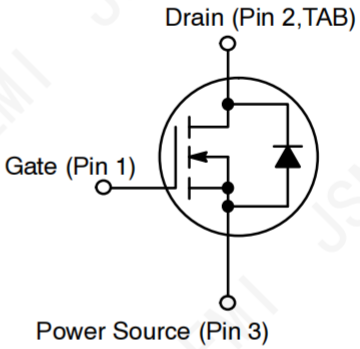
Product Summary

- V_{DS} 30V
- I_D 10A
- $R_{DS(ON)}$(at V_{GS}=10V) ＜14mΩ
- 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)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current (T_C=25℃)	V_{GS}=10V	10	A
	Continuous Drain Current (T_C=70℃)		5.0	
I_{DM}	Pulsed Drain Current		20	A
I_S	Continuous Source Current (Diode Conduction)		1.7	A
P_D	Power Dissipation	T_A=25℃	1.5	W
		T_A=70℃	0.9	
T_J	Operation Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55~+150	℃
$R_{\theta JA}$	Thermal Resistance Junction to Ambient		90	℃/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

Ordering Information

Order number	Package	Marking	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
AO3011A	SOT-23-3L	3011A	-55 to150°C	1	T&R,3000	Rohs

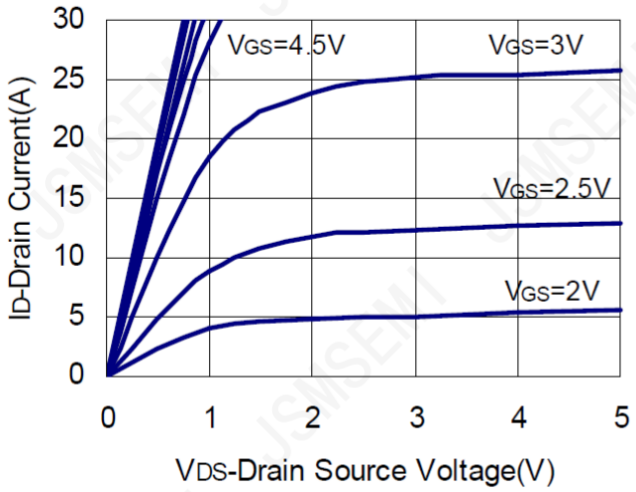
Electrical Characteristics T_a=25℃ unless otherwise specified

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	1.0	1.5	2.2	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0			1	uA
		V_{DS}=30V, V_{GS}=0 T_J=55℃			5	
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=5.8A		11	14	mΩ
		V_{GS}=4.5V, I_D=5.0A		15	23	
		V_{GS}=2.5V, I_D=3.5A		28	38	
Source-Drain Diode						
V_{SD}	Diode Forward Voltage	I_S=1.0A, V_{GS}=0V		0.7	1.0	V
Dynamic Parameters						
Q_g	Total Gate Charge	V_{DS}=20V V_{GS}=4.5V I_D=5.8A		10	19	nC
Q_{gs}	Gate-Source Charge			1.7		
Q_{gd}	Gate-Drain Charge			3.2		
C_{iss}	Input Capacitance	V_{DS}=15V V_{GS}=0V f=1MHz		855		pF
C_{oss}	Output Capacitance			243		
C_{rss}	Reverse Transfer Capacitance			40		
$T_{d(on)}$	Turn-On Time	V_{DS}=15V I_D=4A V_{GEN}=10V R_G=3.3Ω		7	15	nS
T_r				10	20	
$T_{d(off)}$	Turn-Off Time			20	40	
T_f				11	20	

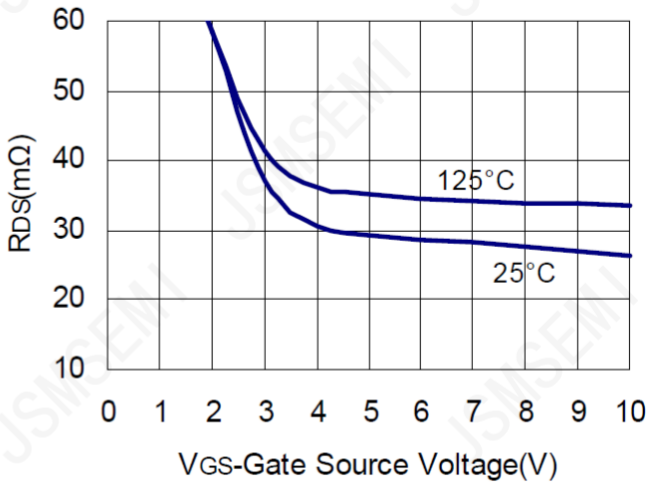
Note: 1. Pulse test: pulse width<=300uS, duty cycle<=2%
2.Static parameters are based on package level with recommended wire bonding

Typical Characteristics(25℃ Unless Note)

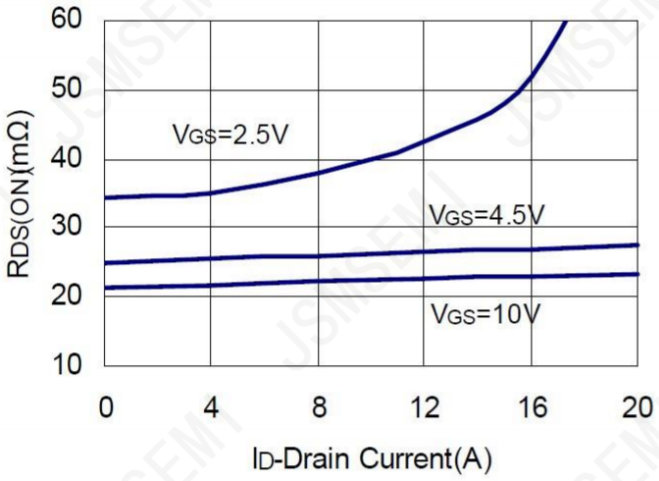
Output Characteristics



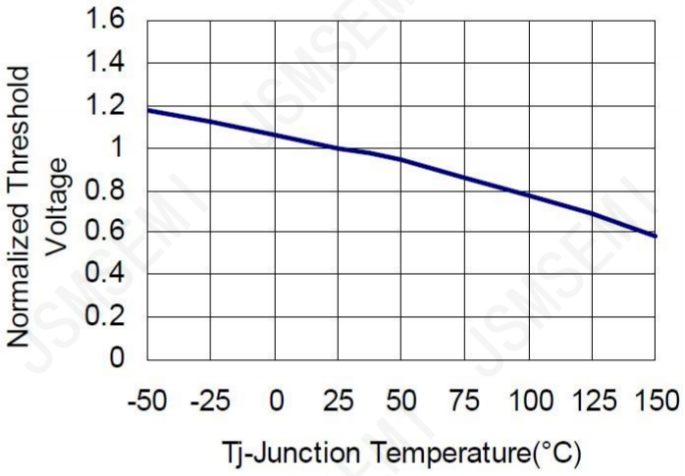
Drain-Source On Resistance



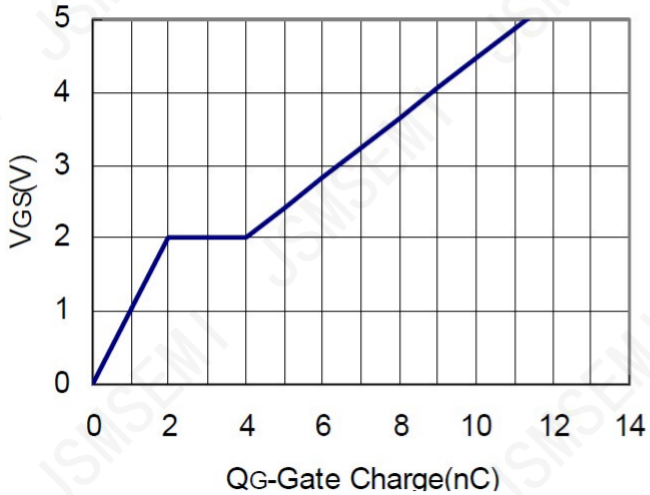
Drain Source On Resistance



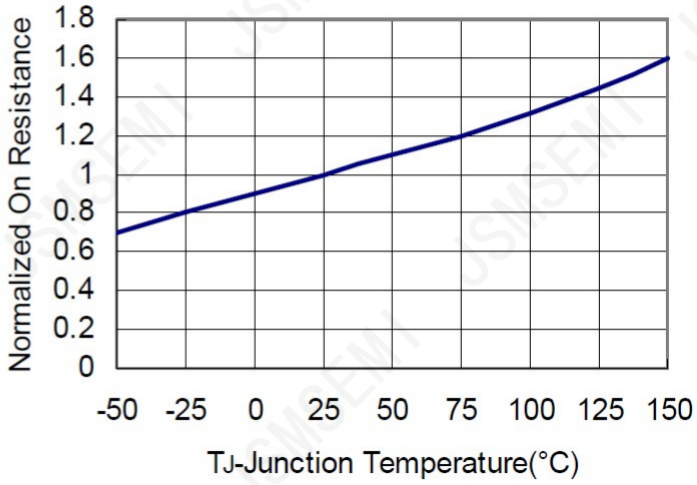
Gate Threshold Voltage



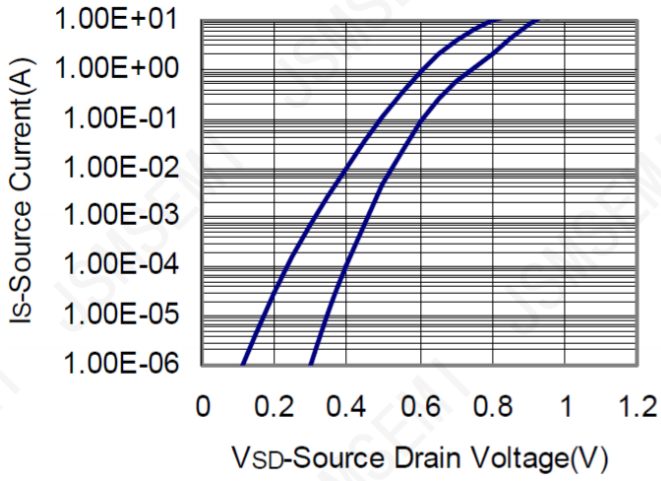
Gate Charge



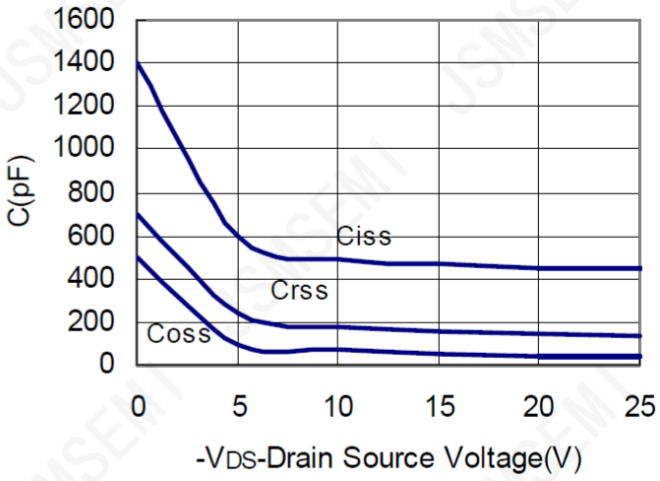
Drain Source On Resistance



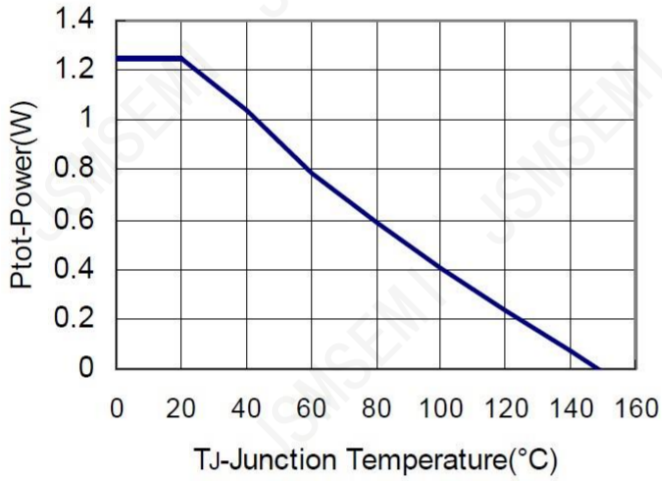
Source Drain Diode Forward



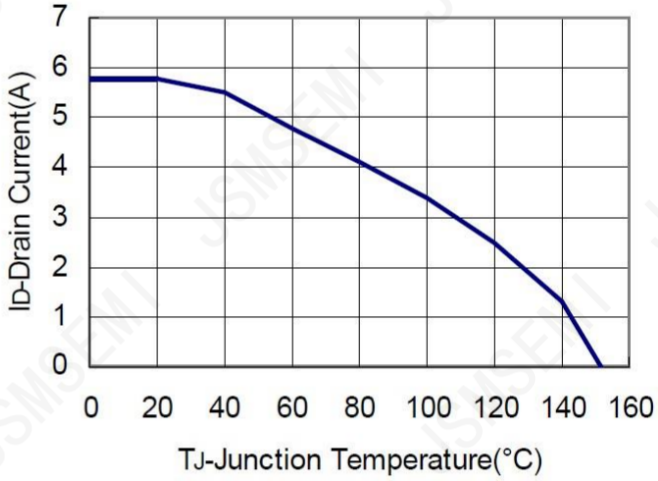
Capacitance



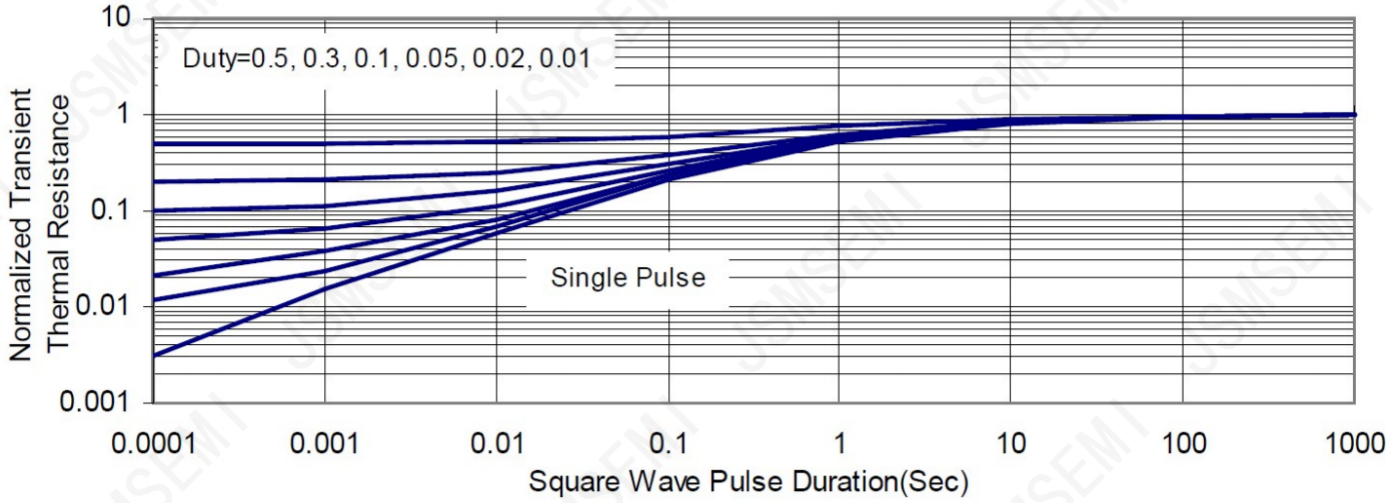
Power Dissipation



Drain Current

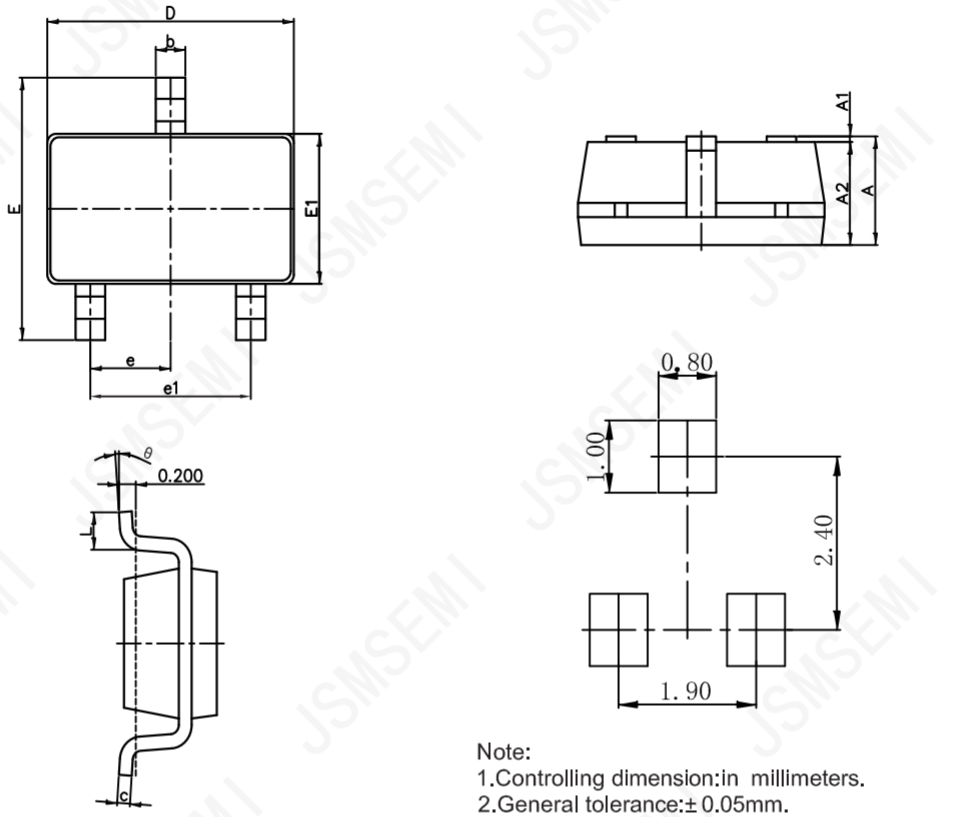


Thermal Transient Impedance



Package Information

SOT-23-3L



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°