

SOT23-3L Plastic-Encapsulate MOSFETS

N-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20 V	12mΩ@4.5V	8 A
	13mΩ@3.3V	

Outline

SOT23-3L



Features

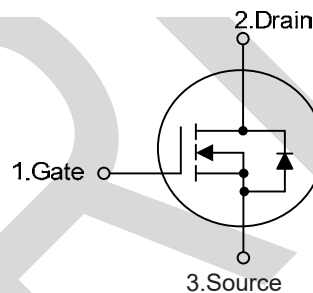
- 1、Low on – resistance
- 2、High power package (SOT23-3L)
- 3、SGT N-channel Power MOSFET

Inner Circle

Packaging specifications

Applications

- 1、Load Switch for Portable Devices
- 2、DC/DC Converter



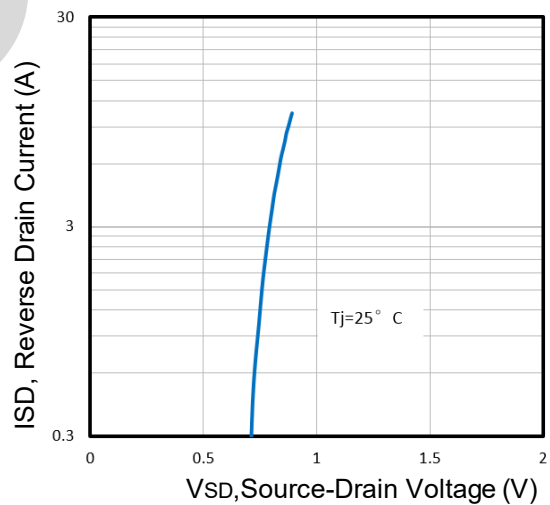
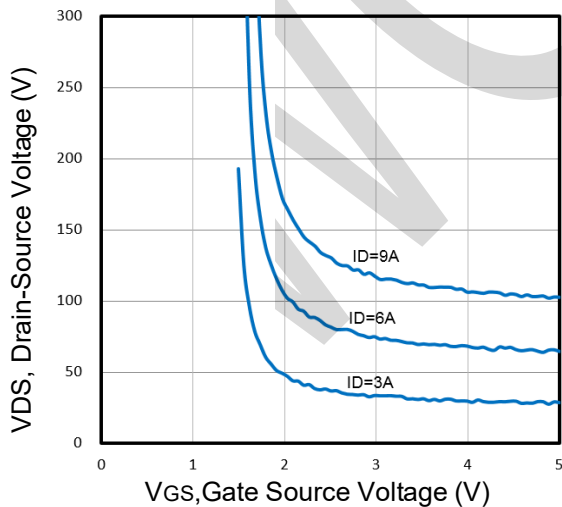
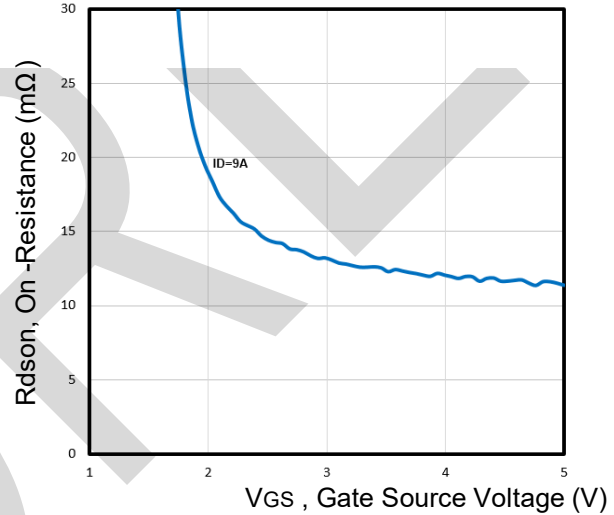
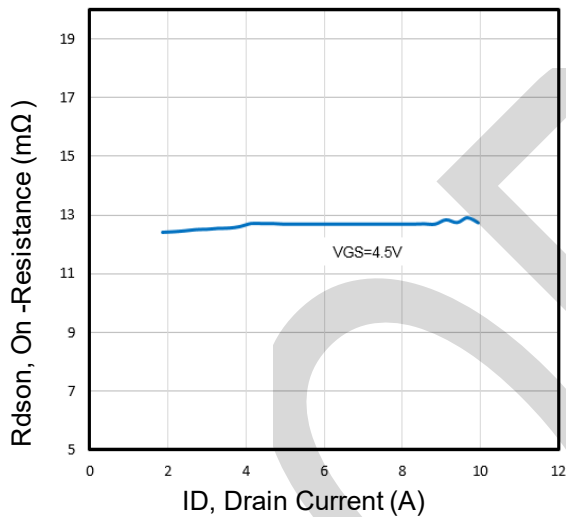
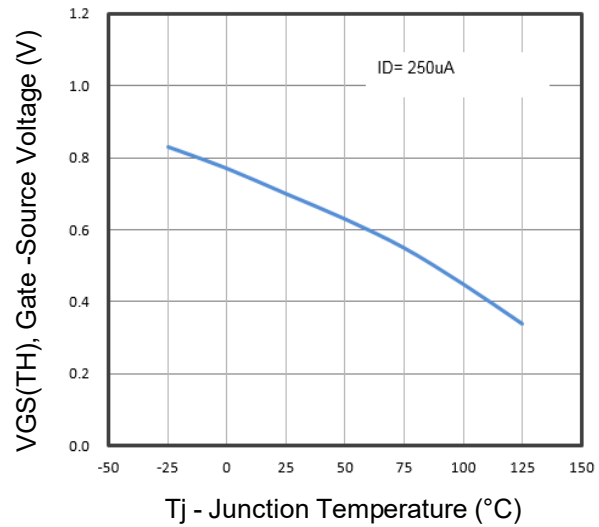
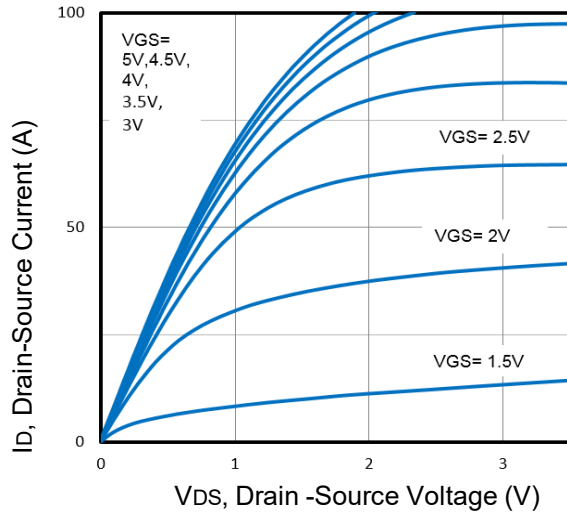
Maximum ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Unit	
Common Ratings (TA=25°C Unless Otherwise Noted)				
VGS	Gate-Source Voltage	±12	V	
V(BR)DSS	Drain-Source Breakdown Voltage	20	V	
TJ	Maximum Junction Temperature	150	°C	
TSTG	Storage Temperature Range	-50 to 150	°C	
Mounted on Large Heat Sink				
IDM	Pulse Drain Current Tested①	TA =25°C	32	A
ID	Continuous Drain Current	TA =25°C	8	A
		TA =70°C	6.4	
Pd	Maximum Power Dissipation	TA =25°C	15	W
RθJA	Thermal Resistance Junction-Ambient		6	°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	20	–	–	V
I _{DSS}	Zero Gate Voltage Drain Current(T _A =25°C)	V _{DS} =20V, V _{GS} =0V	–	–	1	μA
	Zero Gate Voltage Drain Current(T _A =125°C)	V _{DS} =16V, V _{GS} =0V	–	–	100	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	–	–	±1 00	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.2	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =4.5V, I _D =4A	–	12	15	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =3.3V, I _D =3A	–	13	16	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =2.5V, I _D =2A	–	14	17	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	–	864	–	pF
C _{oss}	Output Capacitance		–	136	–	pF
C _{rss}	Reverse Transfer Capacitance		–	121	–	pF
Q _g	Total Gate Charge	V _{DS} =10V I _D =4A, V _{GS} =4.5V	–	11	–	nC
Q _{gs}	Gate Source Charge		–	1.6	–	nC
Q _{gd}	Gate Drain Charge		–	3.6	–	nC
Switching Characteristics						
t _{d(on)}	Turn on Delay Time	V _{DD} =10V, I _D =1A, R _G =3.3Ω, V _{GS} =4.5V	–	10	–	ns
t _r	Turn on Rise Time		–	29	–	ns
t _{d(off)}	Turn Off Delay Time		–	23	–	ns
t _f	Turn Off Fall Time		–	38	–	ns
Source Drain Diode Characteristics						
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	–	0.77	1.2	V

Notes: ① Pulse width limited by maximum allowable junction temperature
②Pulse test ; Pulse width≤300μs, duty cycle≤2%.

Typical Characteristics



Typical Characteristics

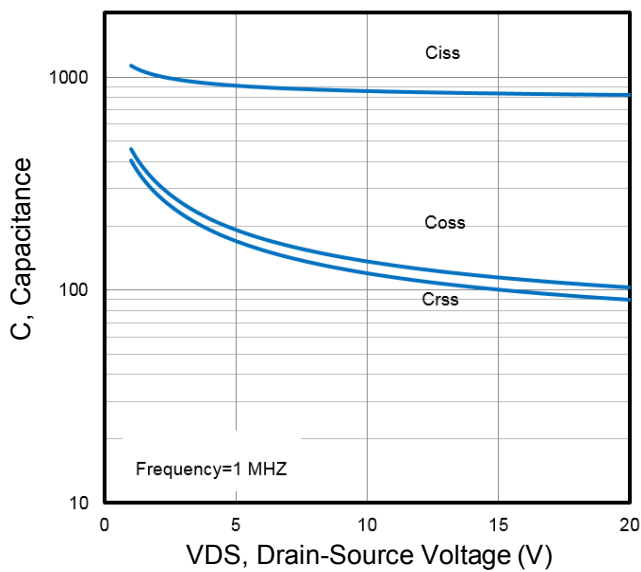


Fig7. Typical Capacitance Vs. Drain-Source Voltage

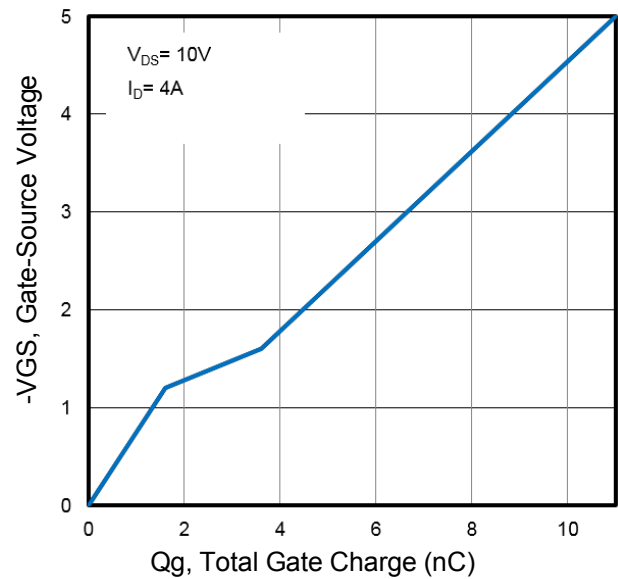
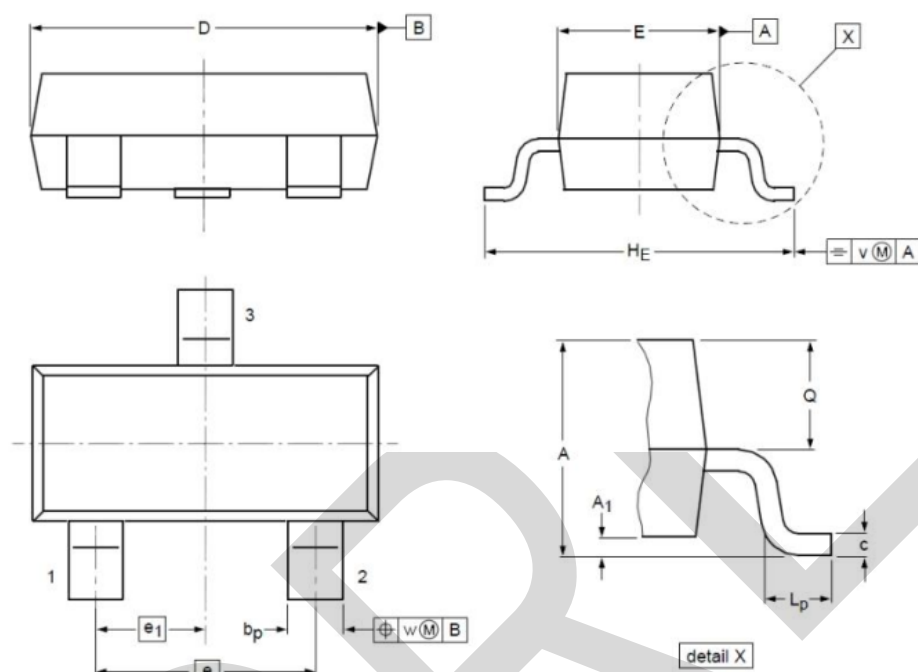


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

SOT23-3L PACKAGE INFORMATION



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	1.00	1.17	1.30	A₁	0.01	0.05	0.10
b_p	0.35	0.39	0.50	c	0.10	0.20	0.26
D	2.70	2.90	3.10	E	1.50	1.60	1.70
e	—	1.90	—	e₁	—	0.95	—
H_E	2.50	2.78	3.00	L_p	0.20	0.32	0.60
Q	0.23	0.27	0.33	v	—	0.20	—
w	—	0.20	—				