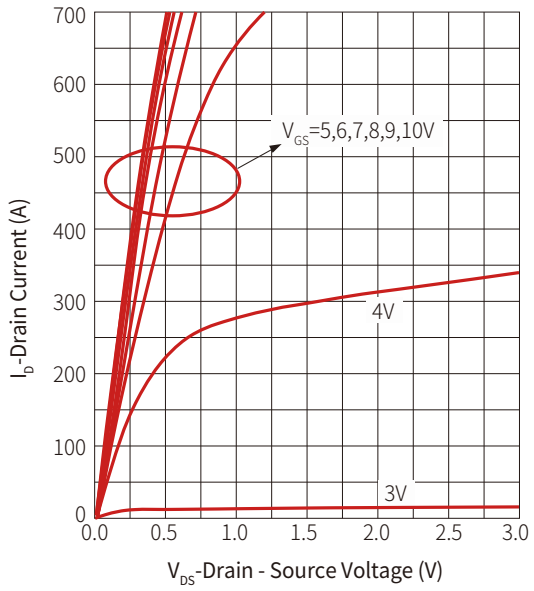


Figure 6: On Resistance

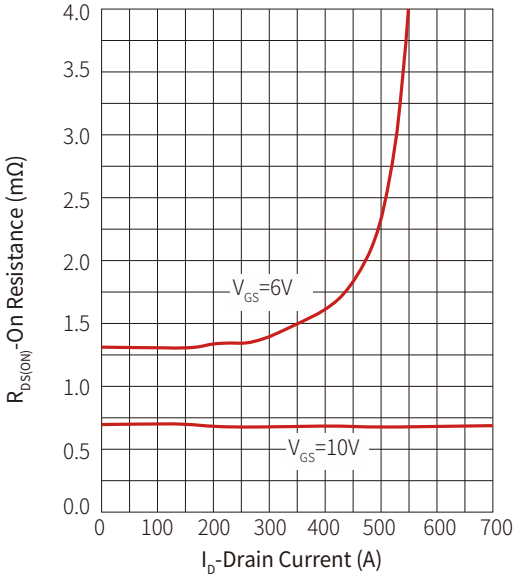


Figure 7:Transfer Characteristics

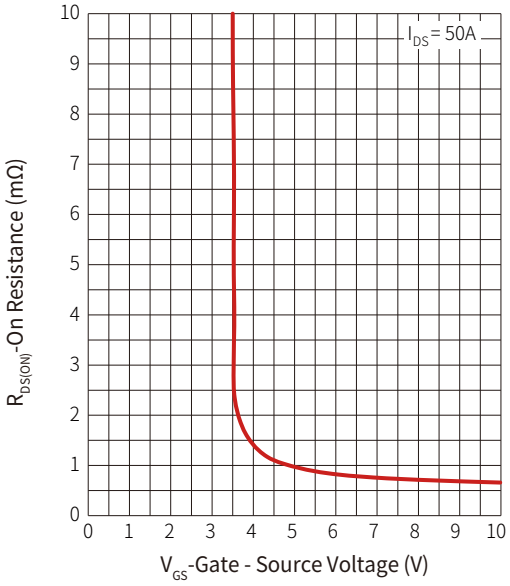


Figure 8: Normalized Threshold Voltage

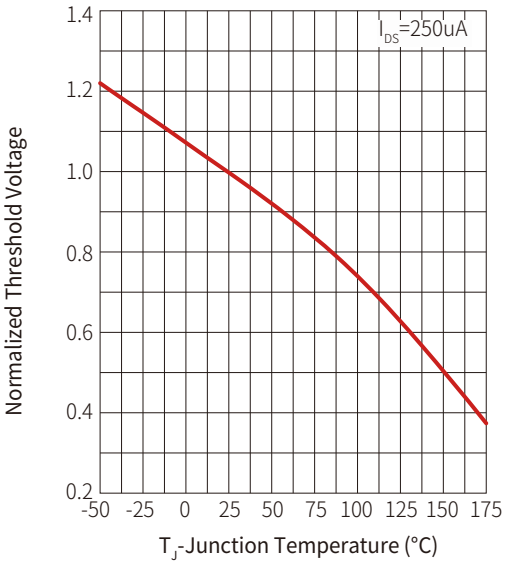


Figure 9:Normalized On Resistance

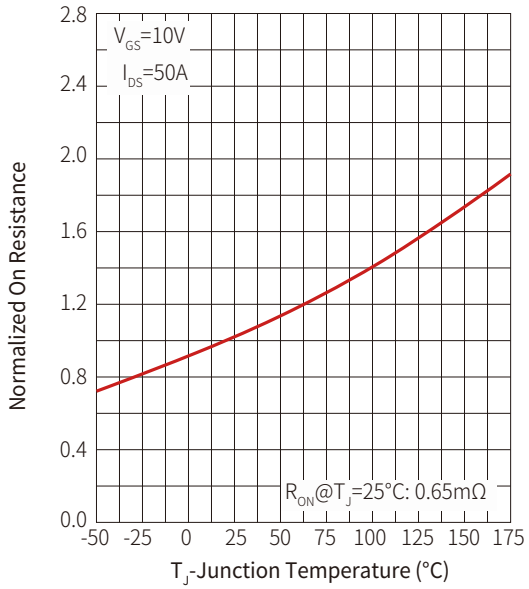


Figure 10: Diode Forward Current

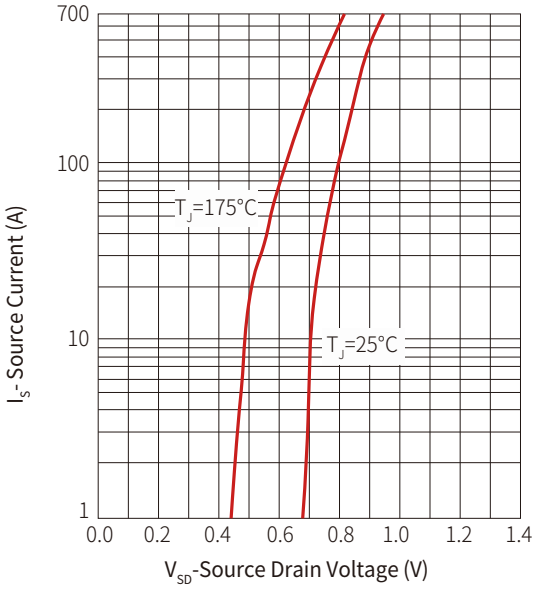


Figure 11:Capacitance

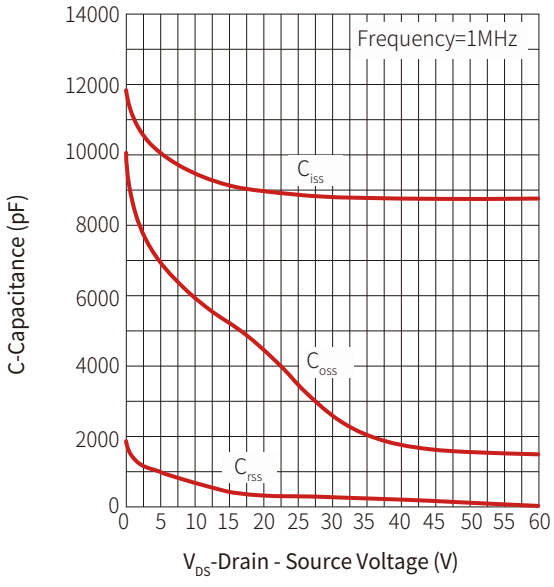
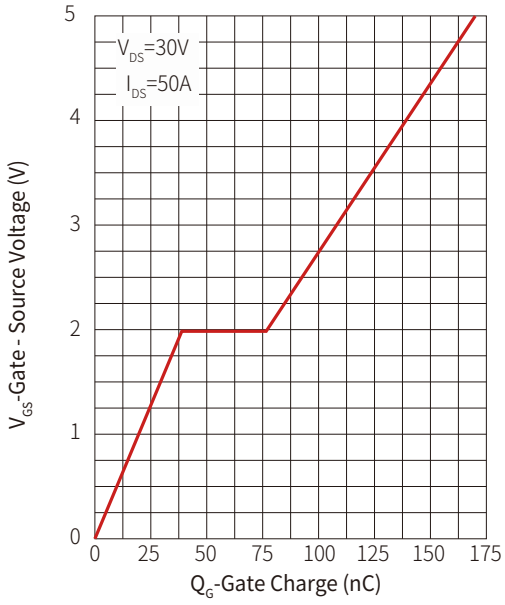
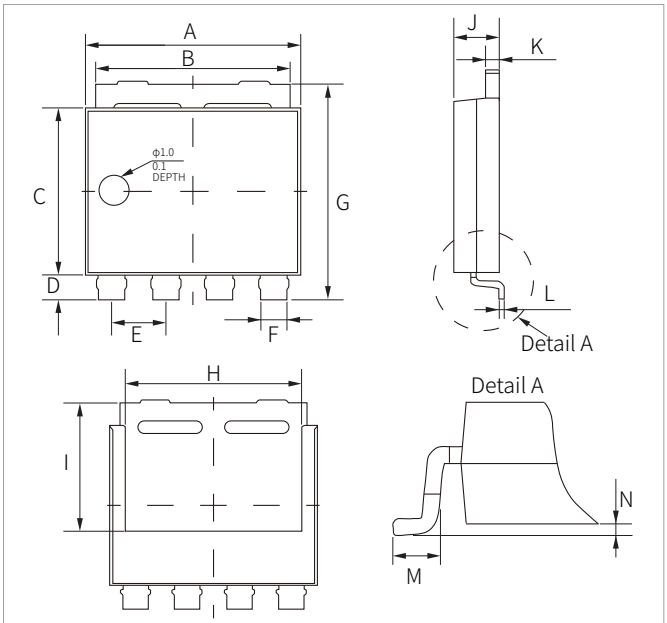


Figure 12: Gate Charge



LFPAK8080 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	7.90	8.10	0.311	0.319
B	7.10	7.30	0.279	0.288
C	6.10	6.30	0.240	0.249
D	0.90	1.30	0.035	0.052
E	2.00(Typ.)		0.079(Typ.)	
F	0.90	1.10	0.035	0.044
G	7.80	8.10	0.307	0.319
H	6.70	6.90	0.263	0.272
I	4.90	5.10	0.192	0.201
J	1.50	1.70	0.059	0.067
K	0.47	0.57	0.018	0.023
L	0.18	0.24	0.008	0.010
M	0.60	0.80	0.023	0.032
N	0.15(Max.)		0.006(Max.)	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	QTY/Box
SNM006N06LF	LFPAK8080	006N06 XXXX	2000PCS	14000PCS

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