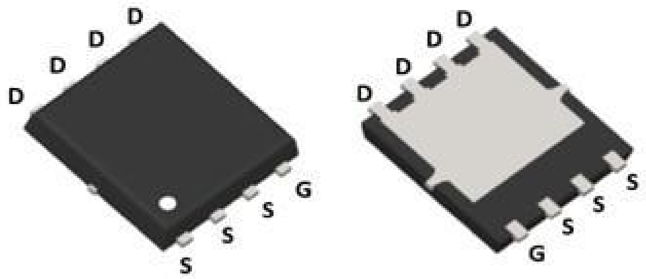
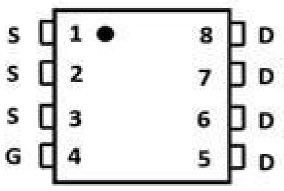
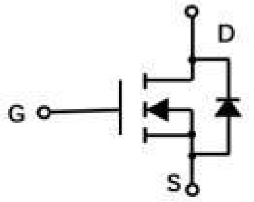
BM30N35

SGT N-Channel Enhancement Mode Field Effect Transistor

PDFN 3x3







Product Summary

● V_{DS}	30V
● I_D	80A
● $R_{DS(ON)}$(at V_{GS}=10V)	<4.3mΩ
● $R_{DS(ON)}$(at V_{GS}=4.5V)	<6.9mΩ
● 100% EAS Tested	
● 100% ▽V_{DS} Tested	

General Description

- Split gate trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power switching application
- Uninterruptible power supply
- DC-DC convertor

■ Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	T_C=25℃	I_D	80	A
	T_C =70℃		64	
Pulsed Drain Current [A]		I_{DM}	240	A
Avalanche energy [B]		EAS	85	mJ
Total Power Dissipation [C]	T_C=25℃	P_D	40	W
	T_C=70℃		26	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250μA	30	-	-	V
		V_{GS}= 0V, I_D=1mA	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V	-	-	1	μA
		V_{DS}=30V, V_{GS}=0V, Tj=150℃	-	-	100	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	1.0	1.50	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A	-	3.0	4.3	mΩ
		V_{GS}=4.5V, I_D=15A	-	5.5	6.9	
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V	-	-	1.2	V
Gate resistance	R_G	f=1MHz	-	3.9	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-	80	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=20V, V_{GS}=0V, f=1MHz	-	930	-	pF
Output Capacitance	C_{oss}		-	540	-	
Reverse Transfer Capacitance	C_{rss}		-	29	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=20V, I_D=50A	-	17	-	nC
Gate-Source Charge	Q_{gs}		-	4.5	-	
Gate-Drain Charge	Q_{gd}		-	2	-	
Reverse Recovery Charge	Q_{rr}	I_F=50A, di/dt=100A/us	-	22	-	nC
Reverse Recovery Time	t_{rr}		-	40	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DD}=20V, I_D=50A R_{GEN}=3Ω	-	6.5	-	ns
Turn-on Rise Time	t_r		-	2.7	-	
Turn-off Delay Time	$t_{D(off)}$		-	26	-	
Turn-off fall Time	t_f		-	3.6	-	

A. Repetitive rating; pulse width limited by max. junction temperature.
B. T_J=25℃, V_G=10V, R_G=25Ω, L=0.5 mH
C. P_d is based on max. junction temperature, using junction-case and junction-ambient thermal resistance.

■Typical Electrical and Thermal Characteristics Diagrams

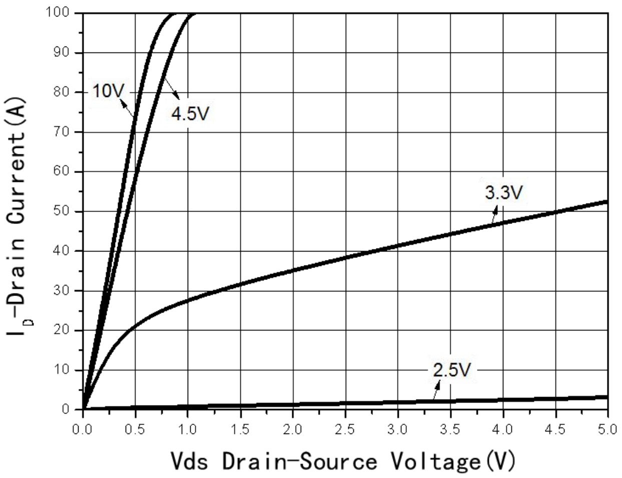


Fig1 Output Characteristics

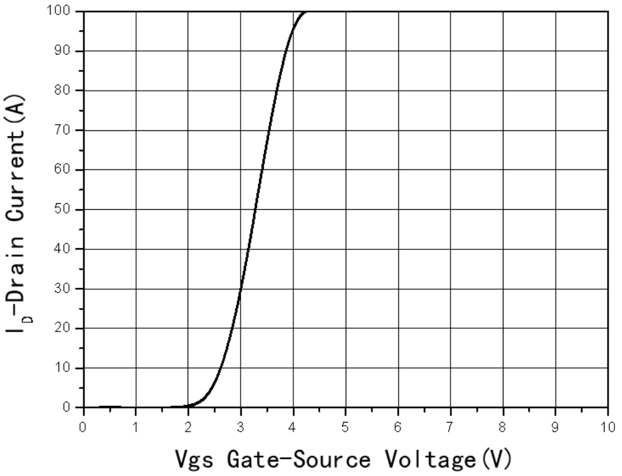


Fig2 Transfer Characteristics

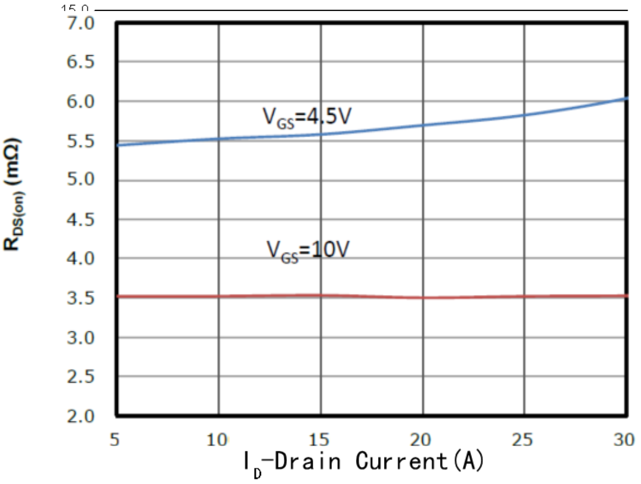


Fig3 Rdson-Drain current

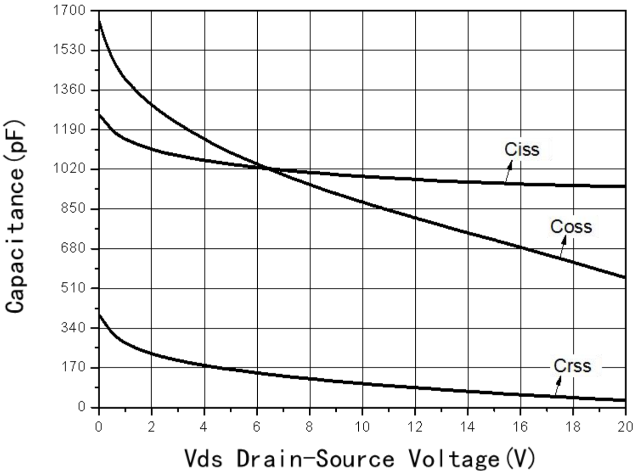


Fig4 Capacitance vs Vds

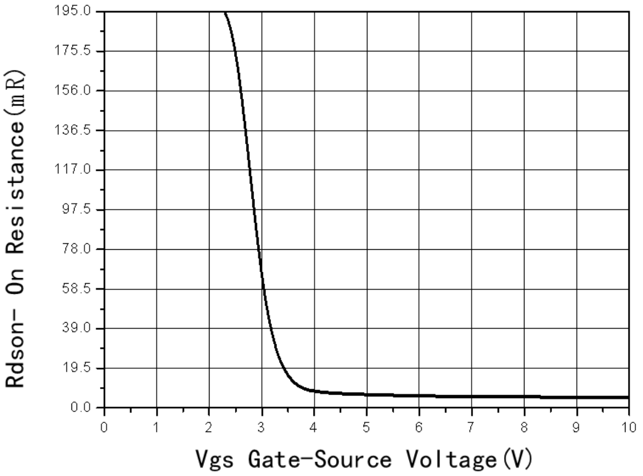


Fig5 Rdson-Gate Drain voltage

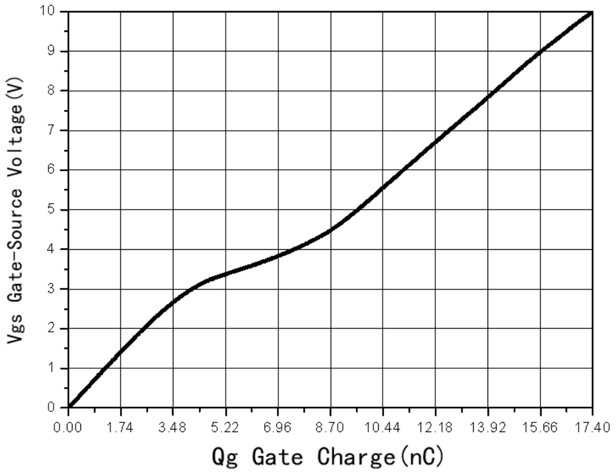


Fig6 Gate Charge

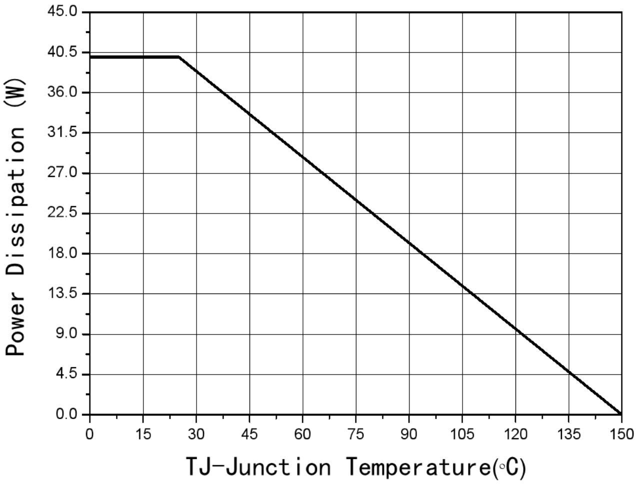


Fig7 Power De-rating

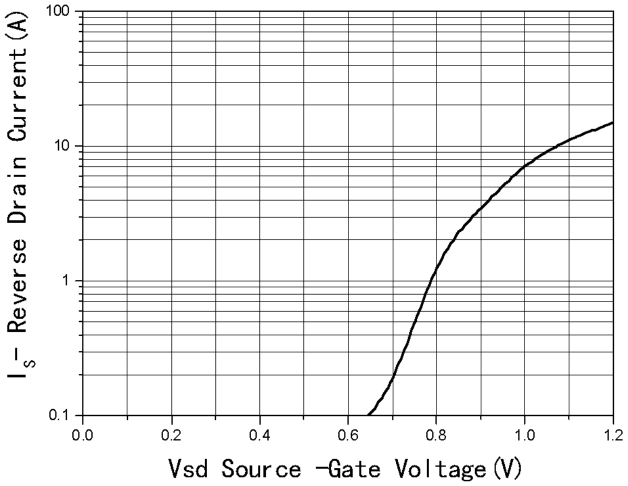
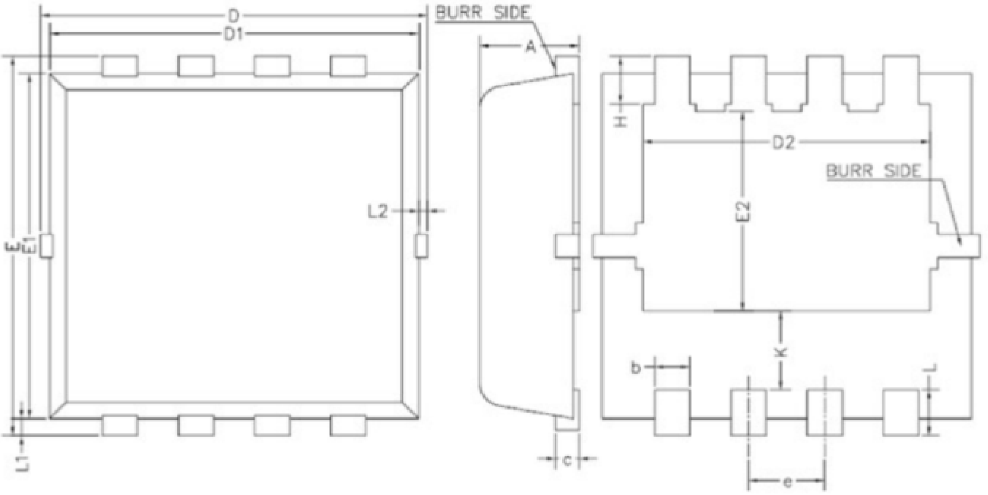
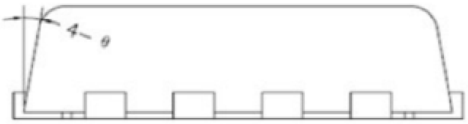


Fig8 Source-Drain Diode Forward

PDFN3030-8L Package information





符号	尺寸（mm）			符号	尺寸（mm）		
	最小值	典型值	最大值		最小值	典型值	最大值
A	0.70	0.80	0.90	E1	2.90	3.00	3.10
b	0.25	0.30	0.35	E2	1.64	1.74	1.84
c	0.14	0.15	0.20	H	0.32	0.42	0.52
D	3.10	3.30	3.50	K	0.59	0.69	0.79
D1	3.05	3.15	3.25	L	0.25	0.40	0.55
D2	2.35	2.45	2.55	L1	0.10	0.15	0.20
e	0.55	0.65	0.75	L2	-	-	0.15
E	3.10	3.30	3.50	θ	8°	10°	12°