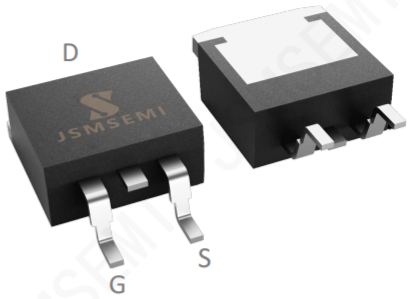
Product Summary

- V_{DS} 80V
- I_D 75A
- $R_{DS(ON)}$(at V_{GS}=10V) ＜9.0mΩ
- 100% EAS Tested
- 100% ▽V_{DS} Tested

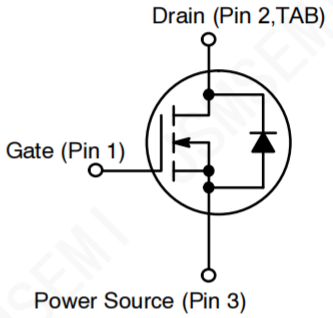


General Description

- Trench Power 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
- Motor drivers



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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	80	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	T_C=25℃	I_D	75	A
	T_C =100℃		50	
Pulsed Drain Current [A]		I_{DM}	300	A
Avalanche energy [B]		EAS	248	mJ
Total Power Dissipation [C]	T_C=25℃	P_D	156	W
	T_C=100℃		100	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient [D]	Steady-State	$R_{\theta JA}$	65	-	℃/W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.0	-	

Ordering Information

Order number	Package	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
IPB097N08N3G -JSM	TO-263	-55 to 150°C	1	T&R,800	Rohs

■ 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	100	-	-	V
		V_{GS}= 0V, I_D=1mA	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V	-	-	1	μA
		V_{DS}=100V, 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	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=50A	-	7.0	9.0	mΩ
		V_{GS}=4.5V, I_D=50A	-	7.7	9.0	
Diode Forward Voltage	V_{SD}	I_S=50A, V_{GS}=0V	-	-	1.2	V
Gate resistance	R_G	f=1MHz	-	2.5	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-	75	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=50V, V_{GS}=0V, f=1MHz	-	2313	-	pF
Output Capacitance	C_{oss}		-	680	-	
Reverse Transfer Capacitance	C_{rss}		-	15	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=40A	-	29	-	nC
Gate-Source Charge	Q_{gs}		-	10	-	
Gate-Drain Charge	Q_{gd}		-	8	-	
Reverse Recovery Charge	Q_{rr}	I_F=50A, di/dt=100A/us	-	63	-	nC
Reverse Recovery Time	t_{rr}		-	45	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DD}=50V, I_D=20A R_{GEN}=10Ω	-	24	-	ns
Turn-on Rise Time	t_r		-	25	-	
Turn-off Delay Time	$t_{D(off)}$		-	54	-	
Turn-off fall Time	t_f		-	34	-	

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

Figure.1 Output Characteristics T_j=25℃

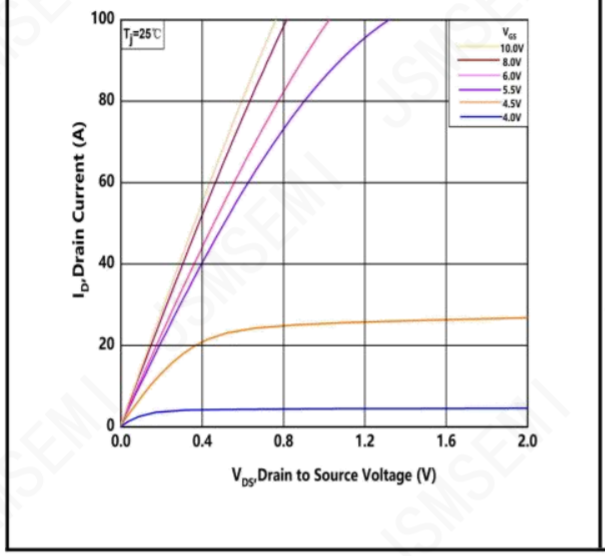


Figure.2 Transfer Characteristic for Various Junction Temperatures

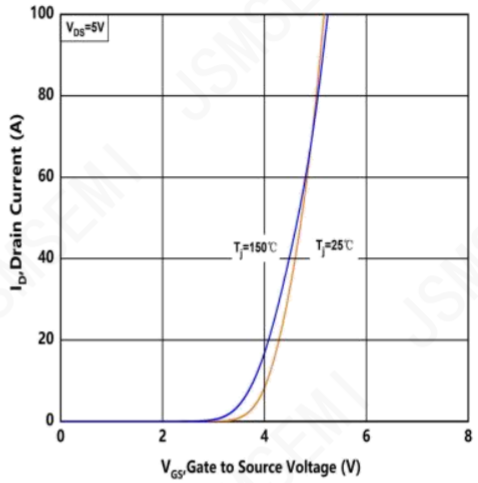


Figure.3 On-Resistance vs Drain Current For Various Gate Voltage

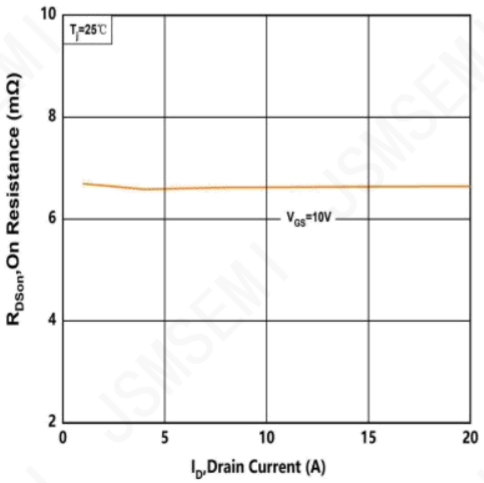


Figure.4 Typical On-Resistance vs Junction Temperature

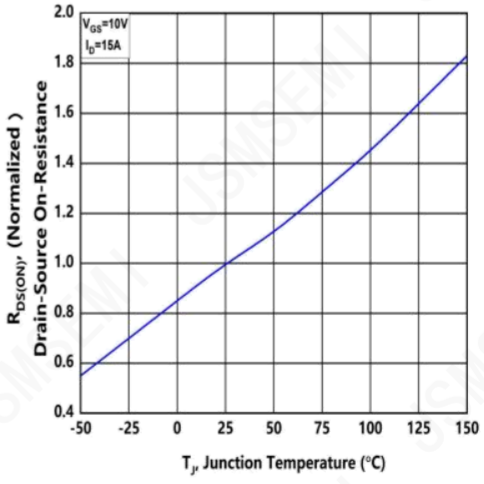


Figure.5 Typical Threshold Voltage vs Junction Temperature

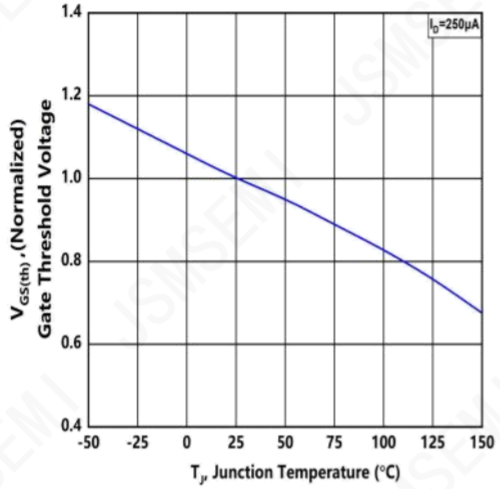


Figure.6 Typical Breakdown Voltage vs Junction Temperature

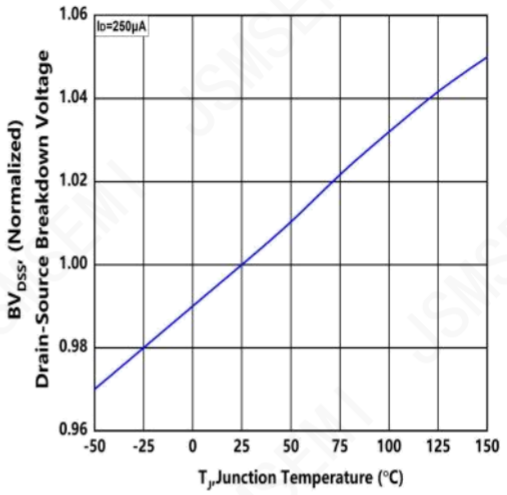


Figure.7 Typical Capacitance vs Drain to Source Voltage

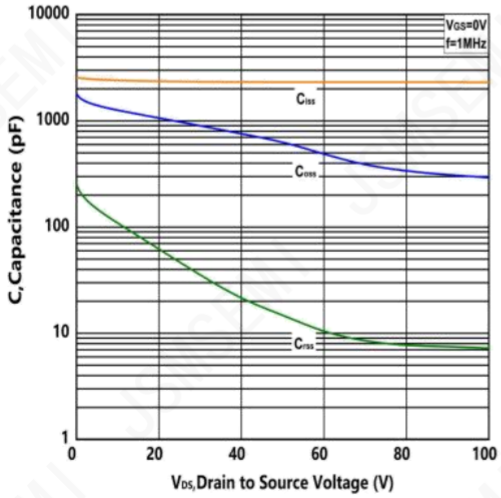


Figure.8 Typical Gate Charge vs Gate to Source Voltage

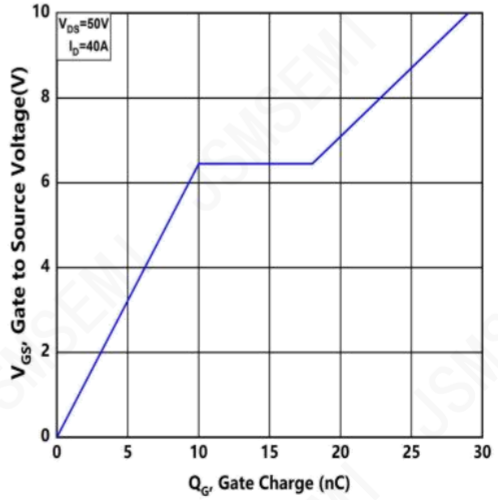


Figure.9 Typical Body Diode Characteristics

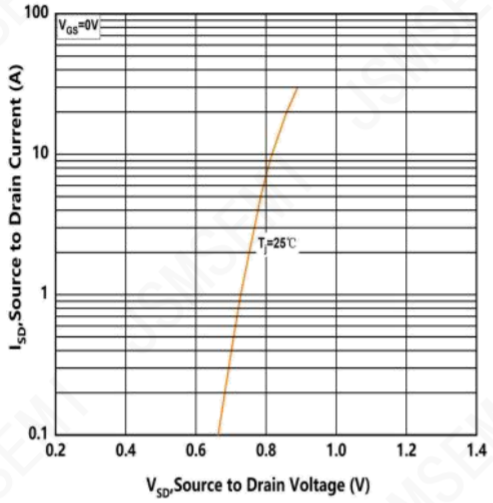


Figure.10 Maximum power Dissipation Derating vs Case Temperature

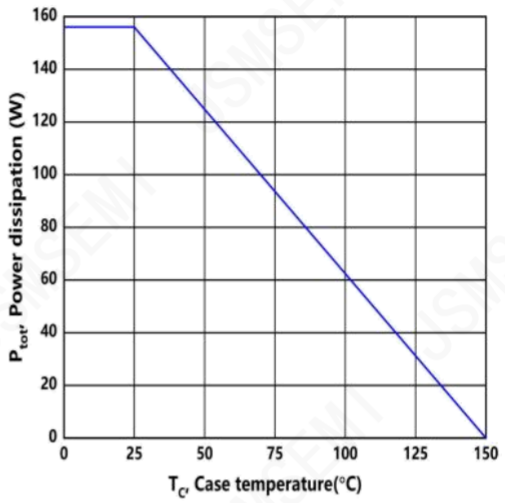


Figure.11 Continuous Drain Current Derating vs Case Temperature

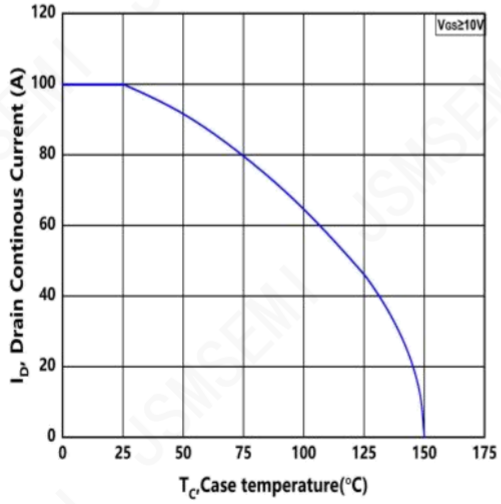
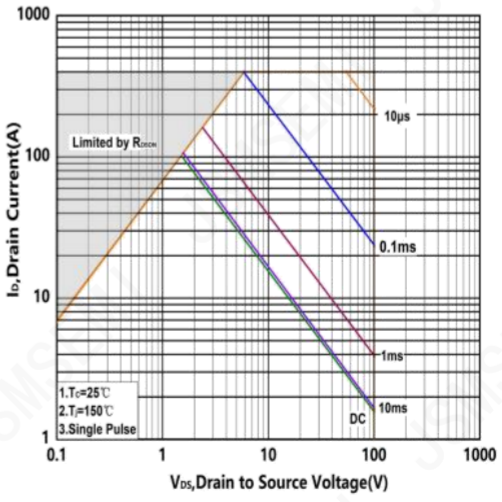
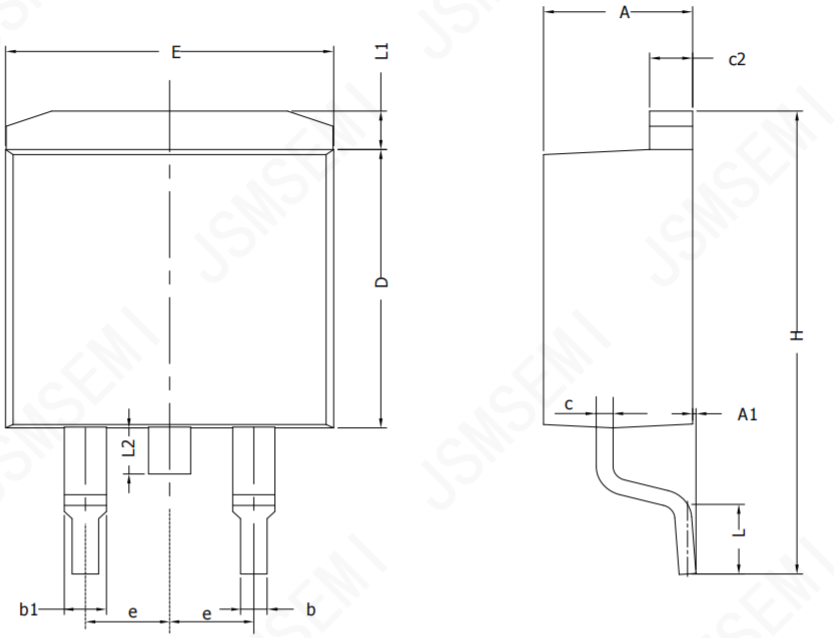


Figure.12 Safe Operating Area



Package Information

TO-263-2



SYMBOL	MIN	NOM	MAX
A	4.30	4.57	4.72
A1	0	0.10	0.25
b	0.71	0.81	0.91
c	0.30	---	0.60
c2	1.17	1.27	1.37
D	8.50	---	9.35
E	9.80	---	10.45
e		2.54BSC	
H	14.70	---	15.75
L	2.00	2.30	2.74
L1	1.12	1.27	1.42
L2	---	---	1.75

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2021

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