

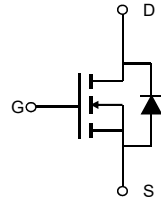
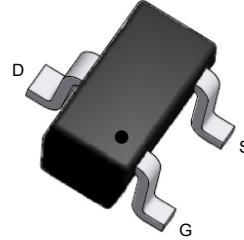
Features

- Low $R_{DS(on)}$ @ $V_{GS}=4.5V$
- 3.3V Logic Level Control
- N Channel SOT23 Package
- Pb-Free, RoHS Compliant

$V_{(BR)DSS}$	$R_{DS(on)}$ Typ	I_D Max
60V	60mΩ @ 10V	3A
	70mΩ @ 4.5V	

Applications

- Low-side Load switch
- Switching Circuits
- Battery Switch
- DC/DC Converter



Order Information

Product	Package	Marking	Packing
SN2633S	SOT23	D63	3000PCS/Reel

SOT23

Absolute Maximum Ratings

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter	Rating	Unit
Common Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)			
V_{GS}	Gate-Source Voltage	± 12	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	60	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 150	°C
Mounted on Large Heat Sink			
I_{DM}	Pulse Drain Current Tested①	$T_A=25^\circ\text{C}$	12 A
I_D	Continuous Drain Current	$T_A=25^\circ\text{C}$	3 A
		$T_A=70^\circ\text{C}$	2.4 A
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	1.56 W
		$T_A=70^\circ\text{C}$	1.25 W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	80	°C/W

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current(T _A =25°C)	V _{DS} =60V, V _{GS} =0V	-	-	1	μA
	Zero Gate Voltage Drain Current(T _A =125°C)	V _{DS} =48V, V _{GS} =0V	-	-	100	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.6	-	1.8	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =10V, I _D =3A	-	60	90	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =4.5V, I _D =2A	-	70	120	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =3.3V, I _D =1A	-	82	150	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	-	341	-	pF
C _{OSS}	Output Capacitance		-	28	-	pF
C _{rss}	Reverse Transfer Capacitance		-	21	-	pF
Q _g	Total Gate Charge	V _{DS} =30V I _D =3A, V _{GS} =10V	-	9.7	-	nC
Q _{gs}	Gate Source Charge		-	0.8	-	nC
Q _{gd}	Gate Drain Charge		-	2.3	-	nC
Switching Characteristics @ T_J = 25°C (unless otherwise stated)						
t _{d(on)}	Turn on Delay Time	V _{DD} =30V, I _D =1A, R _G =3.3Ω, V _{GS} =10V	-	3.4	-	ns
t _r	Turn on Rise Time		-	5.5	-	ns
t _{d(off)}	Turn Off Delay Time		-	18	-	ns
t _f	Turn Off Fall Time		-	3.6	-	ns
Source Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _{SD}	Source drain current(Body Diode)	T _A =25°C	-	-	2	A
V _{SD}	Forward on voltage②	T _J =25°C, I _{SD} =2A, V _{GS} =0V	-	0.78	1.2	V

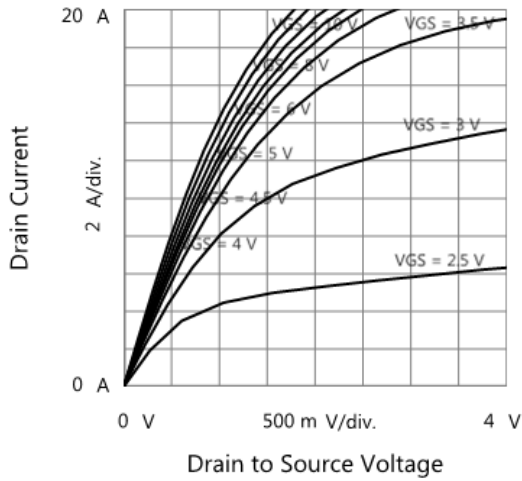
Notes:

① Pulse width limited by maximum allowable junction temperature

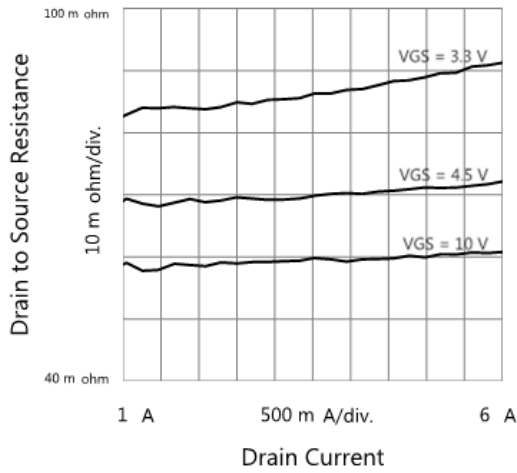
② Pulse test ; Pulse width≤300μs, duty cycle≤2%.

Typical Characteristics

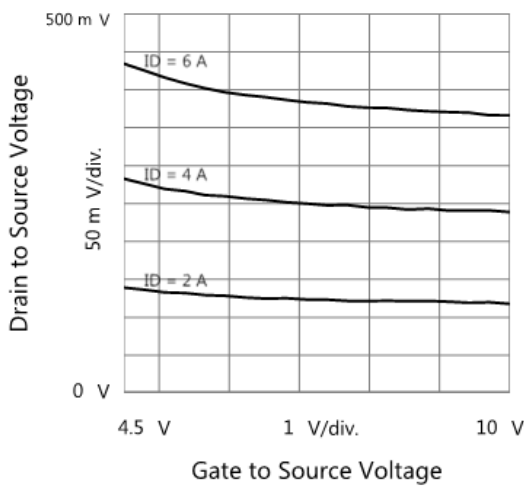
Output Characteristics



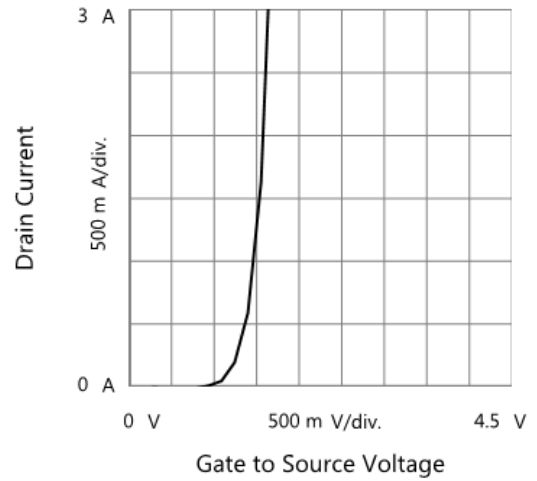
Drain to Source Resistance vs. Drain Current



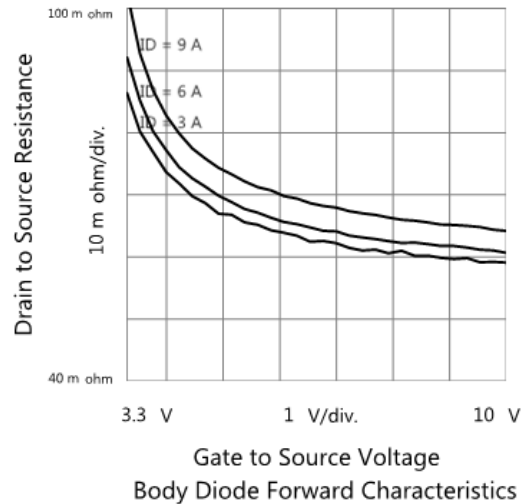
Drain to Source Voltage vs. Gate to Source Voltage



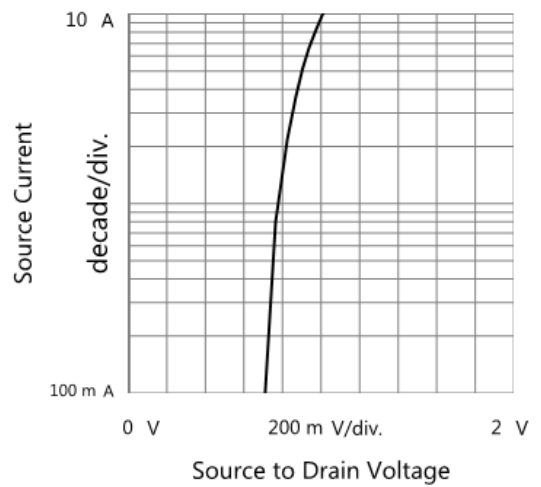
Transfer Characteristics



Drain to Source Resistance vs. Gate to Source Voltage

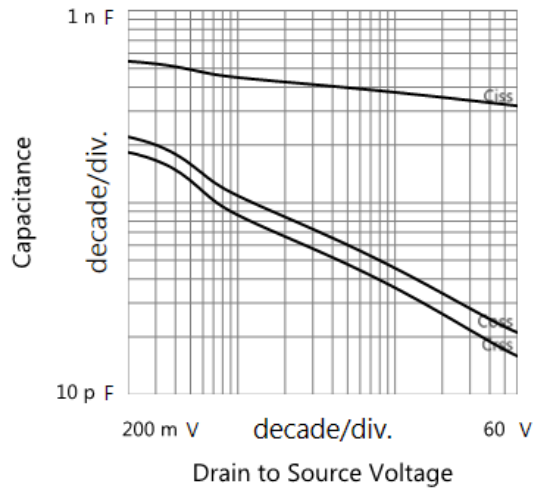


Body Diode Forward Characteristics

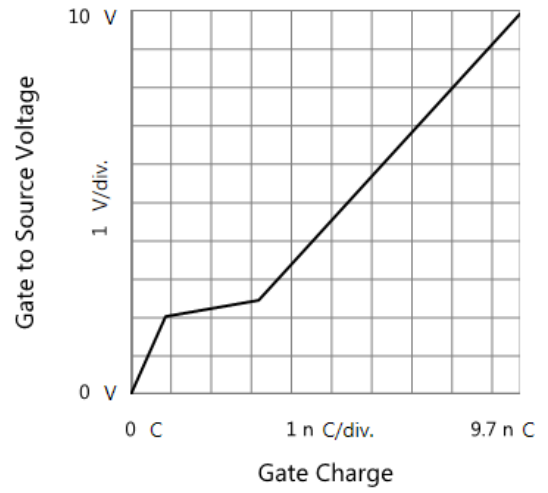


Typical Characteristics

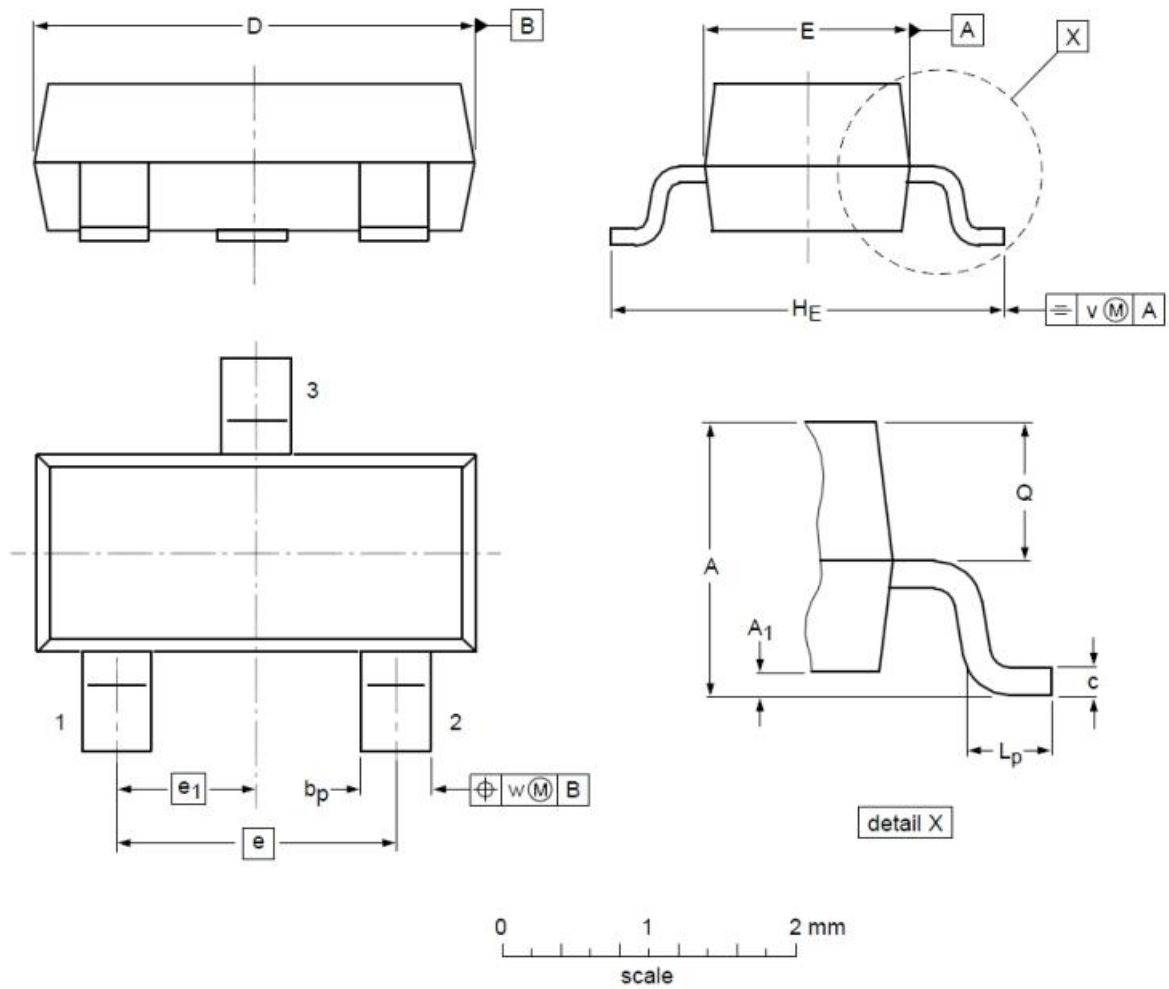
Capacitances



Gate Charge



SOT23 Mechanical Data



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	A ₁	0.01	0.05	0.10
b _p	0.30	0.42	0.50	c	0.08	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	--	1.90	--	e ₁	--	0.95	--
H _E	2.25	2.40	2.55	L _p	0.30	0.42	0.50
Q	0.45	0.49	0.55	v	--	0.20	--
w	--	0.10	--				