Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
110V	2.7mΩ@10V	240A

合肥矽普半导体
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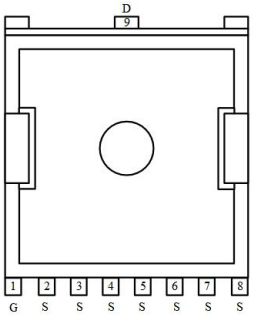
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

Applications

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

Package



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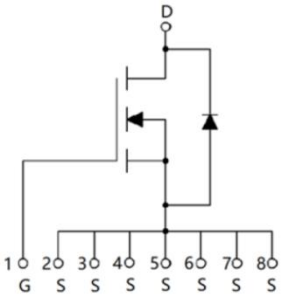
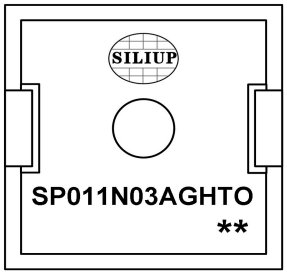
Circuit diagram



Marking



SP011N03AGHTO : Product code
**** **:Week code**

Order Information

Device	Package	Unit/Tape
SP011N03AGHTO	TOLL	2000

Absolute maximum ratings (Ta=25℃,unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	110	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current1 (Tc=25℃)	I_D	240	A
Continuous Drain Current1 (Tc=100℃)	I_D	160	A
Pulsed Drain Current	I_{DM}	960	A
Single Pulse Avalanche Energy[1]	E_{AS}	744	mJ
Power Dissipation (Tc=25℃)	P_D	260	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.48	℃/W
Storage Temperature Range	T_{STG}	-55 to 150	℃
Operating Junction Temperature Range	T_J	-55 to 150	℃

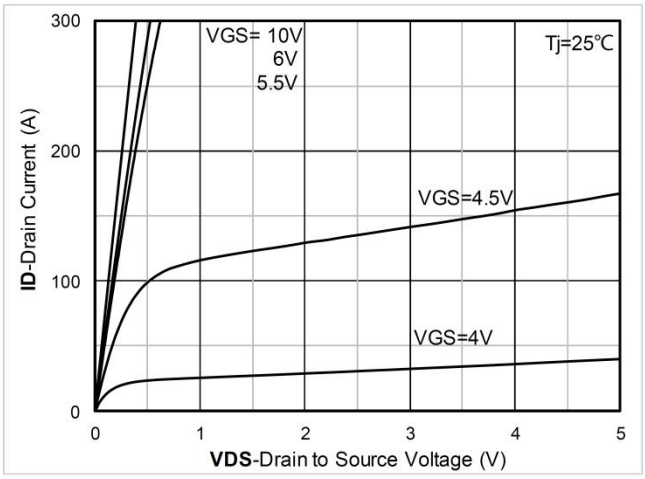
Electrical characteristics (Ta=25℃, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	ID = 250μA, VGS = 0V	110	120	-	V
Drain Cut-Off Current	I_{DSS}	VDS = 80V, VGS = 0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	VGS = ±20V, VDS = 0V	-	-	±0.1	
Gate Threshold Voltage	$V_{GS(th)}$	VDS = VGS, ID = 250μA	2.0	3.0	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	VGS = 10V, ID = 30A	-	2.7	3.5	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	VDS =50V, VGS = 0V, f = 1.0MHz	-	7162	-	pF
Output Capacitance	C_{oss}		-	1067	-	
Reverse Transfer Capacitance	C_{rss}		-	35	-	
Switching Characteristics						
Total Gate Charge	Q_g	VDS=50V , VGS=10V , ID=100A	-	105	-	nC
Gate-Source Charge	Q_{gs}		-	47	-	
Gate-Drain Charge	Q_{gd}		-	23	-	
Turn-On Delay Time	$t_{d(on)}$	VGS = 10V, VDS =50V, ID=100A RG = 6Ω	-	26	-	nS
Rise Time	t_r		-	75	-	
Turn-Off Delay Time	$t_{d(off)}$		-	87	-	
Fall Time	t_f		-	30	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	I_S = 1A, VGS = 0V	-	-	1.2	V
Maximum Body-Diode Continuous Current	I_S		-	-	240	A
Body Diode Reverse Recovery Time	T_{rr}	I_S=100A, di/dt=100A/us, TJ=25℃	-	72	-	nS
Body Diode Reverse Recovery Charge	Q_{rr}		-	180	-	nC

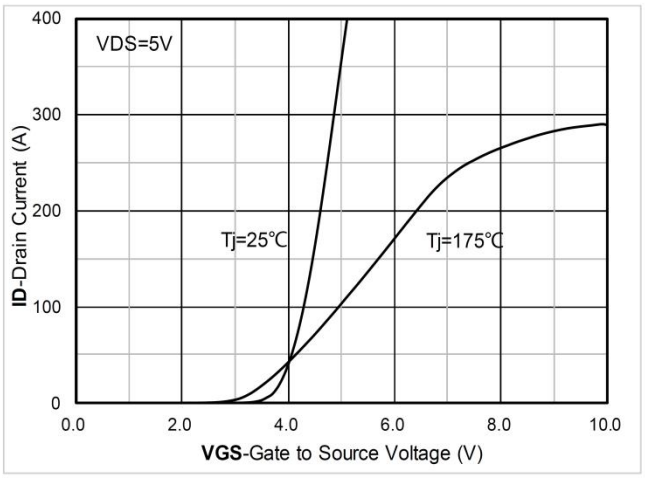
Note :

1. The test condition is VDD=50V,VGS=10V,L=0.5mH,RG=25Ω;

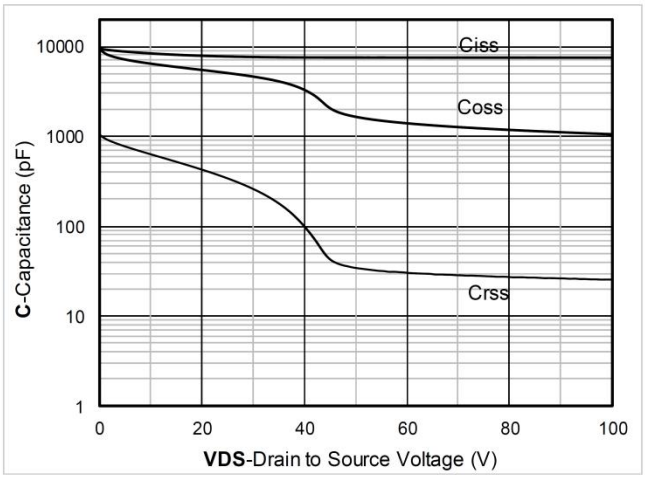
Typical Characteristics



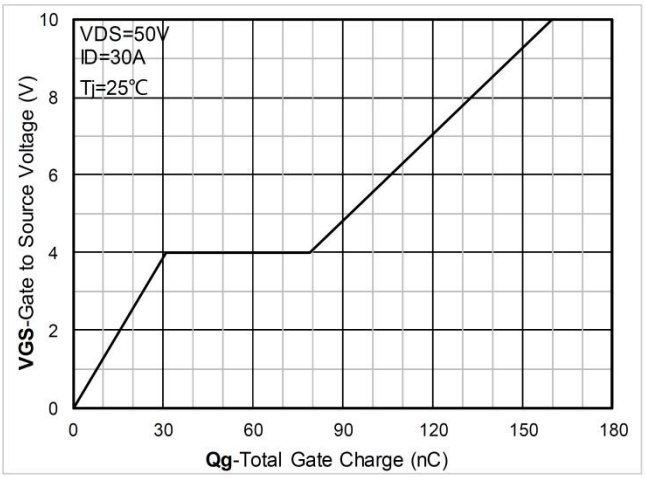
Output Characteristics



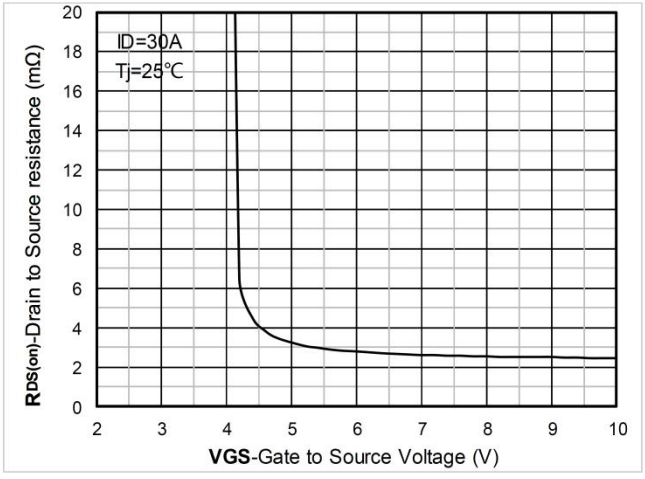
Transfer Characteristics



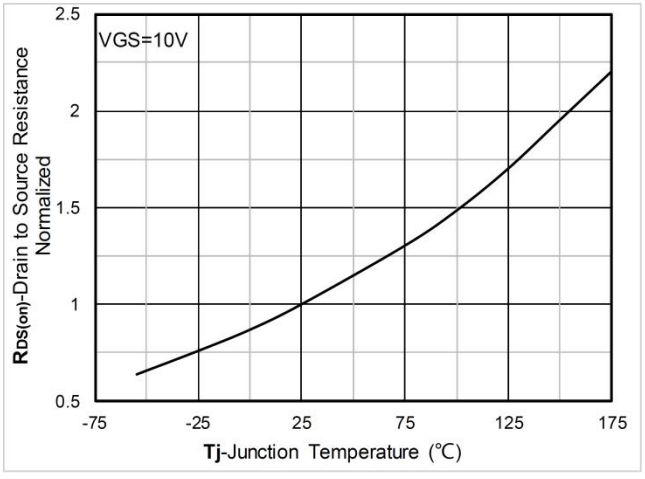
Capacitance Characteristics



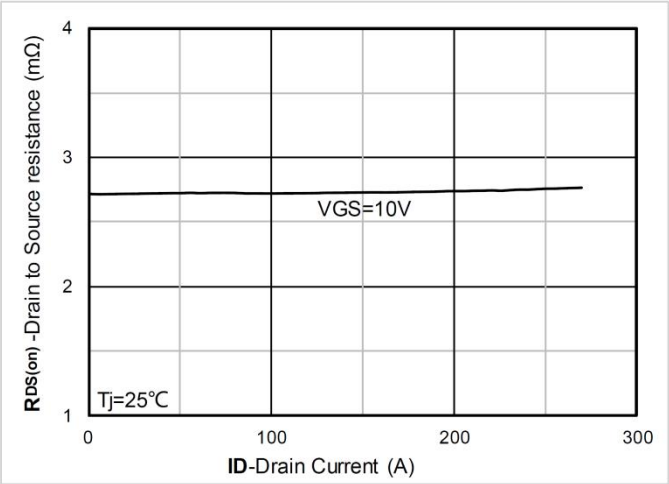
Gate Charge



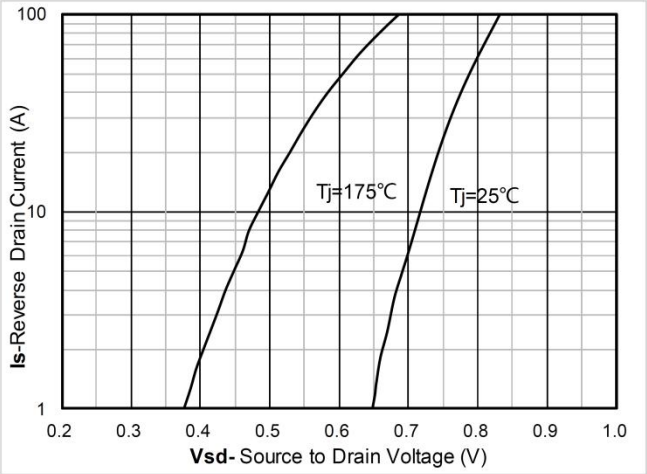
On-Resistance vs Gate to Source Voltage



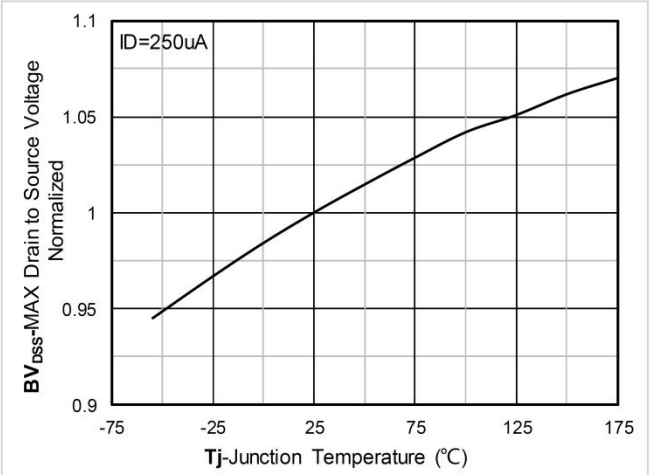
Normalized On-Resistance



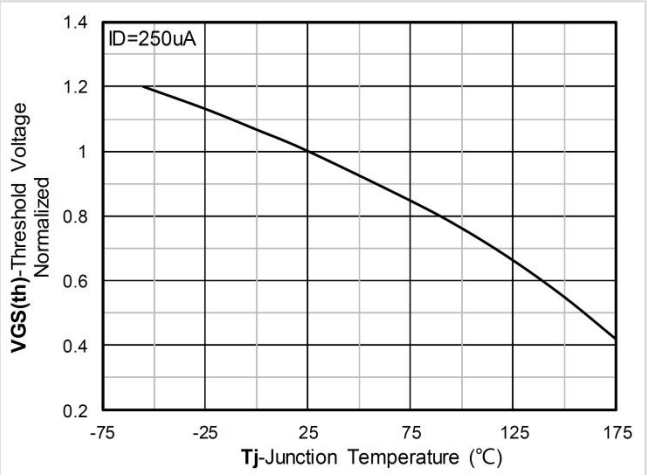
RDS(on) VS Drain Current



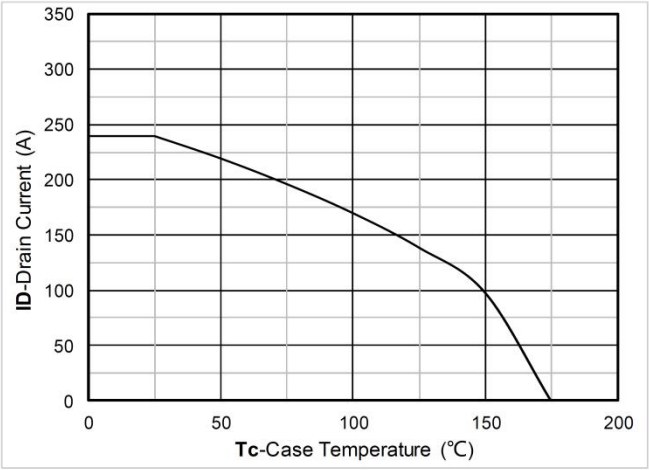
Forward characteristics of reverse diode



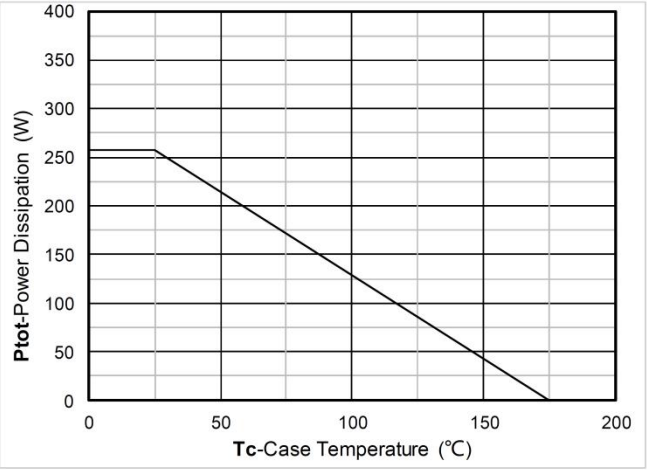
Normalized breakdown voltage



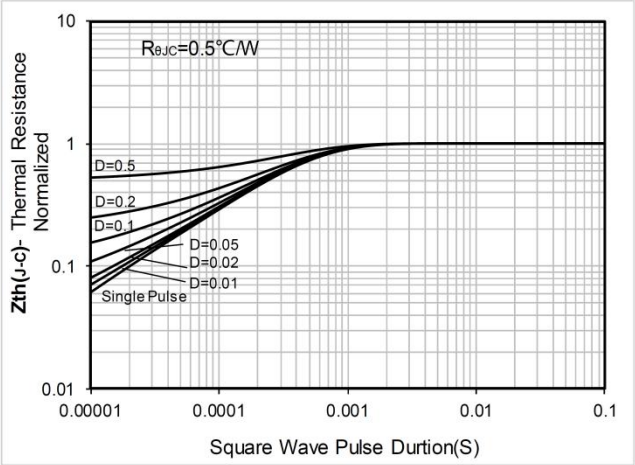
Normalized Threshold voltage



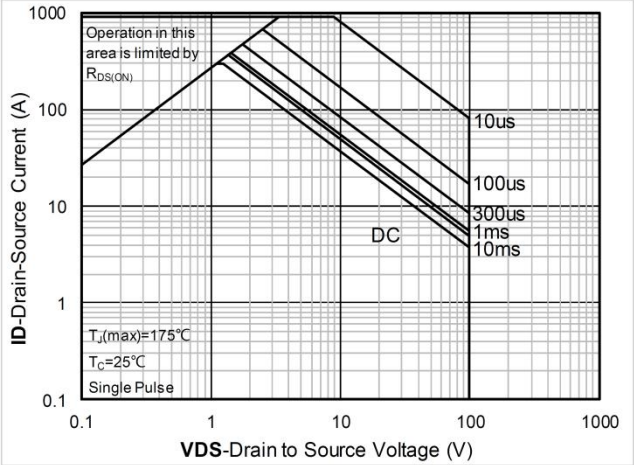
Current dissipation



Power dissipation

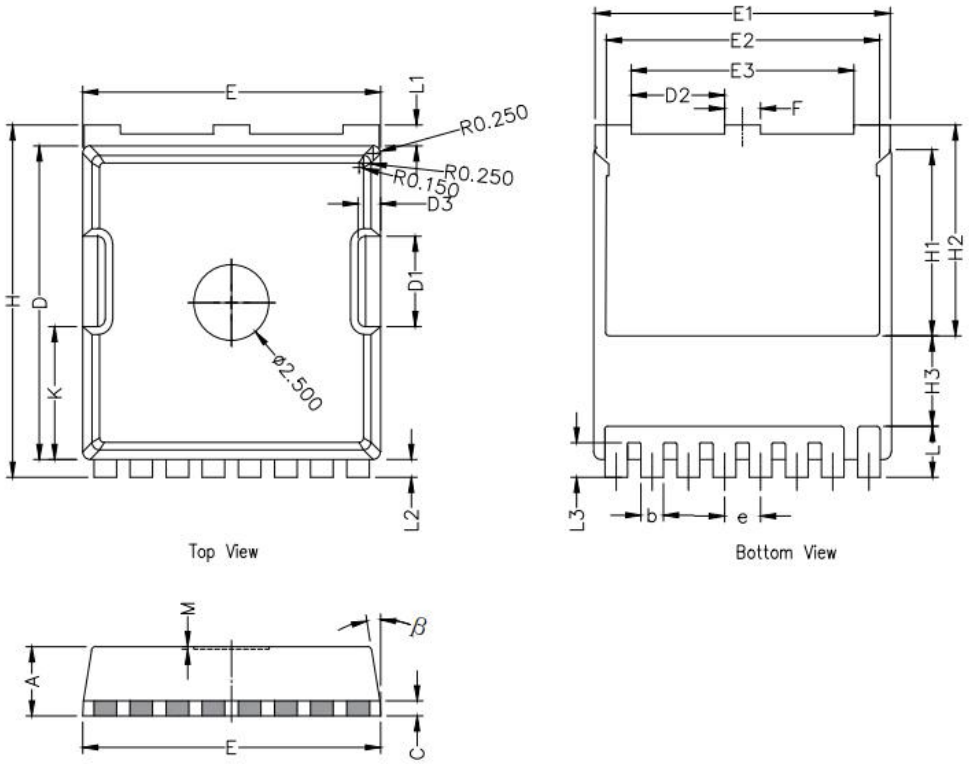


Maximum Transient Thermal Impedance



Safe Operation Area

TOLL Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	2.20	2.30	2.40
b	0.65	0.75	0.85
C		0.508 REF	
D	10.25	10.40	10.55
D1	2.85	3.00	3.15
E	9.75	9.90	10.05
E1	9.65	9.80	9.95
E2	8.95	9.10	9.25
E3	7.25	7.40	7.55
e		1.20 BSC	
F	1.05	1.20	1.35
H	11.55	11.70	11.85
H1	6.03	6.18	6.33
H2	6.85	7.00	7.15
H3		3.00 BSC	
L	1.55	1.70	1.85
L1	0.55	0.7	0.85
L2	0.45	0.6	0.75
M		0.08 REF.	
β	8°	10°	12°
K	4.25	4.40	4.55