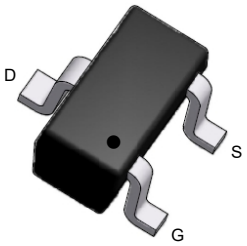
Features

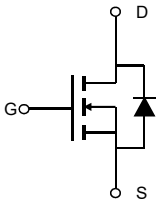
- *Low $R_{DS(on)}$ @V_{GS}=4.5V*
- *3.3V Logic Level Control*
- *N Channel SOT23 Package*
- *Pb−Free, RoHS Compliant*
- *Automotive Grade, Meets AEC-Q101*

Applications

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

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





Order Information

SOT23

Product	Package	Marking	Packing
SN2633S-AU	SOT23	D63	3000PCS/Reel

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°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		60	V
T_J	Maximum Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-50 to 150	℃
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested①	T_A=25°C	12	A
I_D	Continuous Drain Current	T_A=25°C	3	A
		T_A=70°C	2.4	
P_D	Maximum Power Dissipation	T_A=25°C	1.56	W
		T_A=70°C	1.25	
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		80	℃ /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℃)	V_{DS}=60V, V_{GS}=0V	–	–	1	μA
	Zero Gate Voltage Drain Current(T_A=125℃)	V_{DS}=48V, V_{GS}=0V	–	–	100	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V, 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℃	–	–	2	A
V_{SD}	Forward on voltage②	T_j=25℃, I_{SD}=2A, V_{GS}=0V	–	0.78	1.2	V

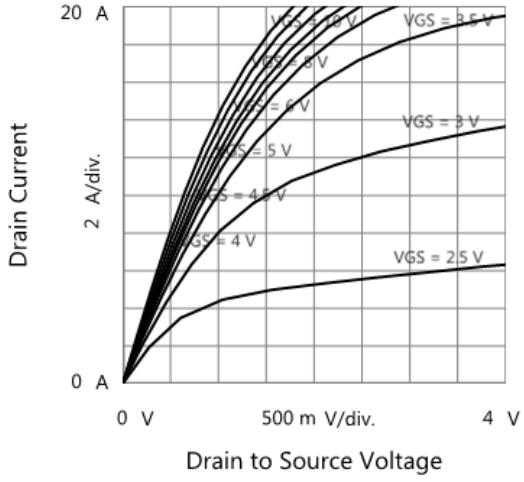
Notes:

① Pulse width limited by maximum allowable junction temperature

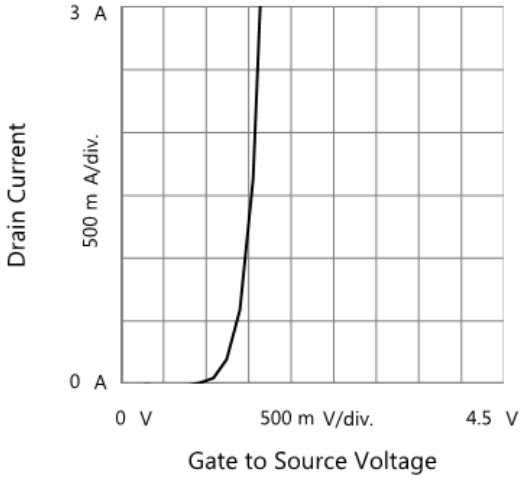
②Pulse test ; Pulse width≤300μs, duty cycle≤2%.

Typical Characteristics

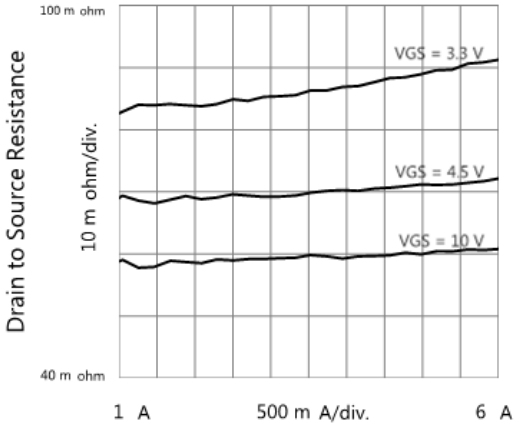
Output Characteristics



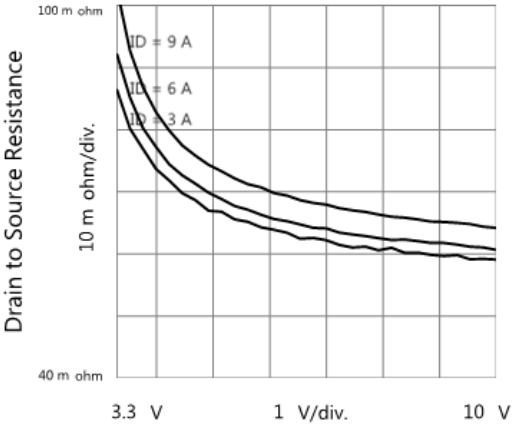
Transfer Characteristics



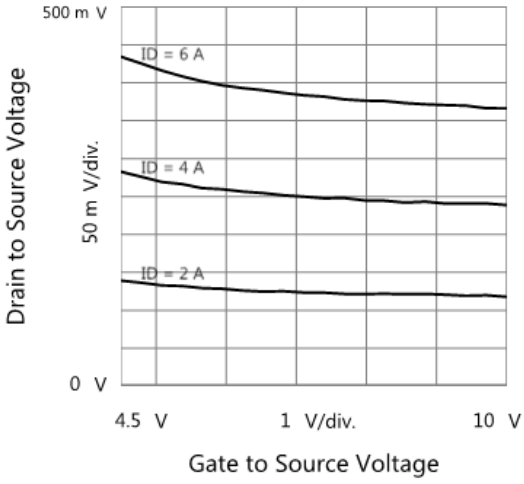
Drain to Source Resistance vs. Drain Current



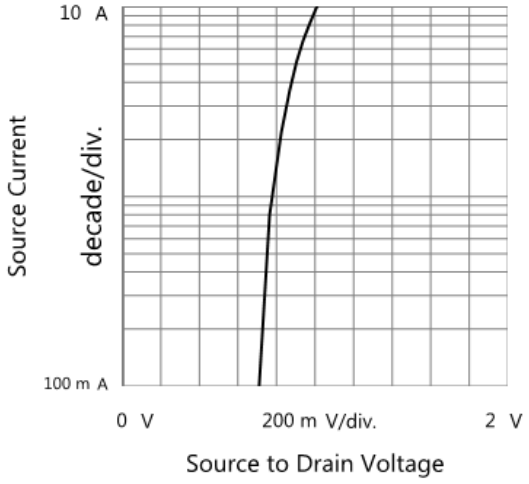
Drain to Source Resistance vs. Gate to Source Voltage



Drain to Source Voltage vs. Gate to Source Voltage

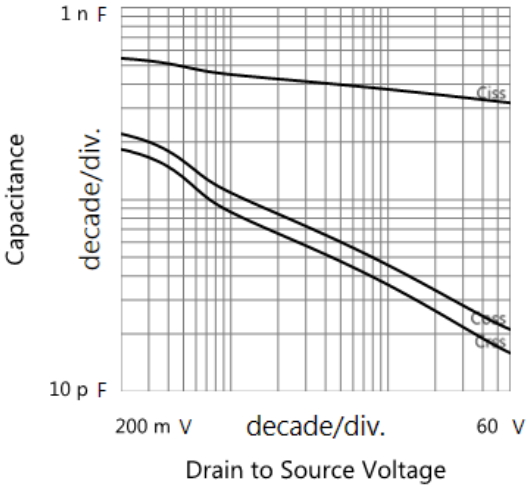


Body Diode Forward Characteristics

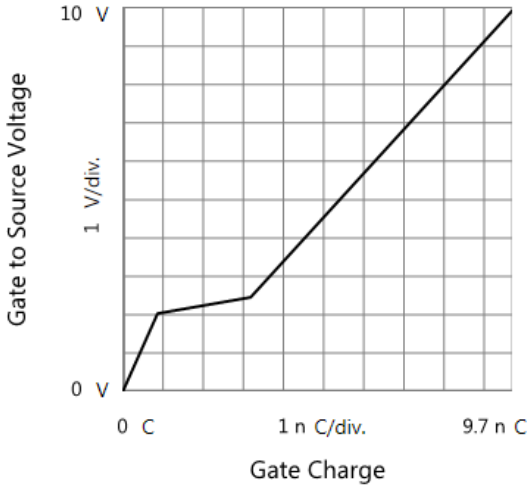


Typical Characteristics

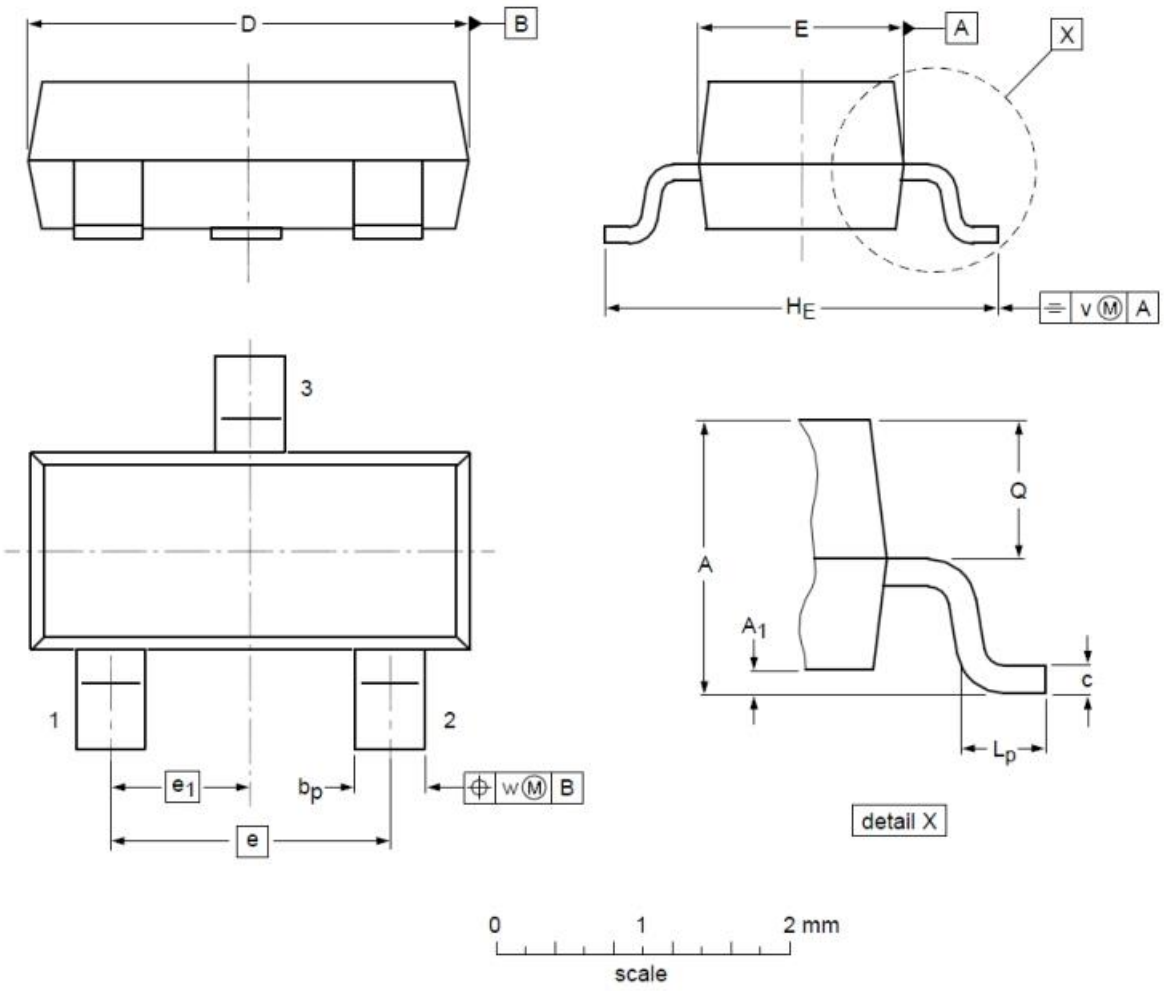
Capacitances



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	--				