Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
150V	5.7mΩ@10V	185A

合肥矽普半导体
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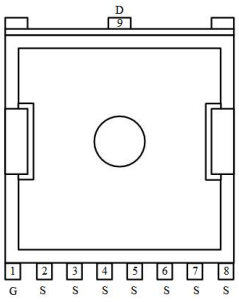
Feature

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

Applications

- Power switching application
- DC-DC Converter
- Power Management

Package



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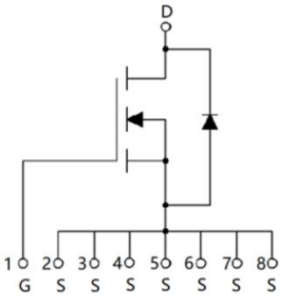
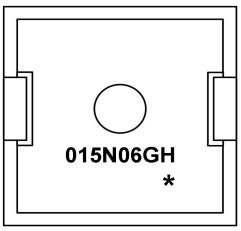
Circuit diagram



Marking



015N06GH : Product code
*** : Month code**

Order Information

Device	Package	Unit/Tape
SP015N06GHTO	TOLL	2000

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current1 (Tc=25℃)	I_D	185	A
Continuous Drain Current1 (Tc=100℃)	I_D	125	A
Pulsed Drain Current	I_{DM}	740	A
Single Pulse Avalanche Energy[1]	E_{AS}	812	mJ
Power Dissipation (Tc=25℃)	P_D	350	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.36	℃/W
Storage Temperature Range	T_{STG}	-55 to 150	℃
Operating Junction Temperature Range	T_J	-55 to 150	℃

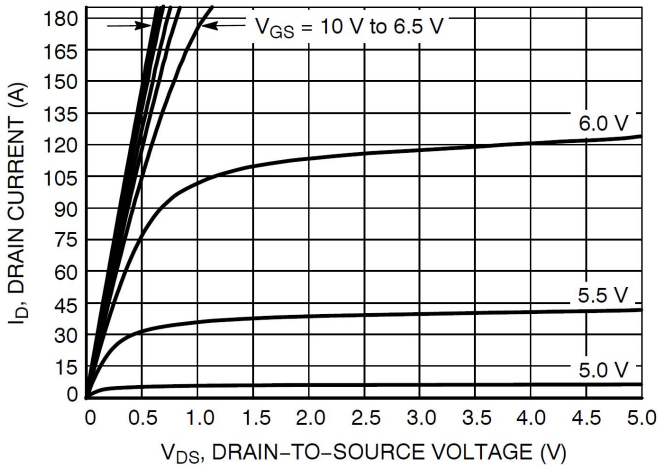
Electrical characteristics (Ta=25℃, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	ID = 250μA, VGS = 0V	150	170	-	V
Drain Cut-Off Current	I_{DSS}	VDS = 120V, 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 = 20A	-	5.7	6.5	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	VDS = 75V, VGS = 0V, f = 1.0MHz	-	5240	-	pF
Output Capacitance	C_{oss}		-	430	-	
Reverse Transfer Capacitance	C_{rss}		-	14	-	
Total Gate Charge	Q_g	VDS=75V , VGS=10V , ID=104A	-	70	-	nC
Gate-Source Charge	Q_{gs}		-	31	-	
Gate-Drain Charge	Q_{gd}		-	20	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	VGS = 10V, VDS = 50V, ID = 104A RG = 6Ω	-	24	-	nS
Rise Time	t_r		-	35	-	
Turn-Off Delay Time	$t_{d(off)}$		-	46	-	
Fall Time	t_f		-	15	-	
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		-	-	185	A
Body Diode Reverse Recovery Time	Trr	I_S=50A, di/dt=100A/us, TJ=25℃		98		nS
Body Diode Reverse Recovery Charge	Qrr			217		nC

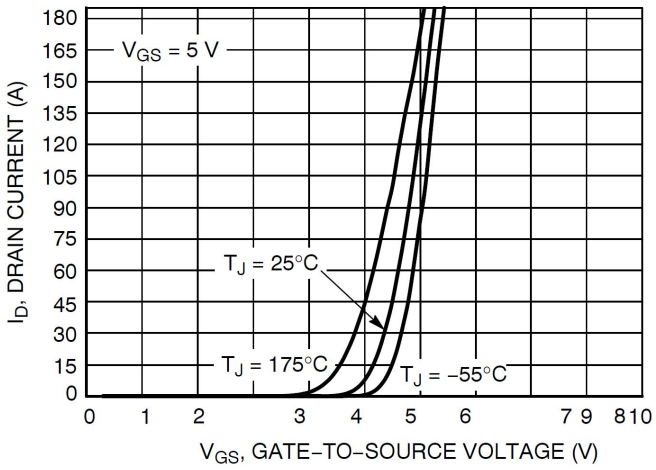
Note :

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

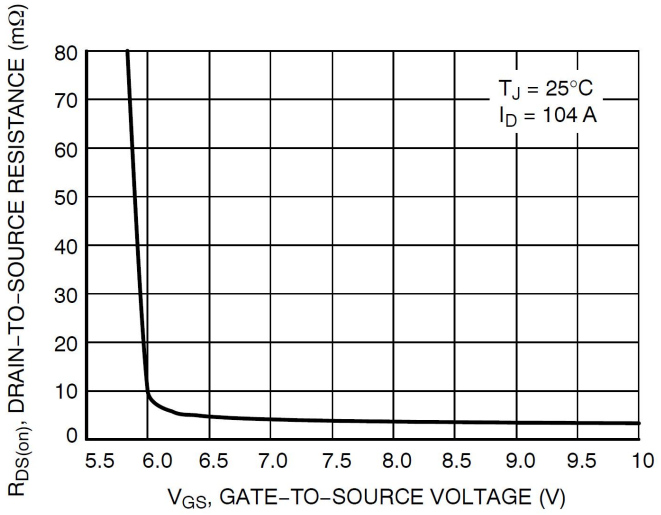
Typical Characteristics



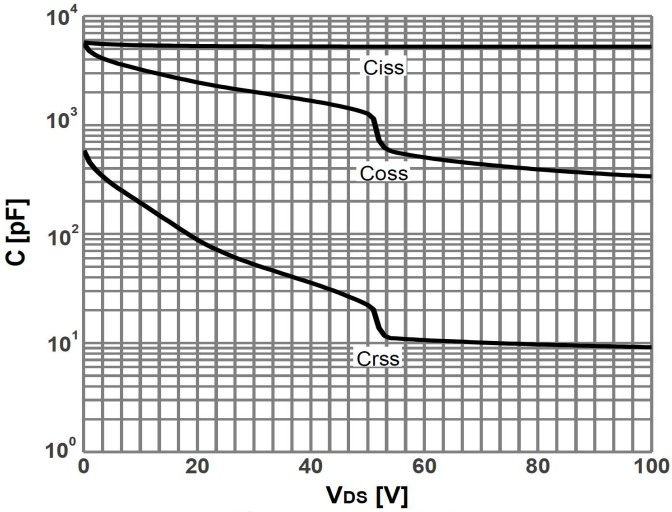
On−Region Characteristics



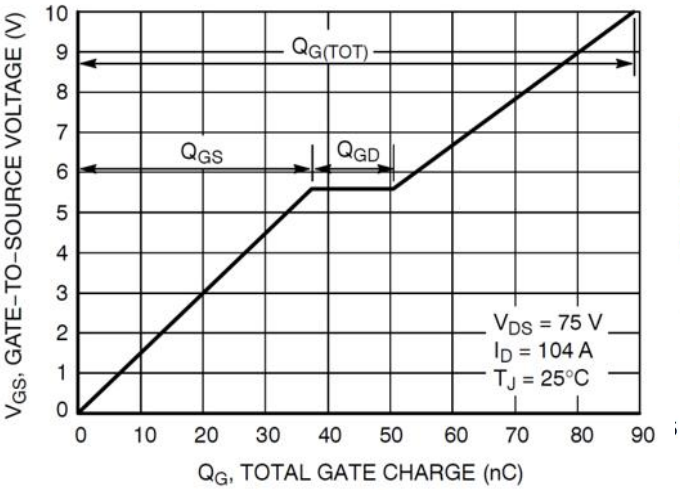
Transfer Characteristics



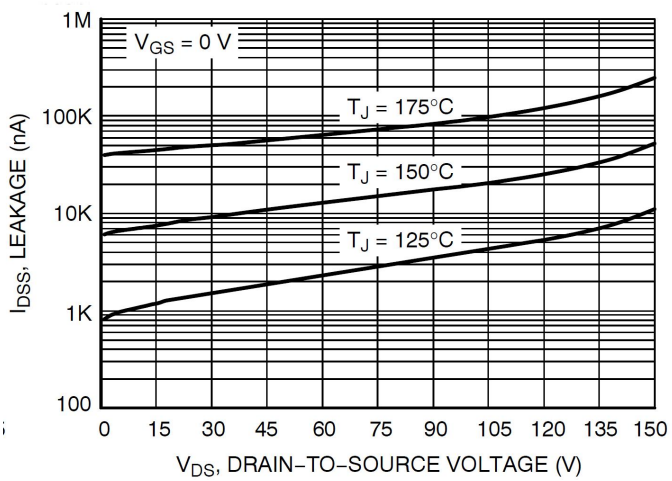
On−Resistance vs. Gate−to−Source Voltage



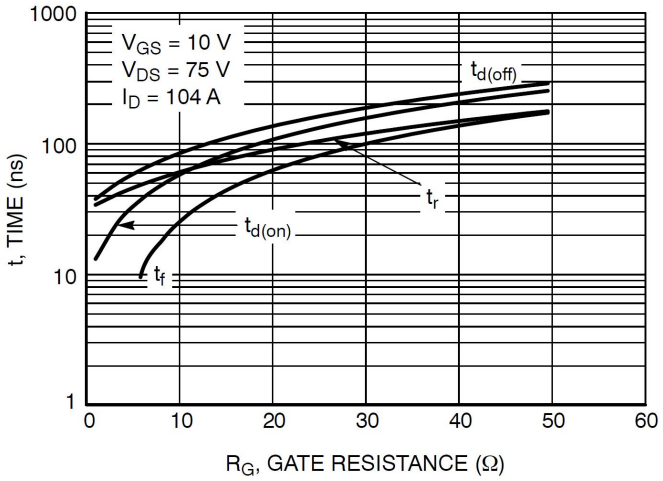
Capacitance Variation



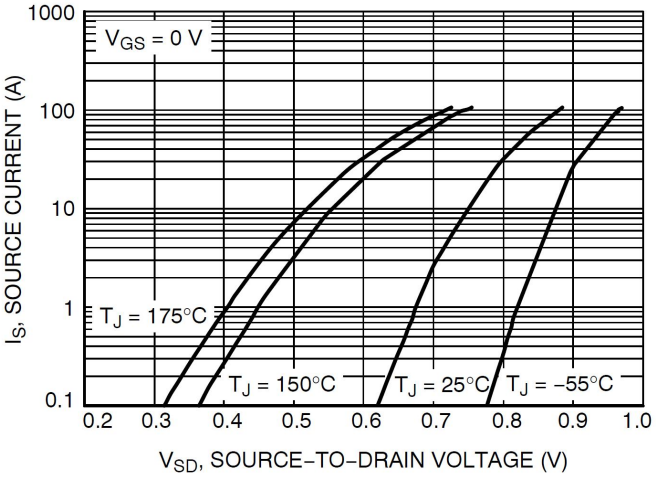
Gate−to−Source Voltage vs. Total Charge



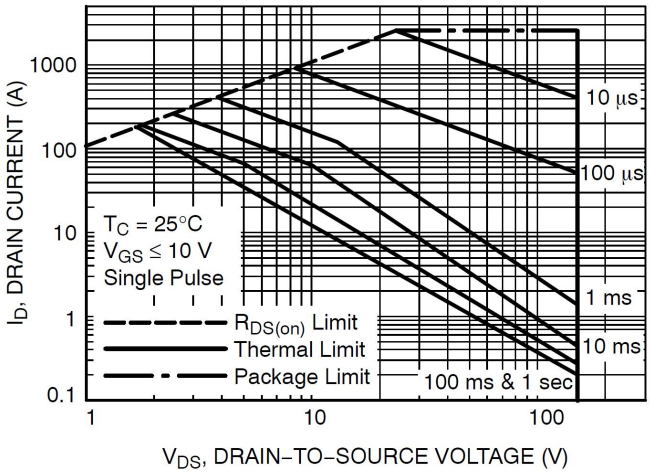
Drain−to−Source Leakage Current vs. Voltage



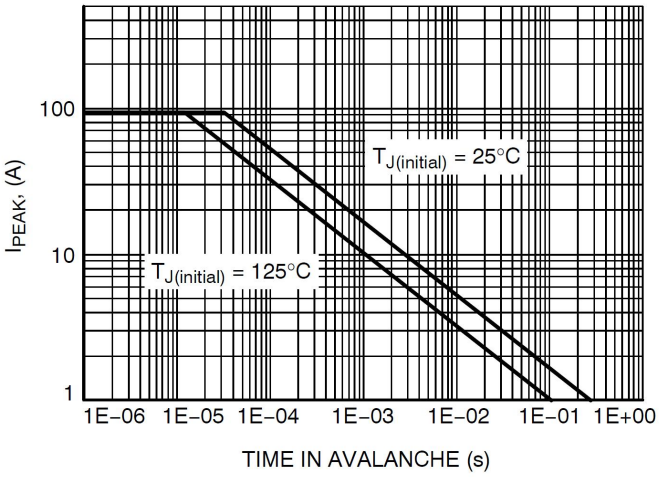
Resistive Switching Time Variation vs. Gate Resistance



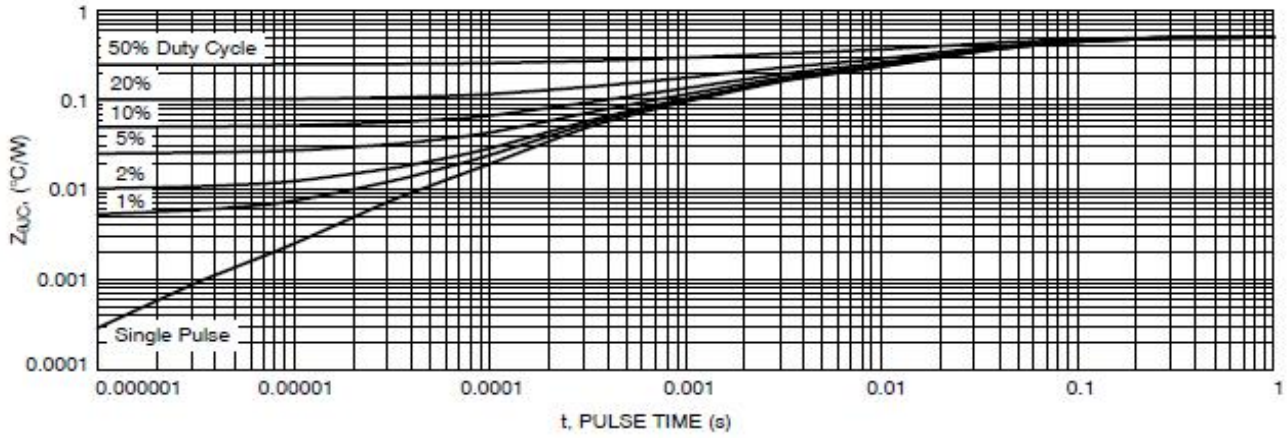
Diode Forward Voltage vs. Current



Maximum Rated Forward Biased Safe Operating Area

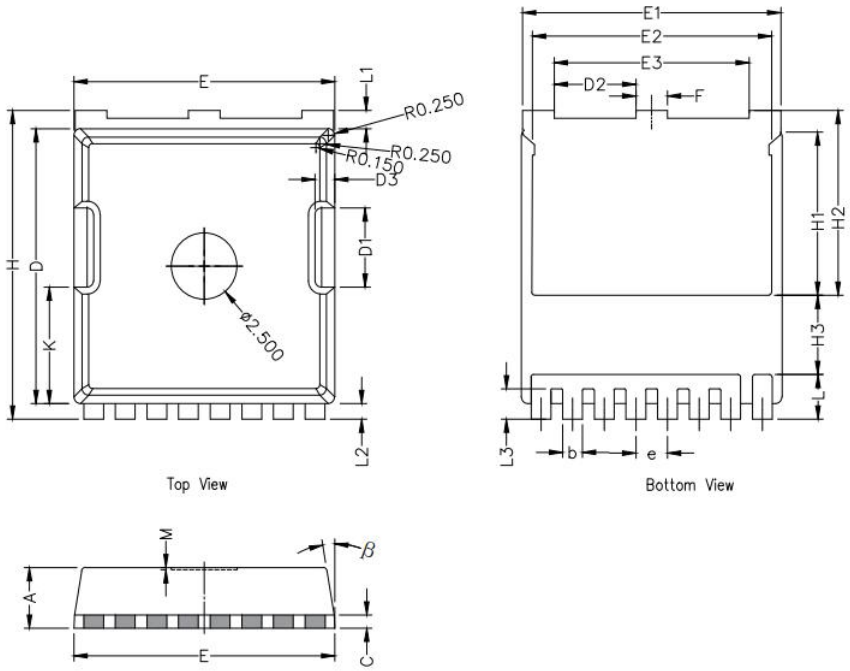


Maximum Drain Current vs. Time in Avalanche



Thermal Response

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