

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	230mΩ@10V	1.6A
	240mΩ@4.5V	



合肥矽普半导体

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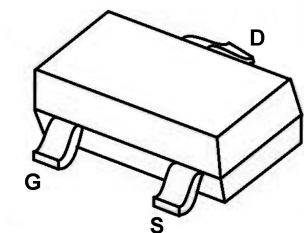
Feature

- High power and current handling capability
- Surface mount package

Application

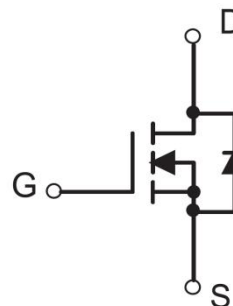
- Battery Switch
- DC/DC Converter

Package

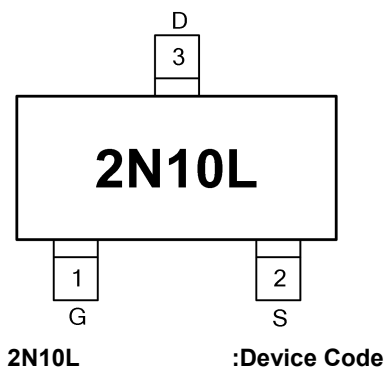


SOT-23

Circuit diagram



Marking



Order Information

Device	Package	Unit/Tape
SP2N10LT2	SOT-23	3000

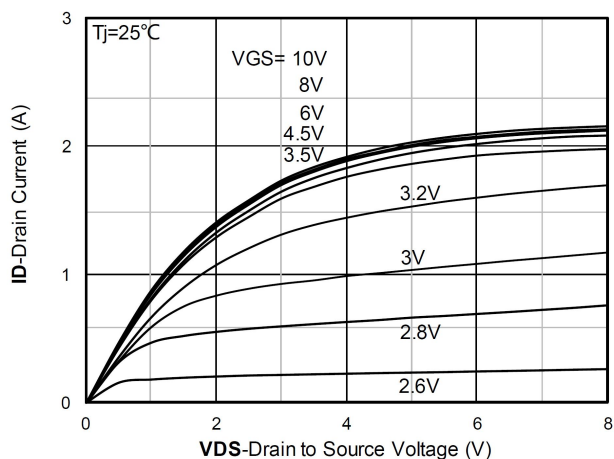
Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	1.6	A
Pulse Drain Current Tested	I_{DM}	6.4	A
Power Dissipation	P_D	1.0	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	125	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

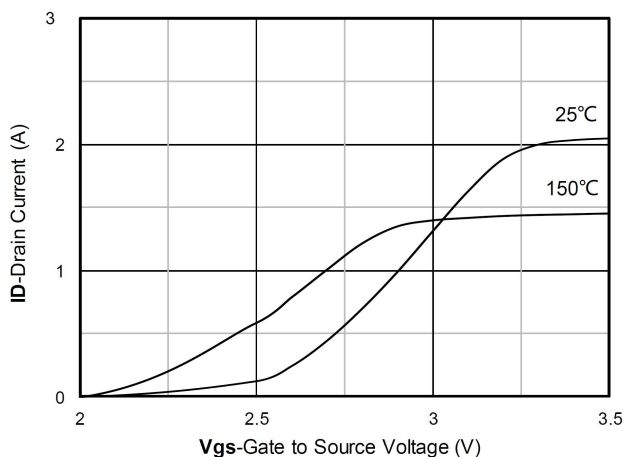
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250μA	100	-	-	V
Drain-Source Leakage Current	I _{DSS}	VDS=80V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	VGS(th)	VDS=VGS , ID=250μA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	VGS=10V, ID=1.5A	-	230	290	mΩ
		VGS=4.5V, ID=1.0A	-	240	330	
Dynamic characteristics						
Input Capacitance	C _{iss}	VDS=10V , VGS=0V , f=1MHz	-	310	-	pF
Output Capacitance	C _{oss}		-	25	-	
Reverse Transfer Capacitance	C _{rss}		-	22	-	
Total Gate Charge	Q _g	VDS=50V , VGS=10V , ID=1.5A	-	6	-	nC
Gate-Source Charge	Q _{gs}		-	1.4	-	
Gate-Drain Charge	Q _{gd}		-	1.6	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	VDS=50V VGS=10V , RG=1Ω, ID=1.5A	-	3.2	-	nS
Turn-On Rise Time	t _r		-	14	-	
Turn-Off Delay Time	t _{d(off)}		-	11	-	
Turn-Off Fall Time	t _f		-	22	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

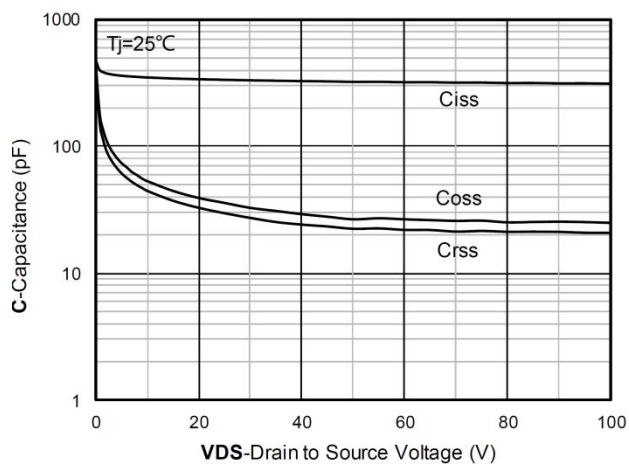
Typical Characteristics



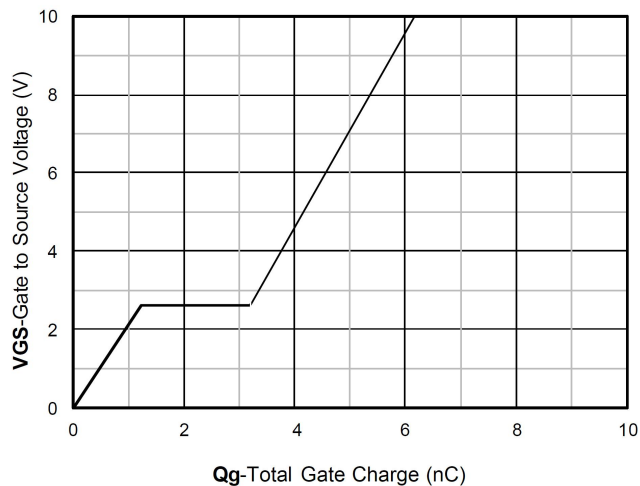
Output Characteristics



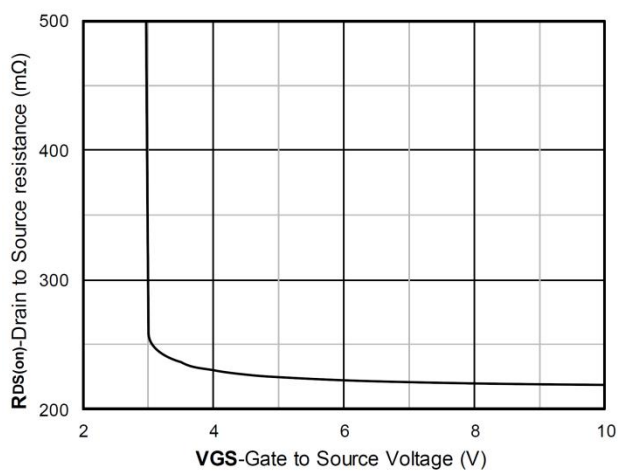
Transfer Characteristics



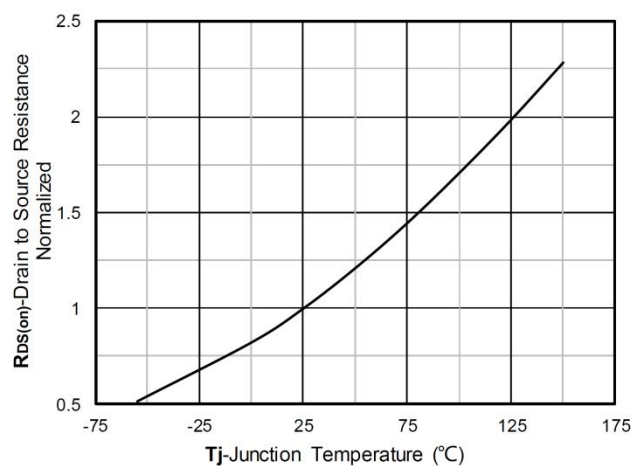
Capacitance Characteristics



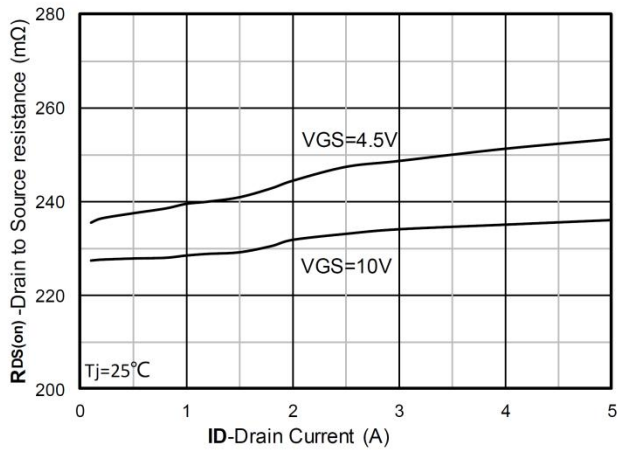
Gate Charge



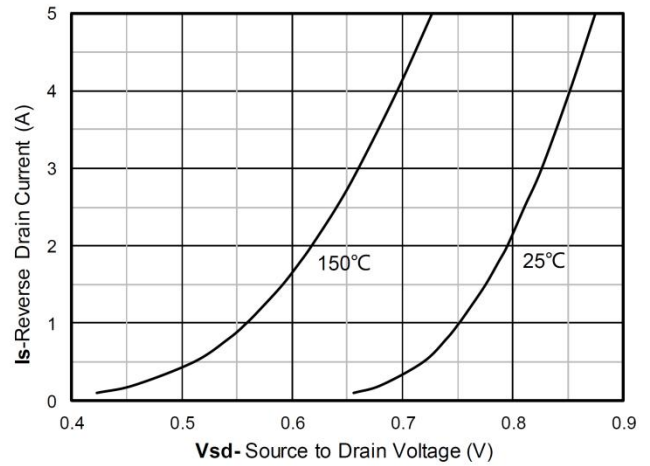
On-Resistance vs Gate to Source Voltage



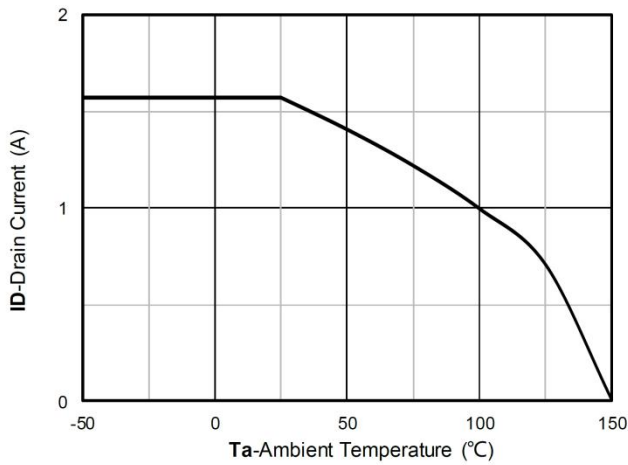
Normalized On-Resistance



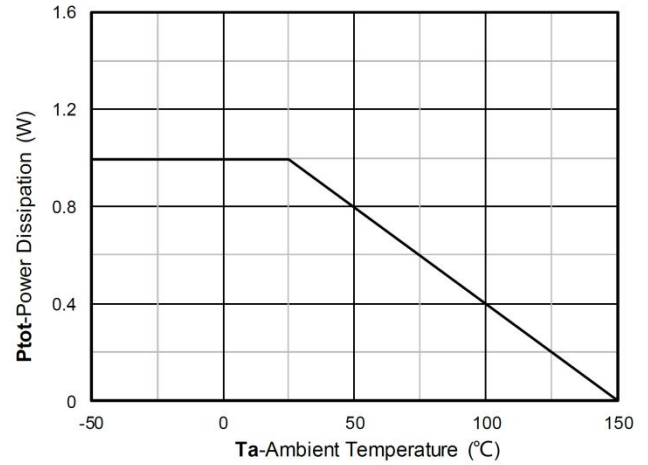
$R_{DS(on)}$ VS Drain Current



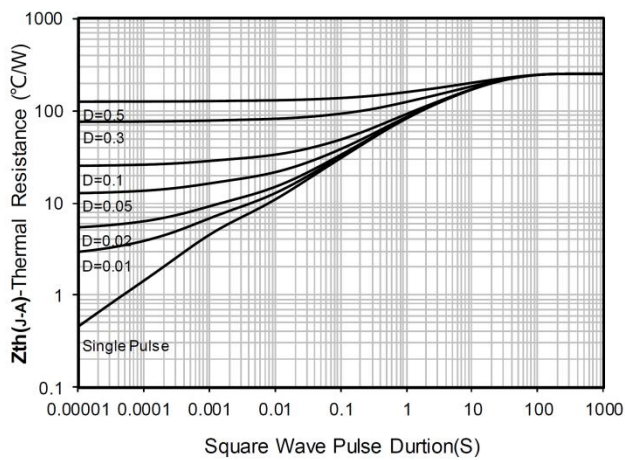
Forward characteristics of reverse diode



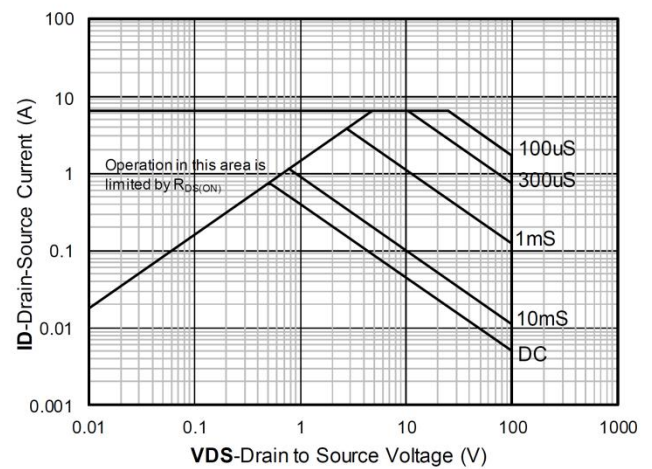
Current dissipation



Power dissipation

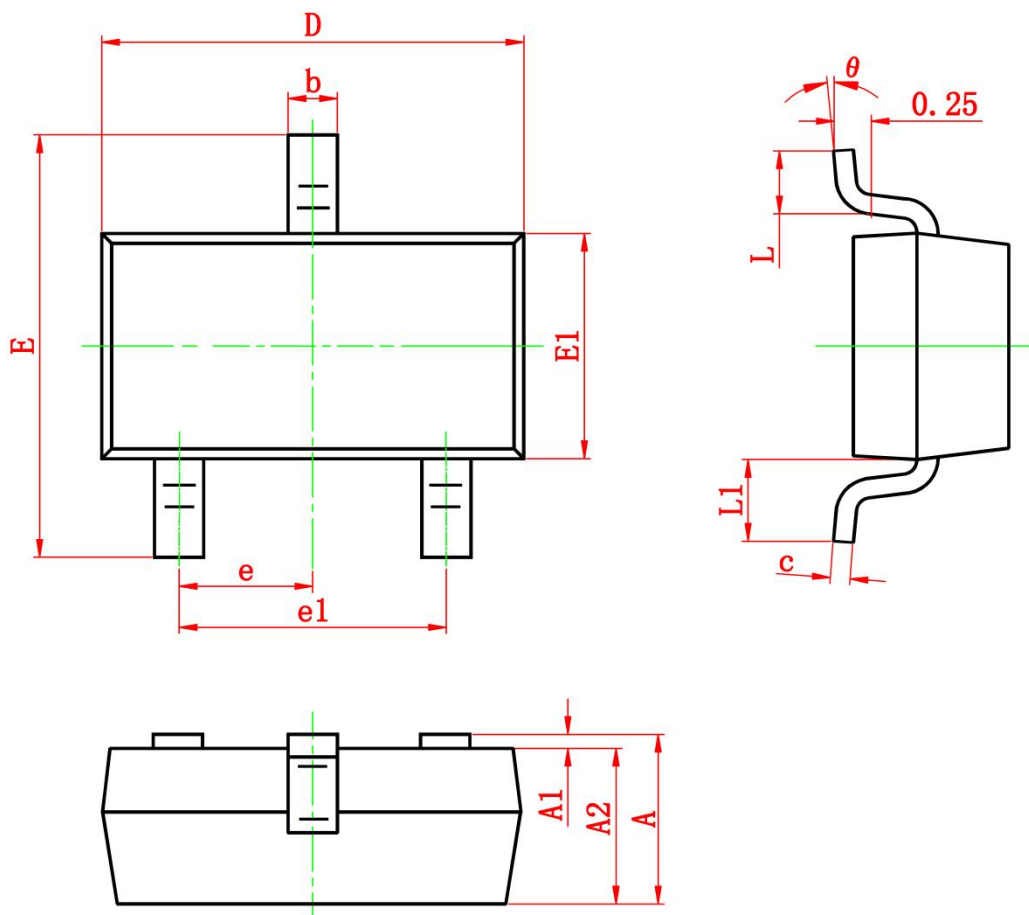


Maximum Transient Thermal Impedance



Safe Operation Area

SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E1	1.20	1.40
E	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°