Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	220mΩ@10V	2A
	240mΩ@4.5V	

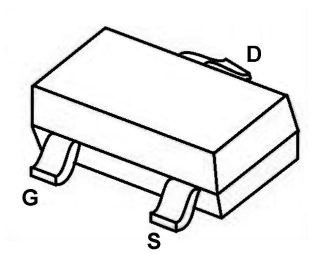
Feature

- High power and current handing capability
- Surface mount package

Application

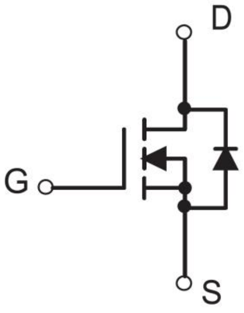
- Battery Switch
- DC/DC Converter

Package

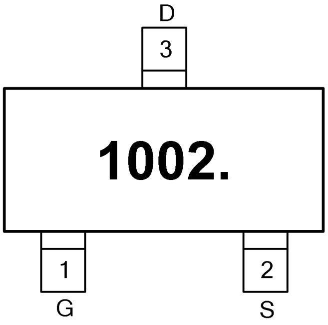


SOT-23

Circuit diagram



Marking



1002. **:Device Code**

Order Information

Device	Package	Unit/Tape
SP2N10T2A	SOT-23	3000

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

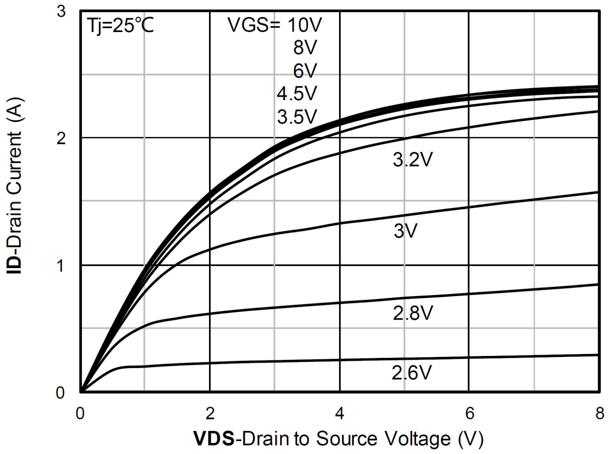
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	2	A
Pulse Drain Current Tested	I_{DM}	8	A
Power Dissipation	P_D	1.15	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	108	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

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

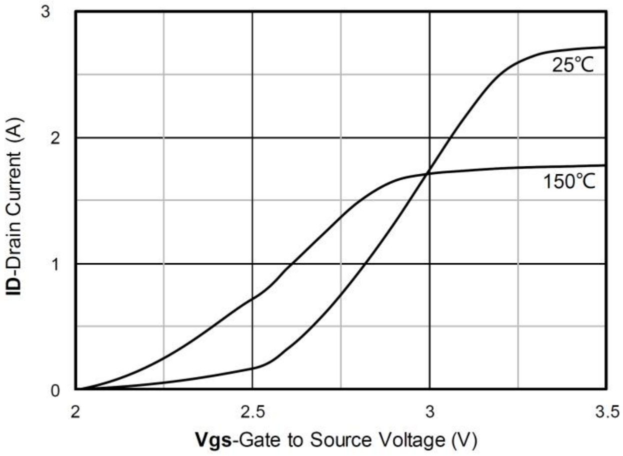
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V , ID=250μA	100	-	-	V
Drain-Source Leakage Current	I_{DSS}	VDS=80V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS , ID=250μA	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS=10V, ID=1.5A	-	220	280	mΩ
		VGS=4.5V, ID=1.0A	-	240	310	
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS=10V , VGS=0V , f=1MHz	-	360	-	pF
Output Capacitance	C_{oss}		-	25	-	
Reverse Transfer Capacitance	C_{rss}		-	13	-	
Total Gate Charge	Q_g	VDS=50V , VGS=10V , ID=1.5A	-	7	-	nC
Gate-Source Charge	Q_{gs}		-	1.3	-	
Gate-Drain Charge	Q_{gd}		-	1.2	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	VDS=50V VGS=10V , RG=1Ω, ID=1.5A	-	3	-	nS
Turn-On Rise Time	t_r		-	12	-	
Turn-Off Delay Time	$t_{d(off)}$		-	10	-	
Turn-Off Fall Time	t_f		-	21	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V_{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

.

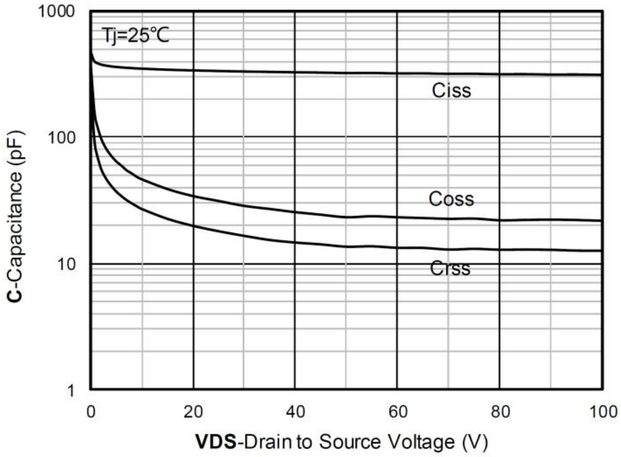
Typical Characteristics



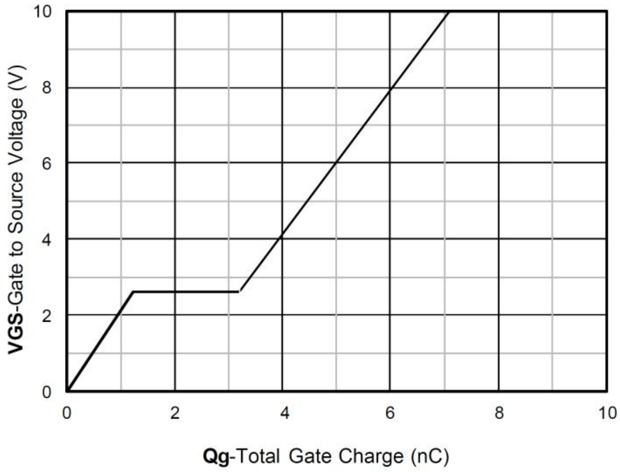
Output Characteristics



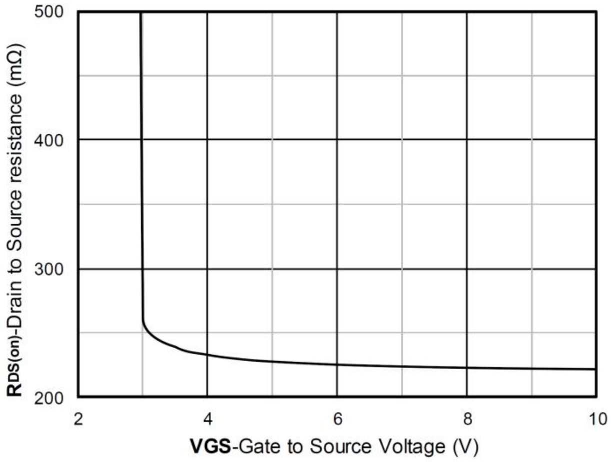
Transfer Characteristics



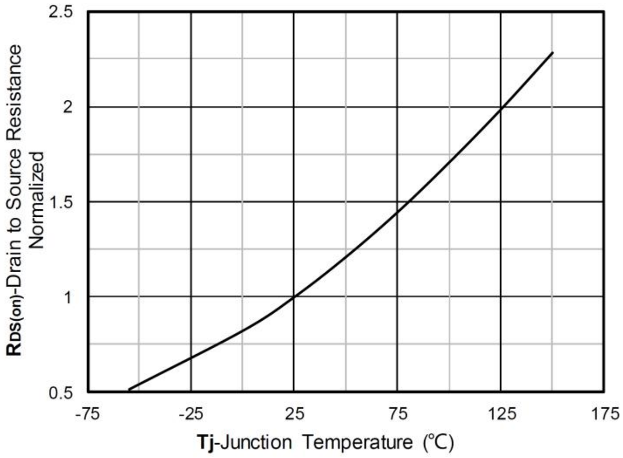
Capacitance Characteristics



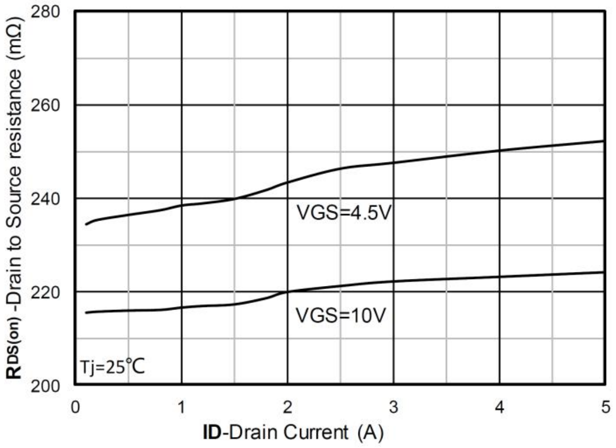
Gate Charge



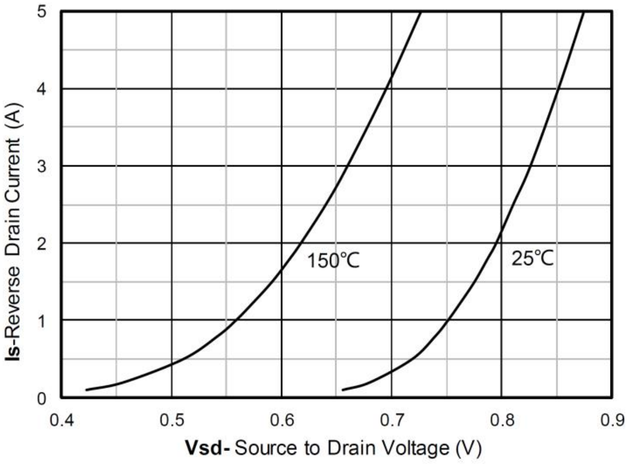
On-Resistance vs Gate to Source Voltage



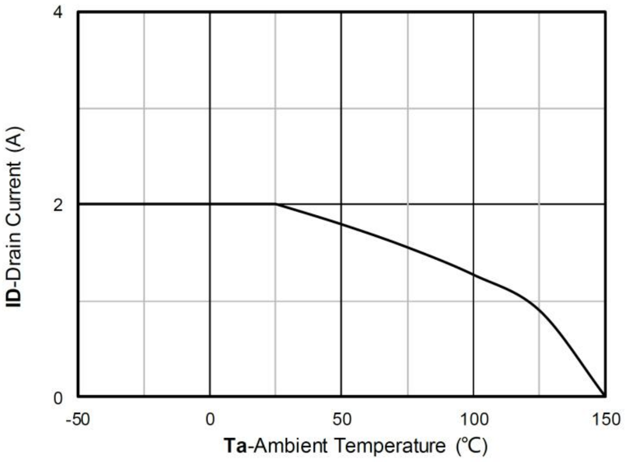
Normalized On-Resistance



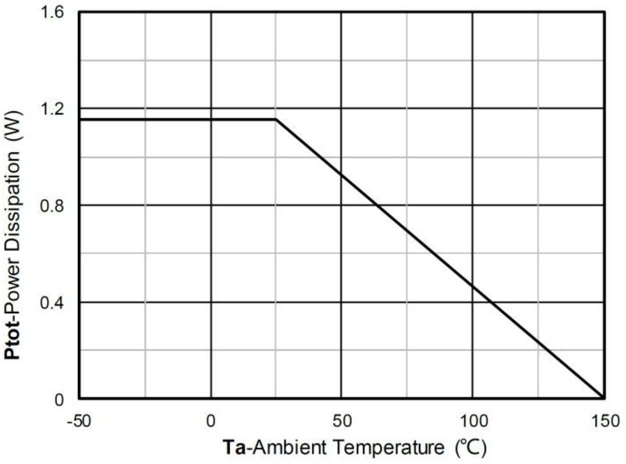
RDS(on) VS Drain Current



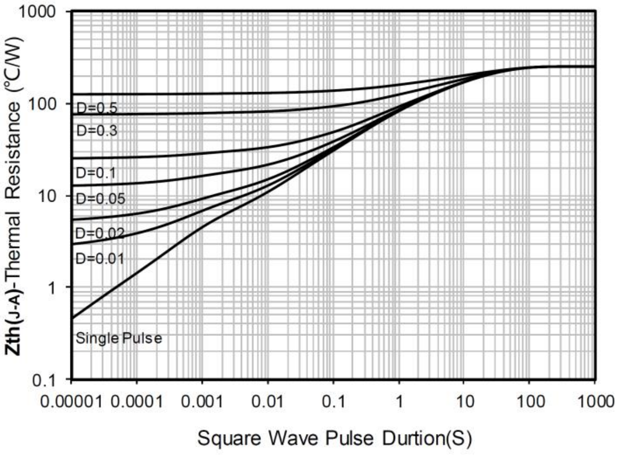
Forward characteristics of reverse diode



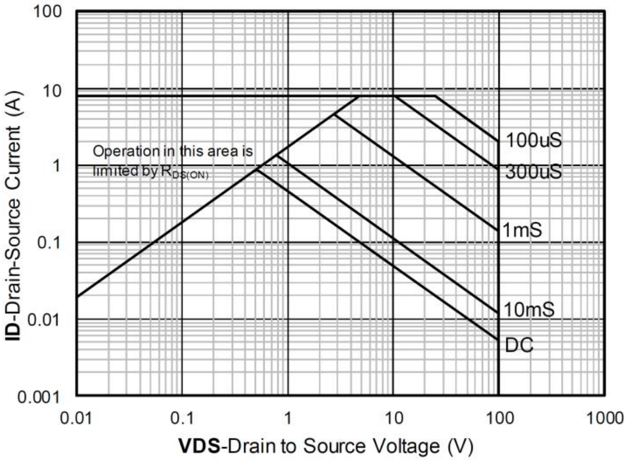
Current dissipation



Power dissipation

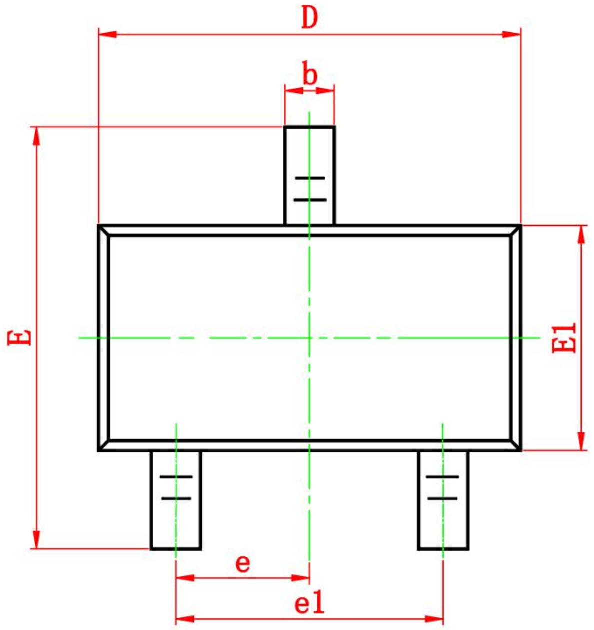


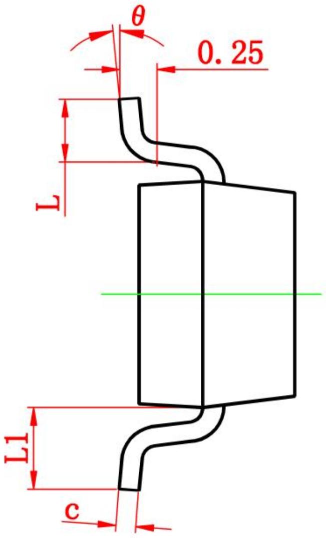
Maximum Transient Thermal Impedance

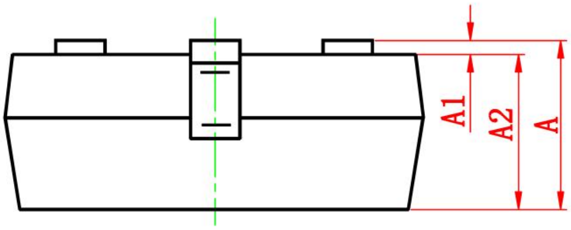


Safe Operation Area

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°