

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
150V	$7.5m\Omega@10V$	130A



**合肥矽普半导体**

*Siliup Semiconductor Technology Co., Ltd*

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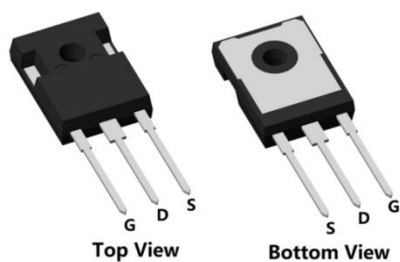
## Feature

- Fast Switching
- Low Gate Charge and  $R_{DS(on)}$
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

## Applications

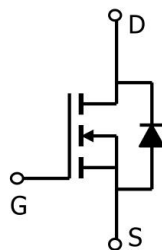
- Power switching application
- DC-DC Converter
- Power Management

## Package

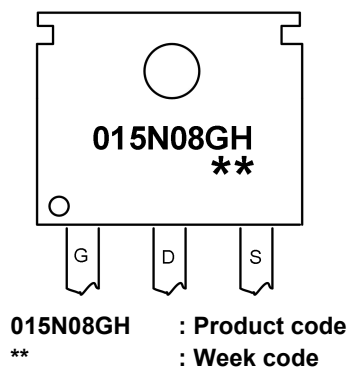


TO-247(1:G 2:D 3:S)

## Circuit diagram



## Marking



## Order Information

Device	Package	Unit/Tube
SP015N08GHTF	TO-247	30

**Absolute maximum ratings (Ta=25°C, unless otherwise noted)**

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	150	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current (Tc=25°C)	$I_D$	130	A
Continuous Drain Current (Tc=100°C)	$I_D$	90	A
Pulsed Drain Current	$I_{DM}$	520	A
Single Pulse Avalanche Energy <sup>1</sup>	$E_{AS}$	625	mJ
Power Dissipation (Tc=25°C)	$P_D$	202	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.62	°C/W
Storage Temperature Range	$T_{STG}$	-55 to 150	°C
Operating Junction Temperature Range	$T_J$	-55 to 150	°C

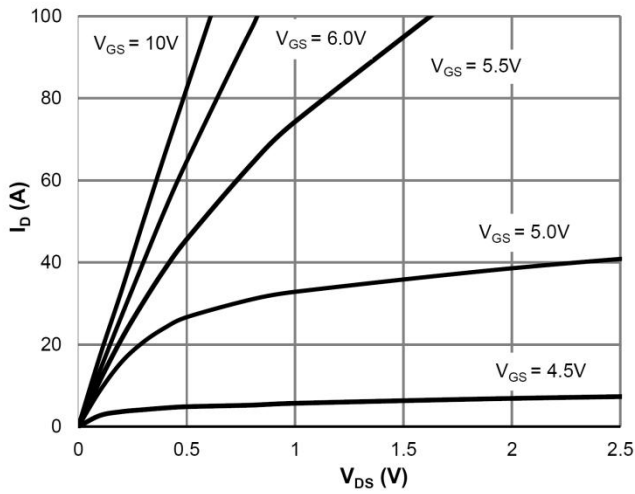
**Electrical characteristics (Ta=25°C, unless otherwise noted)**

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$ID = 250\mu A, VGS = 0V$	150	-	-	V
Drain Cut-Off Current	$IDSS$	$VDS = 120V, VGS = 0V$	-	-	1	$\mu A$
Gate Leakage Current	$IGSS$	$VGS = \pm 20V, VDS = 0V$	-	-	$\pm 0.1$	
Gate Threshold Voltage	$VGS(th)$	$VDS = VGS, ID = 250\mu A$	2.0	3.0	4.0	V
Drain-Source ON Resistance	$RDS(ON)$	$VGS = 10V, ID = 20A$	-	7.5	9.5	m $\Omega$
Dynamic Characteristics						
Input Capacitance	$Ciss$	$VDS = 75V, VGS = 0V, f = 1.0MHz$	-	3750	-	pF
Output Capacitance	$Coss$		-	290	-	
Reverse Transfer Capacitance	$Crss$		-	18	-	
Total Gate Charge	$Qg$	$VDS=75V, VGS=10V, ID=50A$	-	42	-	nC
Gate-Source Charge	$Qgs$		-	13.8	-	
Gate-Drain Charge	$Qgd$		-	11.2	-	
Switching Characteristics						
Turn-On Delay Time	$td(on)$	$VGS = 10V, VDS = 50V, ID = 50A$ $RG = 6\Omega$	-	15.6	-	nS
Rise Time	$tr$		-	32	-	
Turn-Off Delay Time	$td(off)$		-	43	-	
Fall Time	$tf$		-	35	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	$VSD$	$Is = 1A, VGS = 0V$	-	-	1.2	V
Maximum Body-Diode Continuous Current	$Is$		-	-	130	A
Body Diode Reverse Recovery Time	$Trr$	$Is=50A, di/dt=100A/us, TJ=25^{\circ}C$	-	89	-	nS
Body Diode Reverse Recovery Charge	$Qrr$		-	196	-	nC

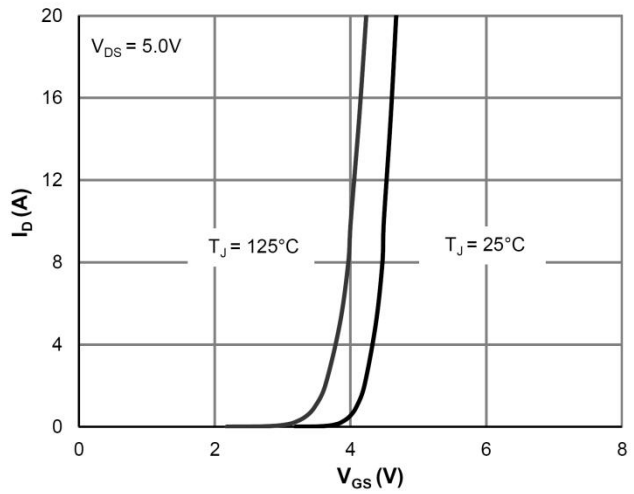
**Note :**

1. The test condition is  $V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$ ;

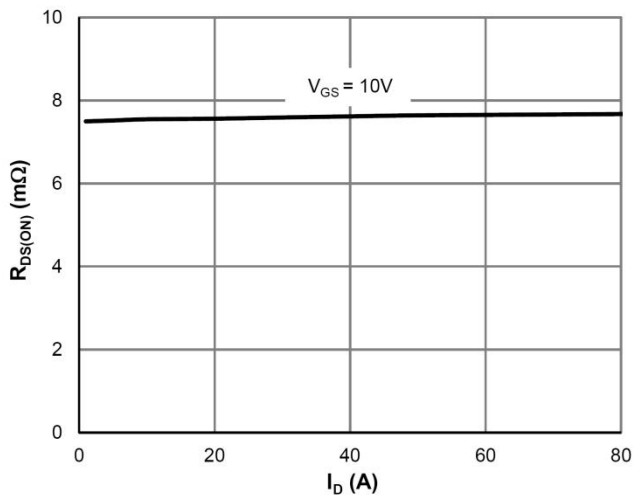
## Typical Characteristics



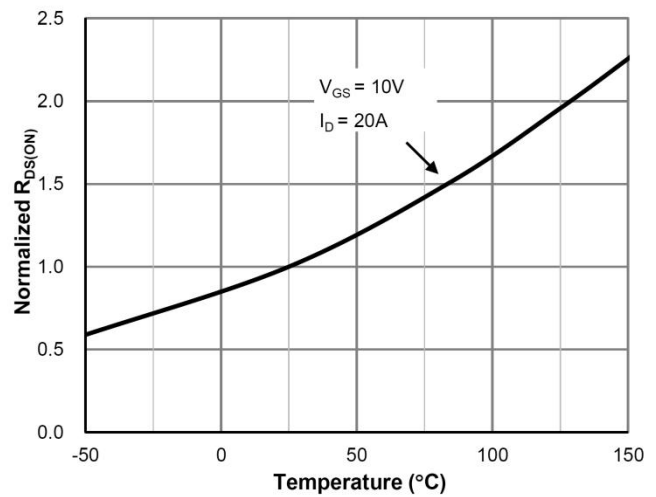
Saturation Characteristics



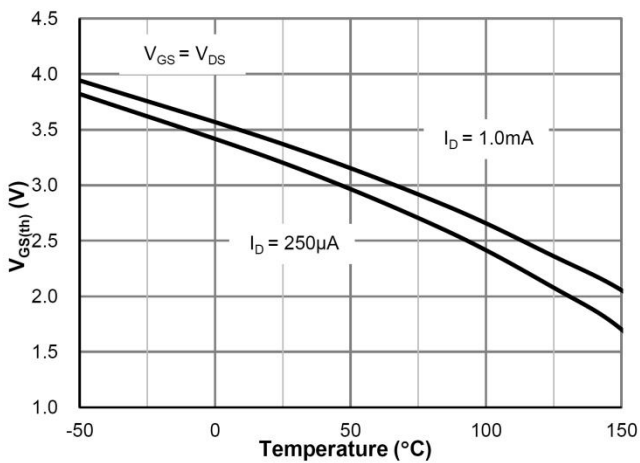
Transfer Characteristics



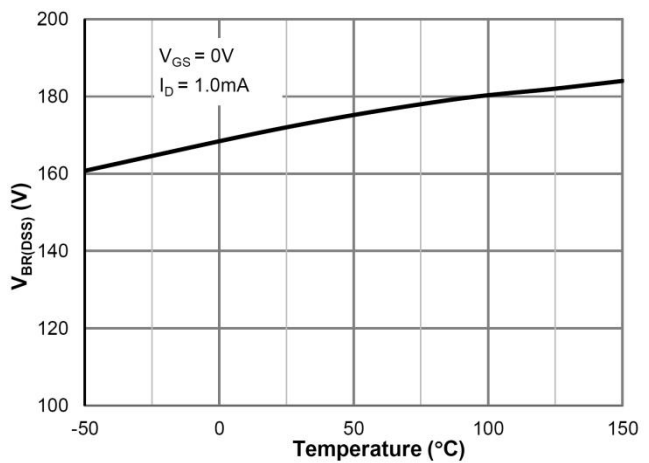
$R_{DS(ON)}$  vs. Drain Current



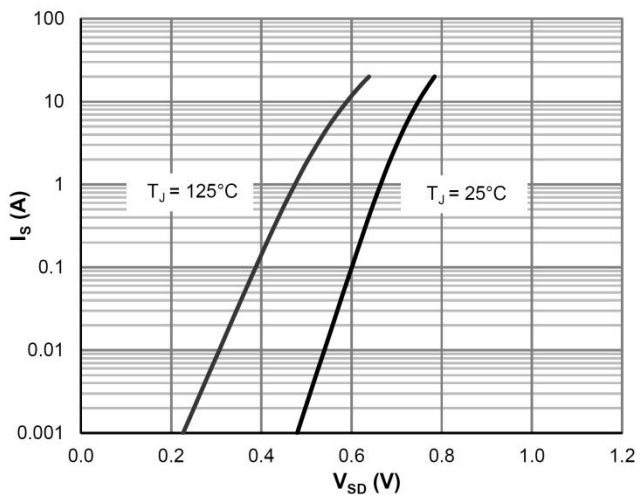
$R_{DS(ON)}$  vs. Junction Temperature



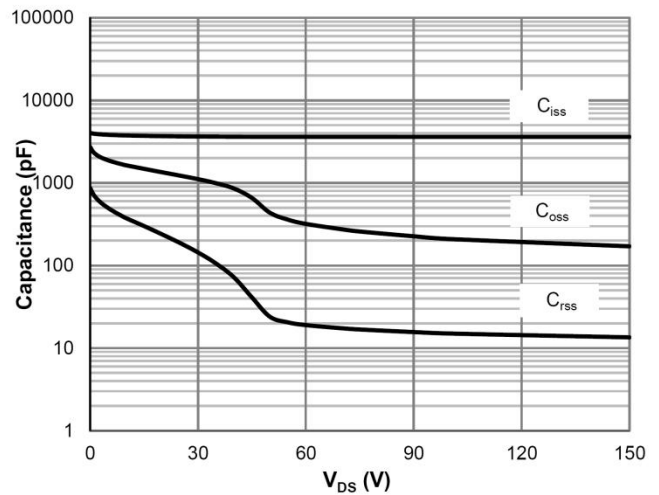
$V_{GS(th)}$  vs. Junction Temperature



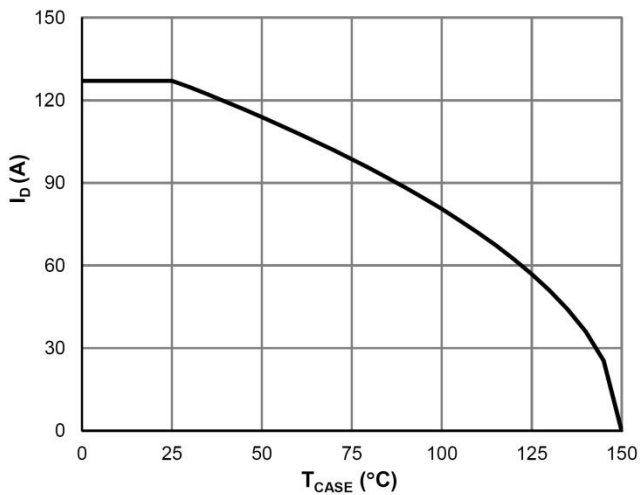
$V_{BR(DSS)}$  vs. Junction Temperature



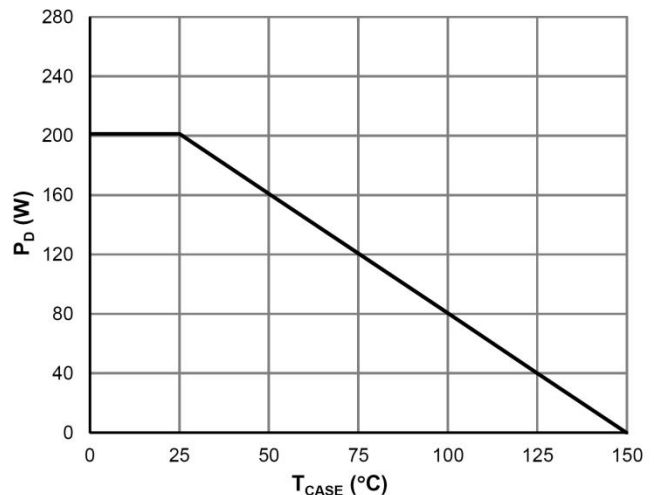
Body-Diode Characteristics



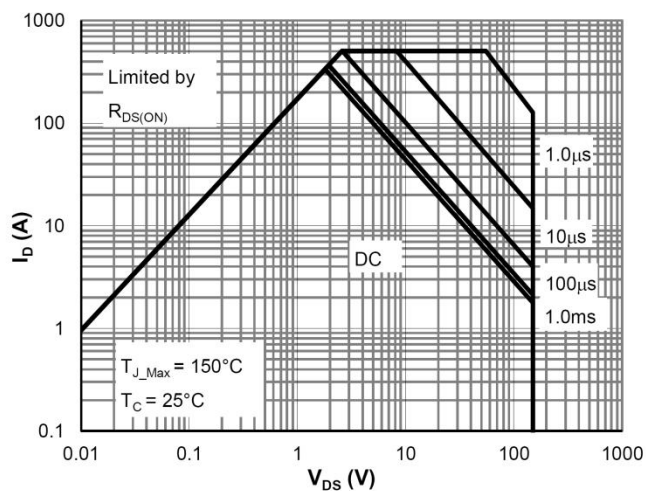
Capacitance Characteristics



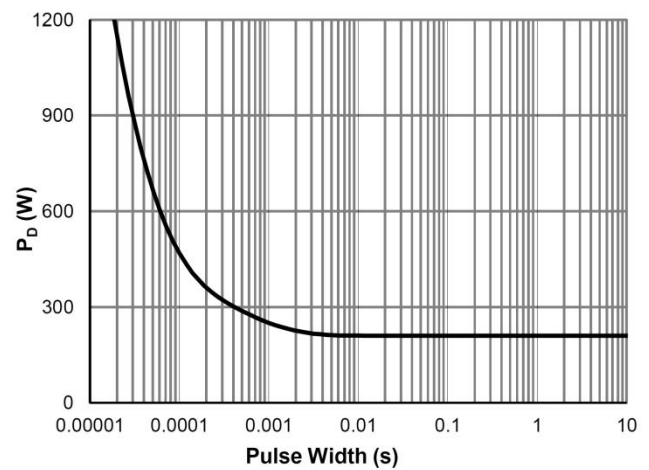
Current De-rating



Power De-rating



Maximum Safe Operating Area



Single Pulse Power Rating, Junction-to-Case

