

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	$2.6m\Omega@10V$	220A



合肥矽普半导体

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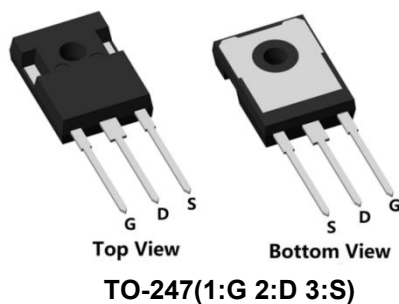
Feature

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

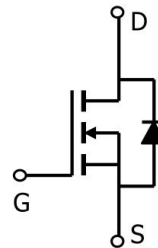
Applications

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

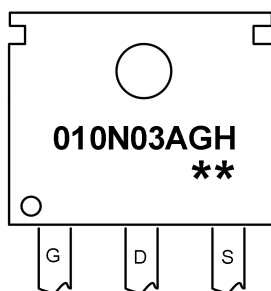
Package



Circuit diagram



Marking



010N03AGH : Product code
****** : Week code

Order Information

Device	Package	Unit/Tube
SP010N03AGHTF	TO-247	30

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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (Tc=25°C)	I_D	220	A
Continuous Drain Current (Tc=100°C)	I_D	150	A
Pulsed Drain Current	I_{DM}	880	A
Single Pulse Avalanche Energy ¹	E_{AS}	1332	mJ
Power Dissipation (Tc=25°C)	P_D	245	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.51	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

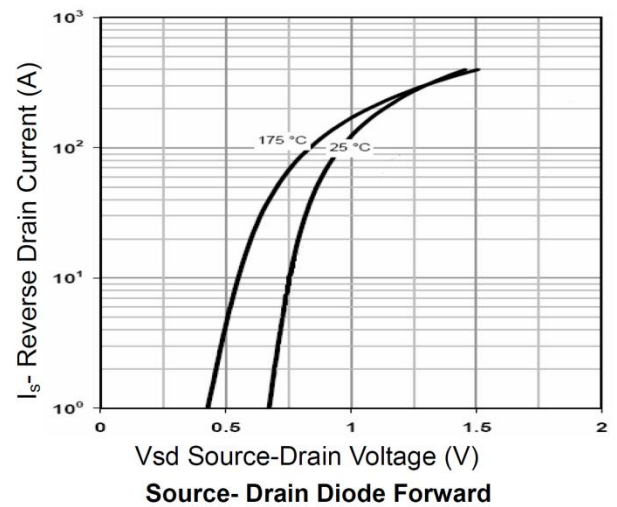
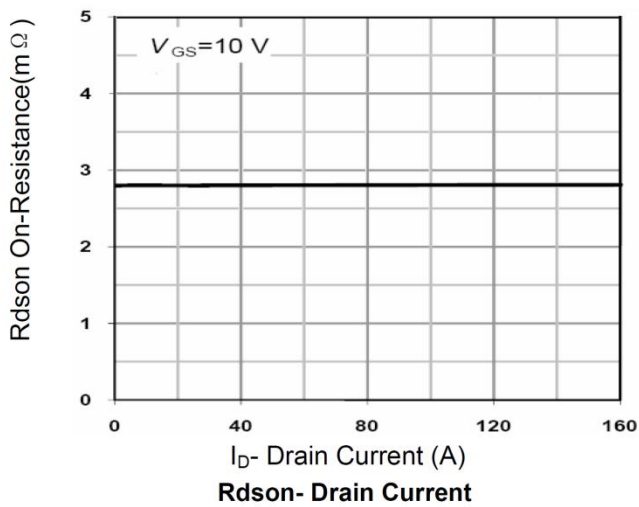
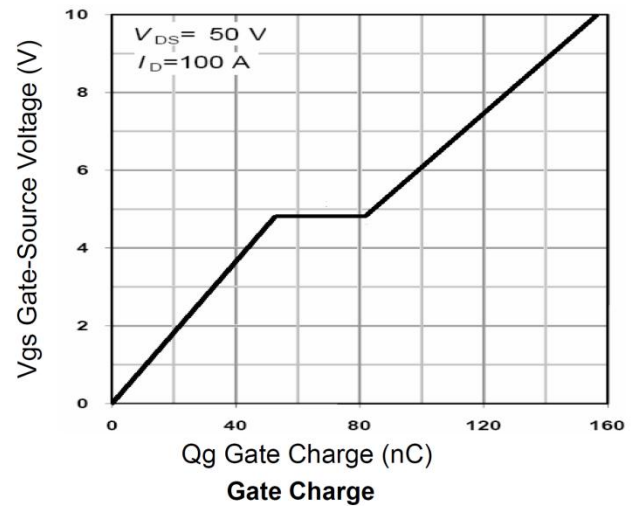
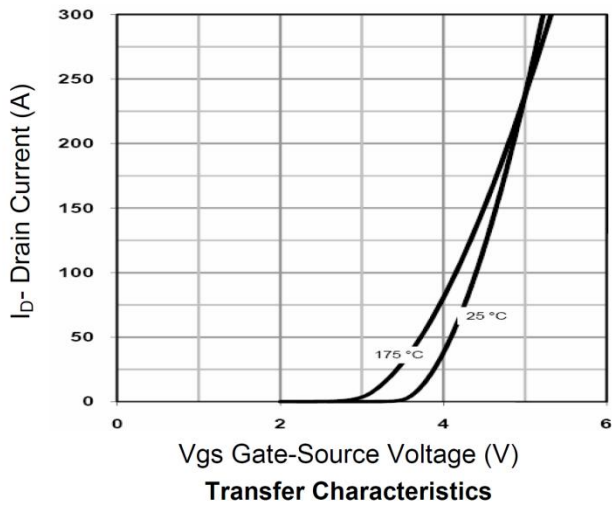
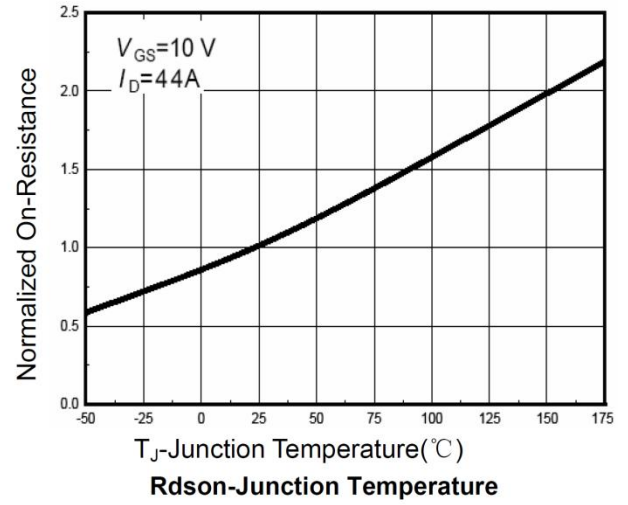
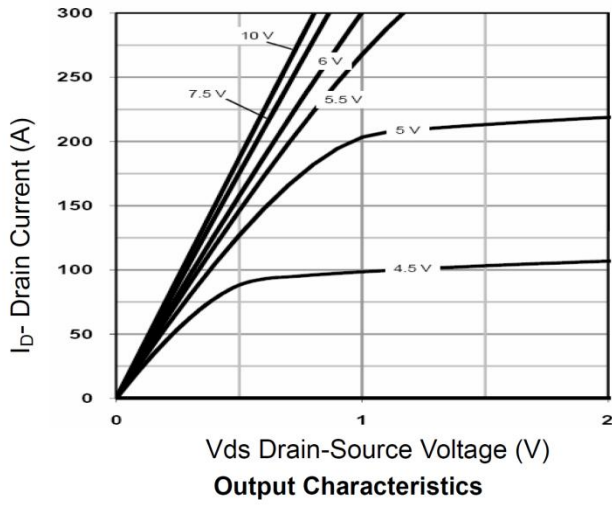
Electrical characteristics (Ta=25°C, unless otherwise noted)

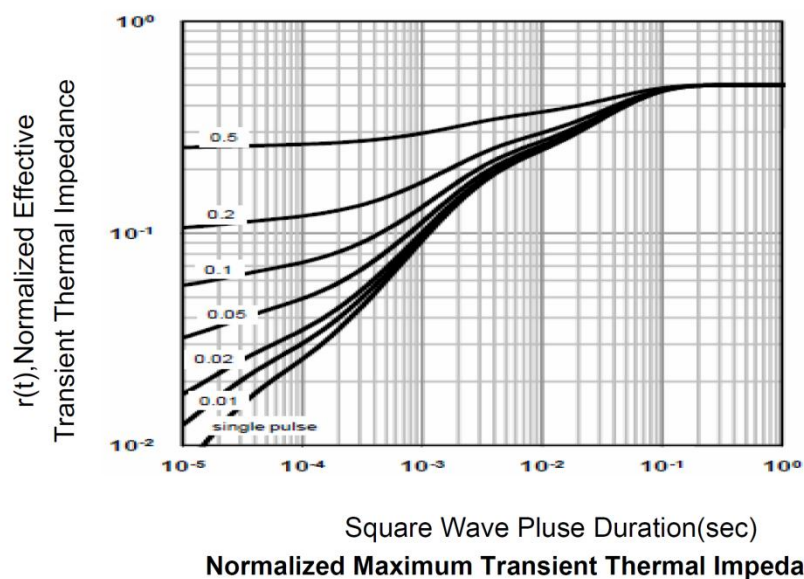
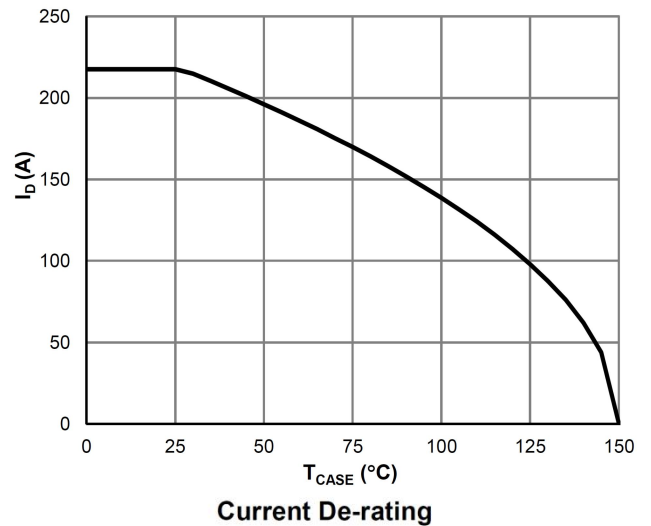
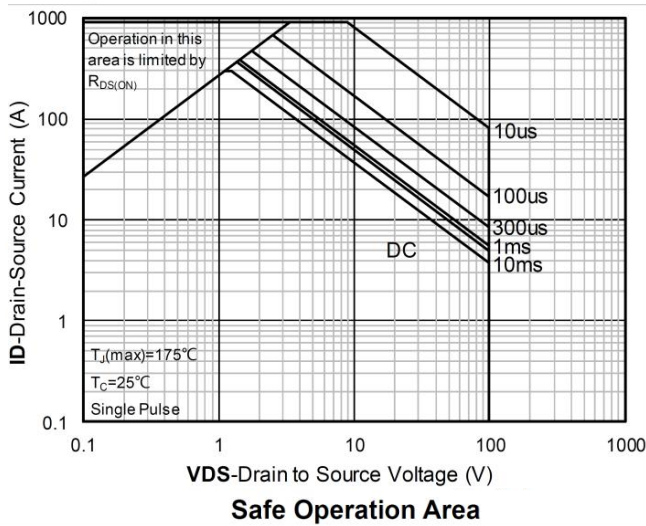
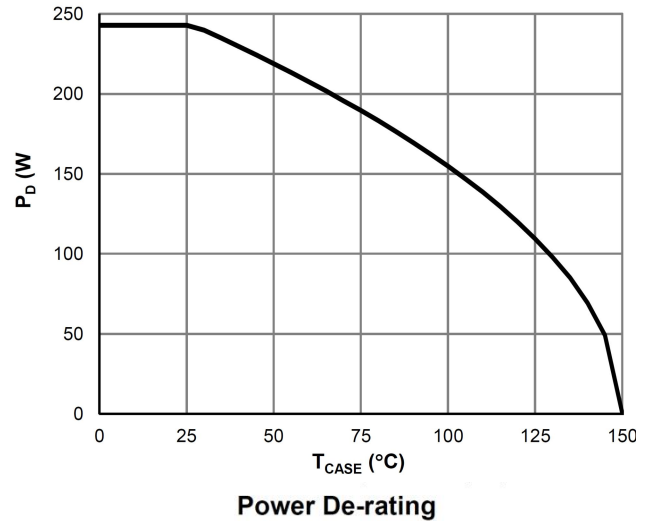
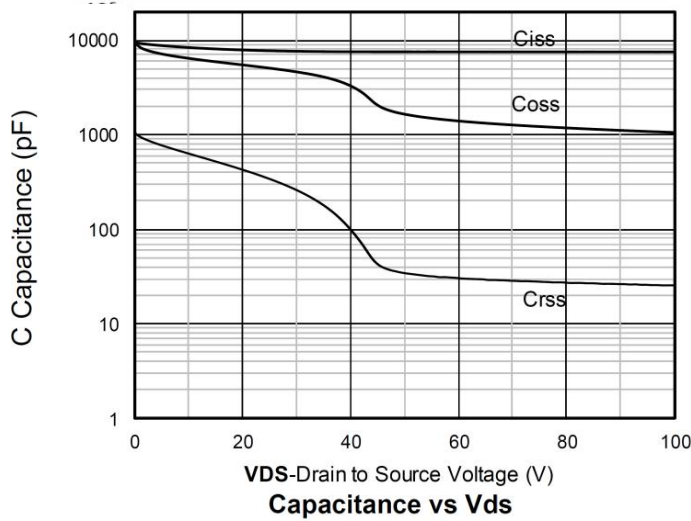
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _D =250uA	100	-	-	V
Drain Cut-Off Current	I _{DSS}	V _{DS} =80V , V _{GS} =0V , T _J =25℃	-	-	1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V , V _{DS} =0V	-	-	±0.1	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0	3.0	4.0	V
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 30A	-	2.6	3.3	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V , V _{GS} =0V , f=1MHz	-	7162	-	pF
Output Capacitance	C _{oss}		-	1067	-	
Reverse Transfer Capacitance	C _{rss}		-	35	-	
Total Gate Charge	Q _g	V _{DS} =50V , V _{GS} =10V , I _D =125A	-	105	-	nC
Gate-Source Charge	Q _{gs}		-	47	-	
Gate-Drain Charge	Q _{gd}		-	23	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DD} =50V, V _{GS} =10V , R _G =6Ω, I _D =125A	-	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, V _{GS} = 0V	-	-	1.2	V
Maximum Body-Diode Continuous Current	I _S		-	-	220	A
Reverse Recovery Time	T _{rr}	I _S =20A, di/dt=100A/us, T _J =25℃	-	75	-	nS
Reverse Recovery Charge	Q _{rr}		-	210	-	nC

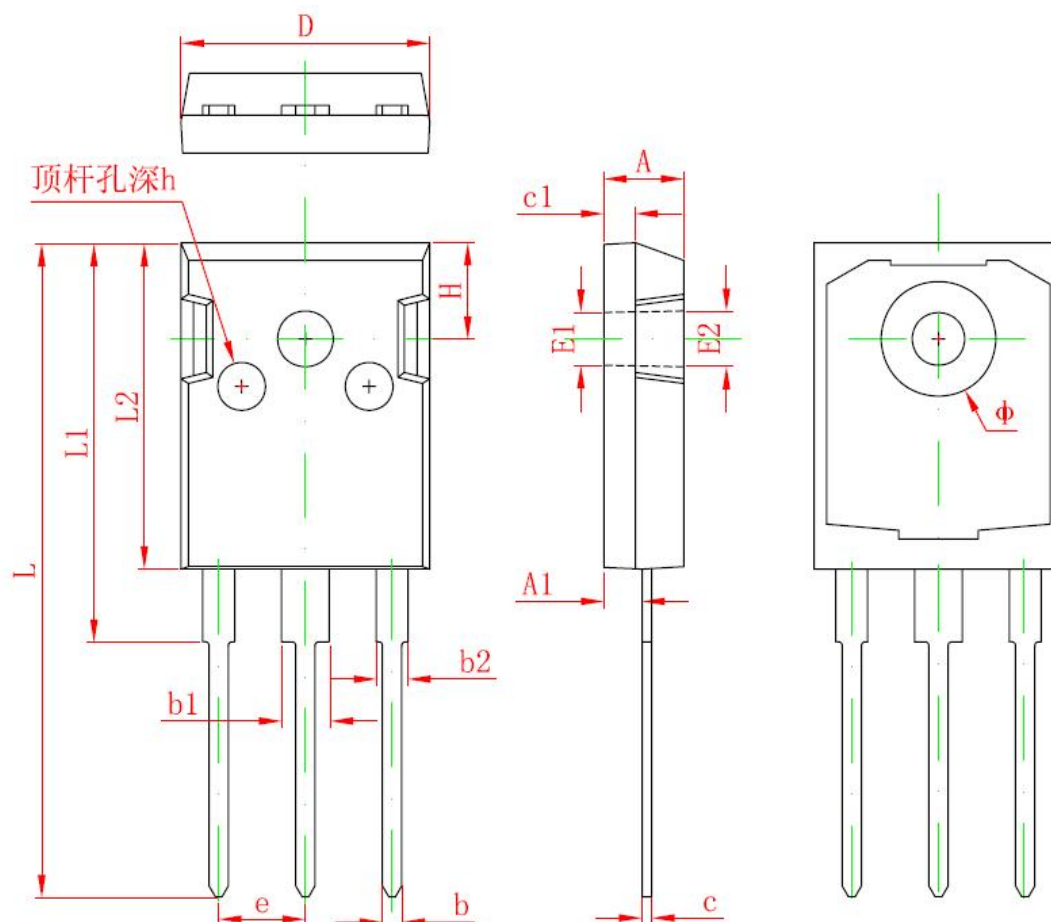
Note :

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

Typical Characteristics





TO-247 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP.		0.215 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012