AJ100SN065MTL

N-Channel Super Junction Power MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
650V	100mΩ@10V	30A

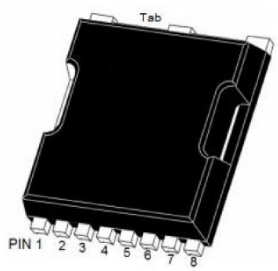
Feature

- Fast Switching
- Low Gate Charge and Rdson

Application

- PWM Application
- Hard switched and high frequency circuits
- Power Management

Package



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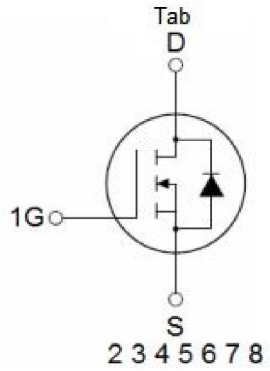
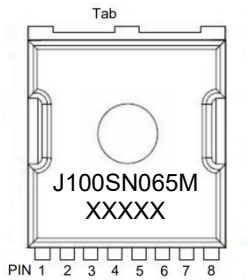
Circuit diagram



Marking



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Absolute maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current (T_C=25℃)	I_D	30	A
Continuous Drain Current (T_C=100℃)	I_D(100℃)	20	A
Pulsed Drain Current	I_{DM}	120	A
Power Dissipation (T_C=25℃)	P_D	193	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	0.65	℃/W
Single pulse avalanche Energy[1)]	E_{AS}	362	mJ
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

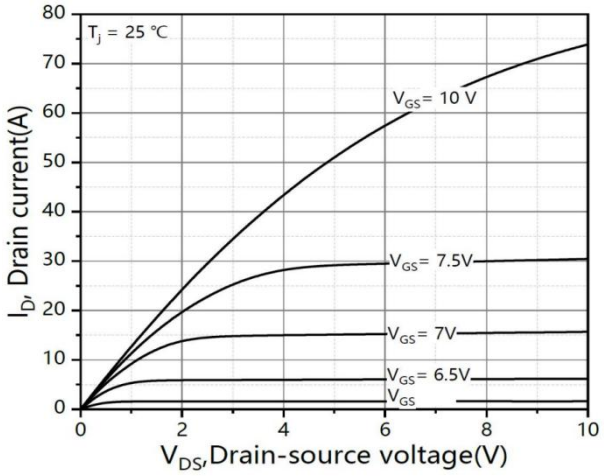
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} =0V, I_D =250μA	650			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =520V,V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±30V, V_{DS} =0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.5	3.5	4.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =30A		85	100	mΩ
Dynamic characteristics[2)]						
Input Capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V, f =100kHz		2618		pF
Output Capacitance	C_{oss}			136		
Reverse Transfer Capacitance	C_{rss}			4.1		
Total Gate Charge	Q_g	V_{DS} =400V,V_{GS} =10V, I_D =40A		54		nC
Gate-Source Charge	Q_{gs}			19		
Gate-Drain Charge	Q_{gd}			21		
Turn-on delay time	$t_{d(on)}$	V_{DS} =400V,V_{GS} =10V, I_D =40A,R_G =2Ω		35		nS
Turn-on rise time	t_r			152		
Turn-off delay time	$t_{d(off)}$			63		
Turn-off fall time	t_f			48		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	V_{GS} =0V,I_S =1A,T_J =25℃			1.2	V
Diode Forward Current	I_S				30	A
Reverse Recovery Time	t_{rr}	I_S =40A ,di/dt =100A/μs, T_J =25℃		148		nS
Reverse Recovery Charge	Q_{rr}			1.2		μC

Notes:

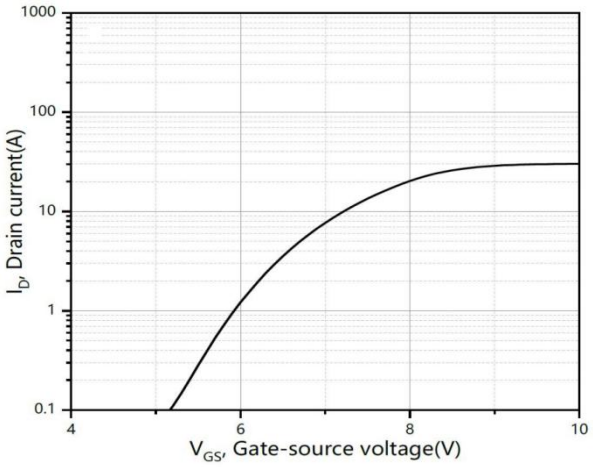
1) The test condition is V_{DD}=50V,VGS=10V,L=0.5mH,R_G=25Ω

2) Guaranteed by design, not subject to production.

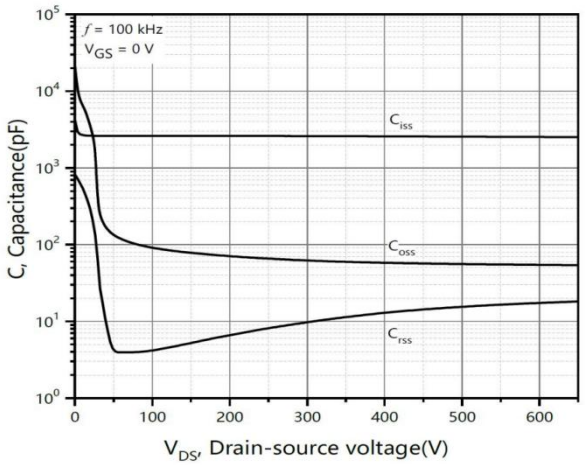
Typical Characteristics



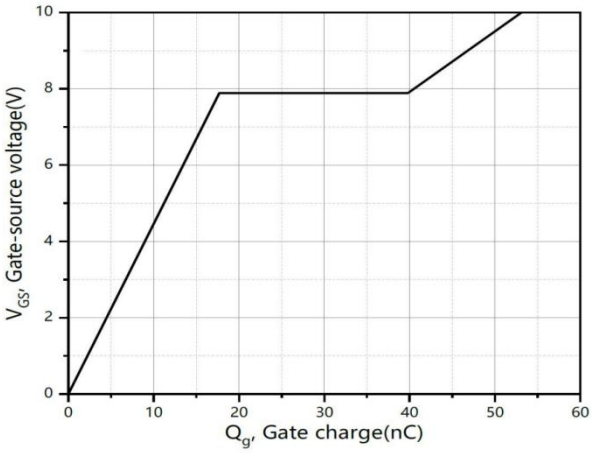
Typ. output characteristics T_j=25°C



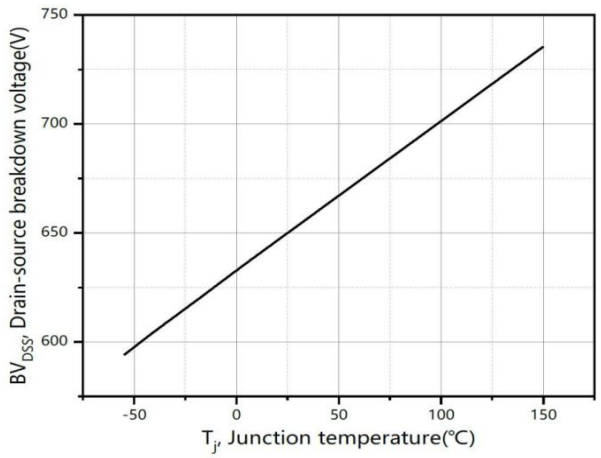
Typ. transfer characteristics



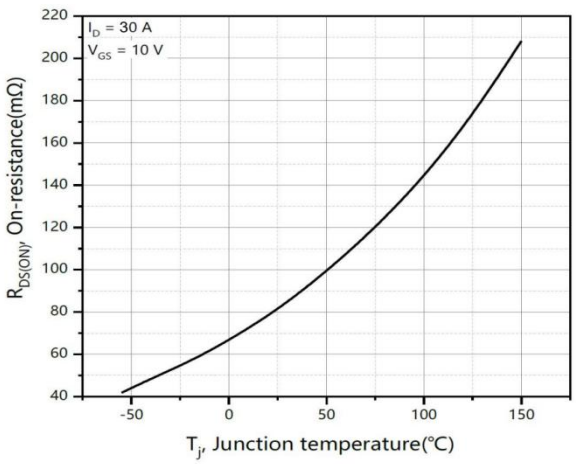
Typ. capacitances



Typ. gate charge

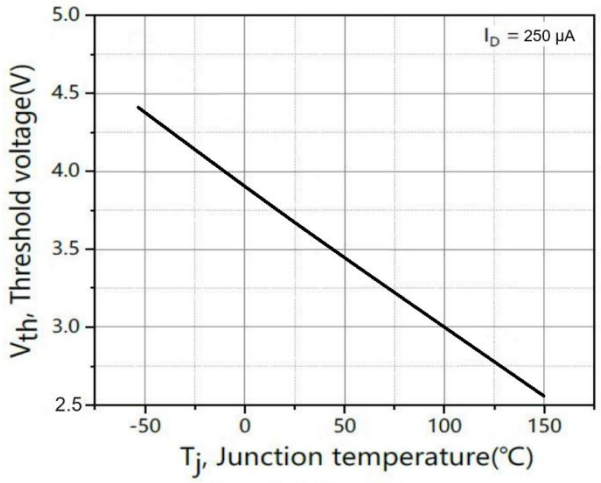


Drain-source breakdown voltage

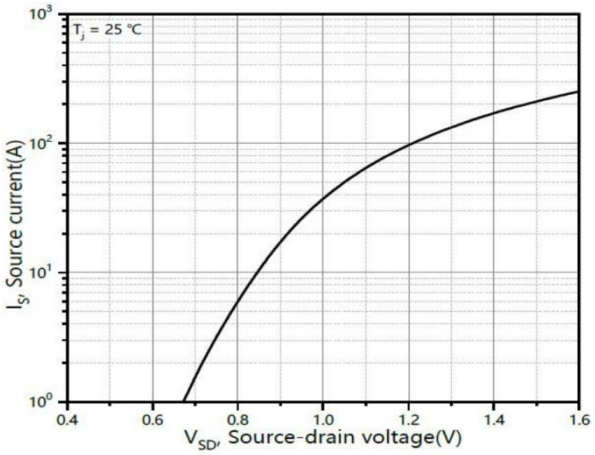


Drain-source on-state resistance

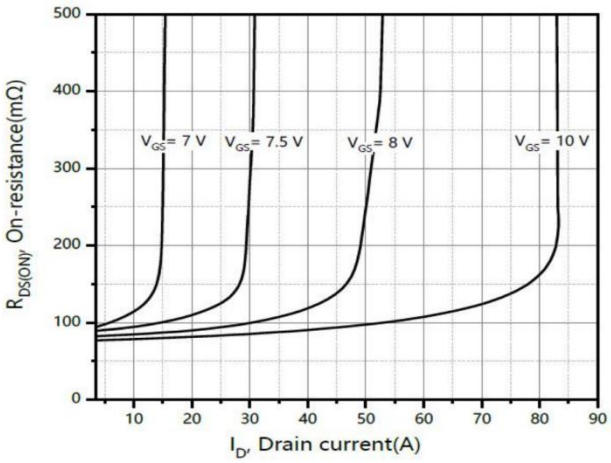
Typical Characteristics



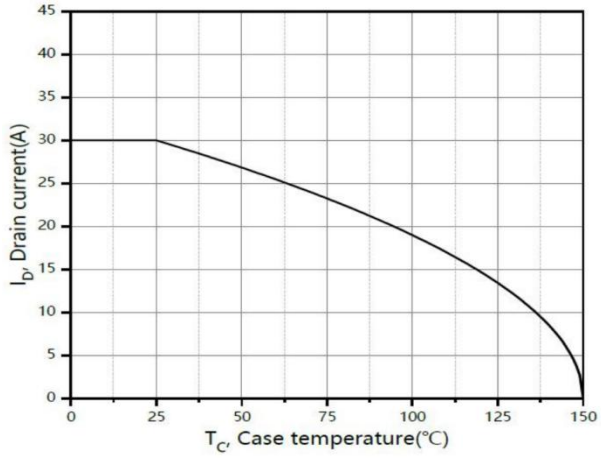
Threshold voltage



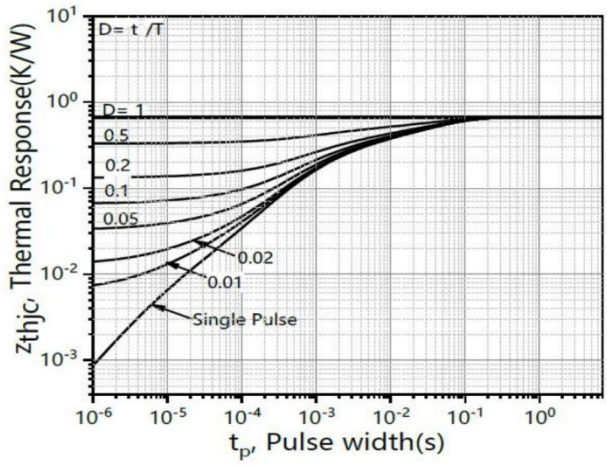
Forward characteristic of body diode



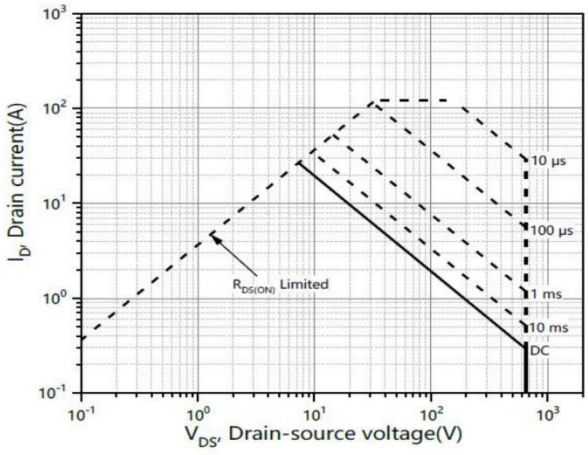
Drain-source on-state resistance



Drain current

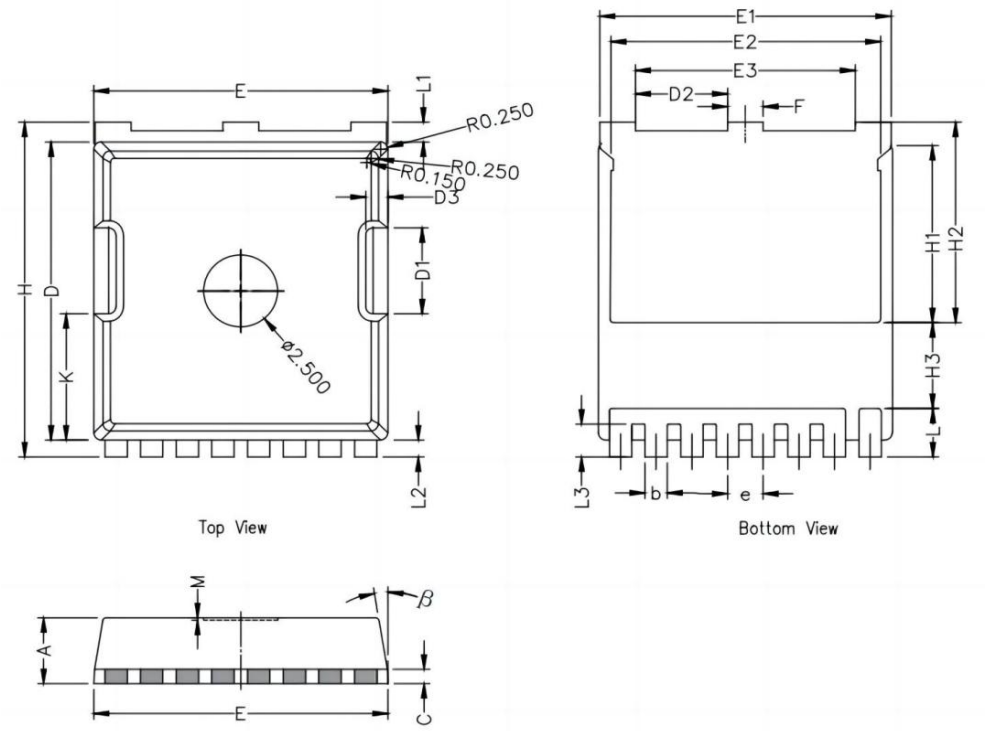


Max. transient thermal impedance



Safe operation area Tc=25℃

TOLL Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
b	0.650	0.850	0.026	0.033
C	0.508 REF.		0.020 REF.	
D	10.250	10.550	0.404	0.415
D1	2.850	3.150	0.112	0.124
E	9.750	10.050	0.384	0.396
E1	9.650	9.950	0.380	0.392
E2	8.950	9.250	0.352	0.364
E3	7.250	7.550	0.285	0.297
e	1.200 BSC.		0.047 BSC.	
F	1.050	1.350	0.041	0.053
H	11.550	11.850	0.455	0.467
H1	6.030	6.330	0.237	0.249
H2	6.850	7.150	0.270	0.281
H3	3.000 BSC.		0.118 BSC.	
L	1.550	1.850	0.061	0.073
L1	0.550	0.850	0.022	0.033
L2	0.450	0.750	0.018	0.030
M	0.080 REF.		0.003 REF.	
β	8°	12°	8°	12°
K	4.250	4.550	0.167	0.179