



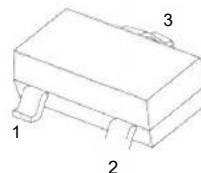
SI2319A

SOT-23 Plastic-Encapsulate MOSFETS

Features

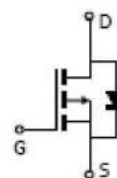
- $V_{DS}(V) = -40V$
- $R_{DS(ON)} < 70m\Omega$ ($V_{GS} = 10V$), $I_b = -4.4A$
- $R_{DS(ON)} < 95m\Omega$ ($V_{GS} = 4.5V$), $I_D = -3.5A$

SOT-23



1.GATE
2.SOURCE
3.DRAIN

Equivalent Circuit



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-40	V
Gate-Source Voltage	VGS	± 20	
Continuous Drain Current	ID	-4.4	A
Pulsed Diode Current	IDM	-12	
Continuous Source-Drain Current (Diode Conduction)	IS	-1.25	
Power Dissipation	PD	1.25	W
Thermal Resistance from Junction to Ambient ($t \geq 5s$)	RthJF	166	$^{\circ}C/W$
Operating Junction	TJ	150	$^{\circ}C$
Storage Temperature	TSTG	$-55^{\circ} \sim +150$	$^{\circ}C$

Static Electrical Characteristics (Ta=25°C Unless Otherwise Noted)

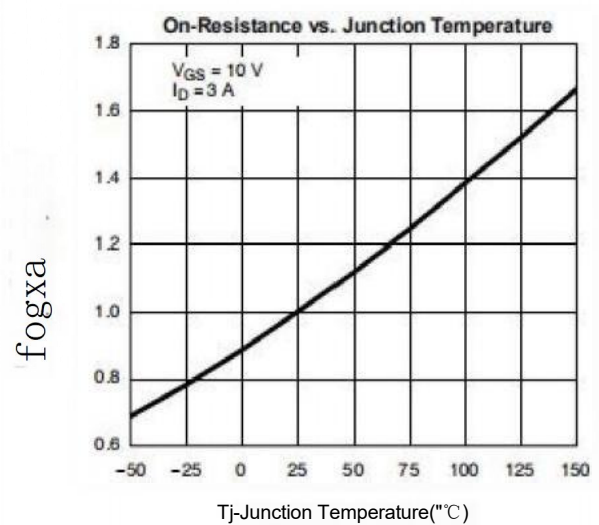
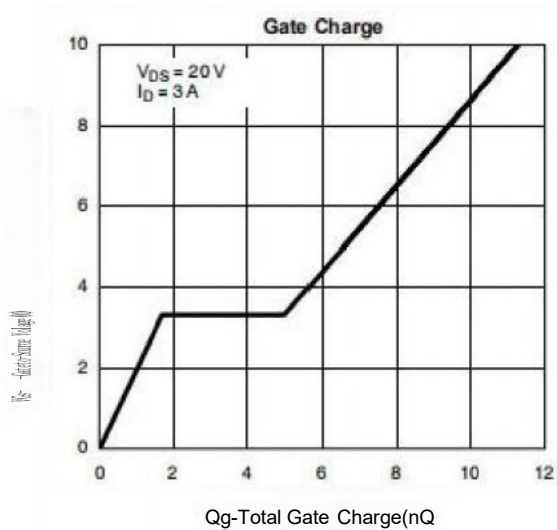
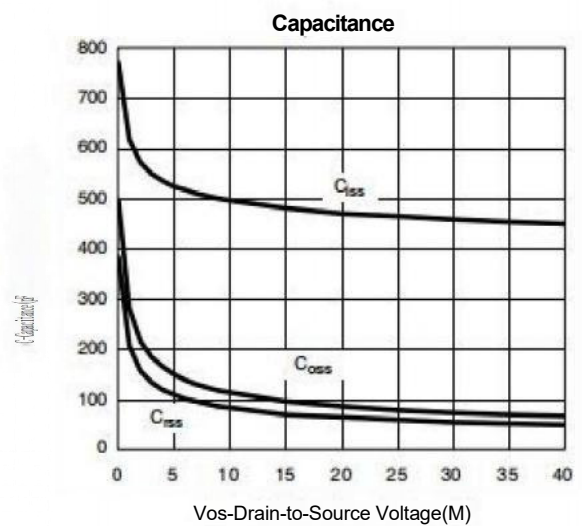
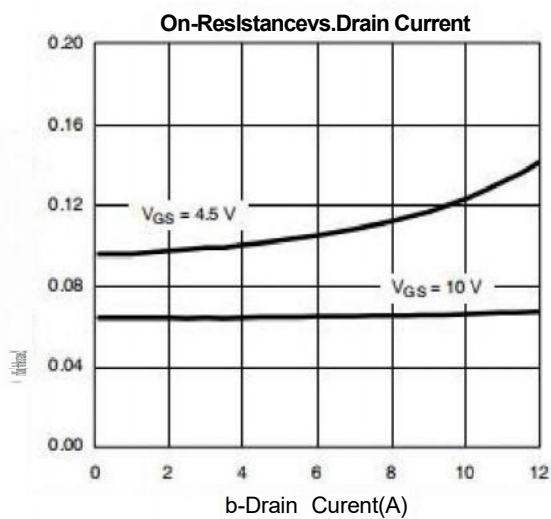
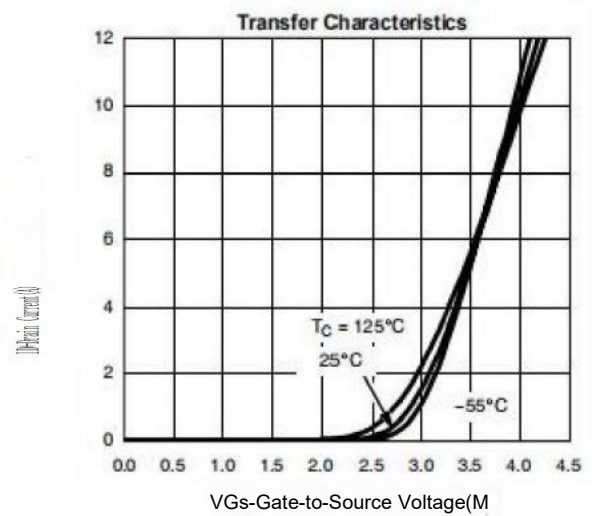
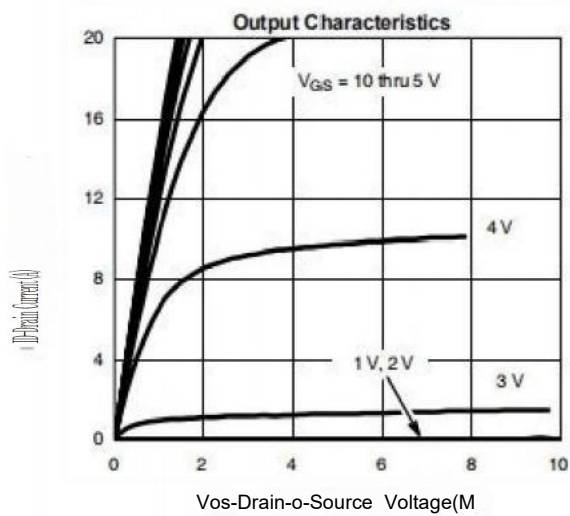
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V (BR) DSS	VGS=0V, ID=-250 μ A	-40			V
Gate-source threshold voltage	VGS(th)	VDS=VGS, ID=-250 μ A	-1		-3	V
Gate-source leakage	IGSS	VDS =0V, VGS=±20V			±100	nA
Zero gate voltage drain current	IDSS	VDS=-40V, VGS=0V			-1	μ A
Drain-source on-state resistancea	RDS(on)	VGS=-10V, ID=-4. 4A			70	m Ω
		VGS=-4. 5V, ID=-3. 5A			95	m Ω
Forward transconductancea	gfs	VDS=-5V, ID=-3A		7		S
Diode forward voltage	VSD	S=-1. 25A, VGS=0V		-0. 8	-1. 25	V
Dynamic						
Input capacitance	Ciss	VDS=-20V, VGS =0V, f=1MHz		470		pF
Output capacitance	Coss			85		pF
Reverse transfer capacitanceb	Crss			65		pF
Total gate charge	Qg	VDS=-20V, VGS=-10V, ID=-3A		11. 5	17	nC
Gate-source charge	Qgs			1. 8		nC
Gate-drain charge	Qgd			3. 3		nC
Gate resistance	Rg	f=1MHz		9		?
Switchingb						
Turn-on delay time	td(on)	VDS=-20V RL=20?, ID=-1A, VGEN=-4. 5V, Rg=6?		7	15	ns
Rise time	tr			15	25	ns
Turn-off delay time	td(off)			25	40	ns
Fall time	tf			25	42	ns
Drain-source body diode characteristics						
Continuous Source-Drain Diode Current	IS	Tc=25℃			-1. 25	A
Pulsed Diode forward Curren	ISM				-20	A

Note:

- 1.Repetitive Rating:Pulse width limited by maximum junction temperature.
- 2.Surface Mounted on FR4 Board,t<5 sec.
- 3.Pulse Test:Pulse Width $\leq$ 300 μ s,Duty Cycle $\leq$ 2%.
- 4.Guaranteed by design,not subject to production testing.

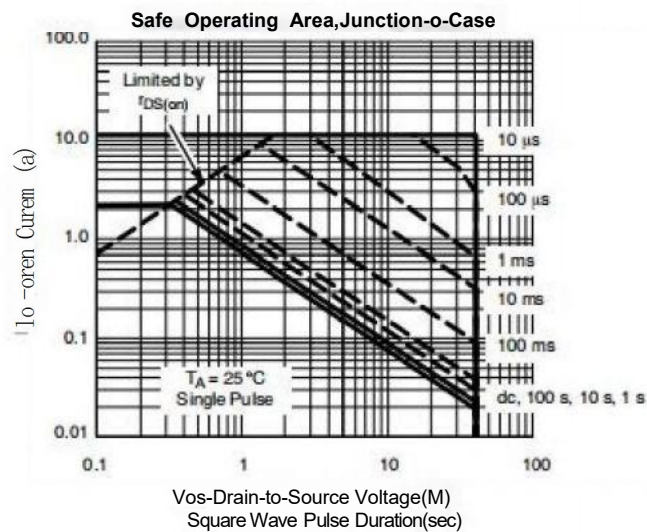
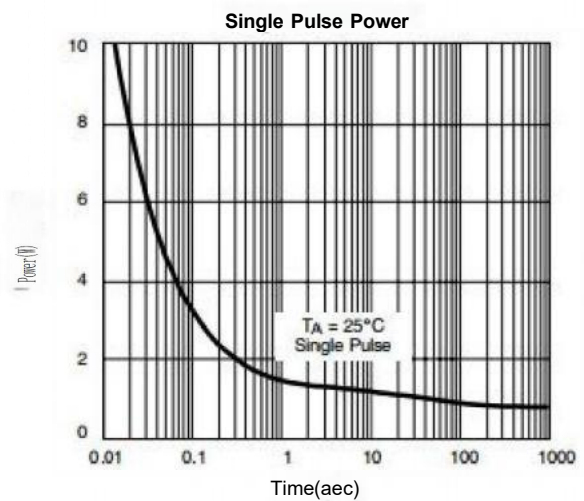
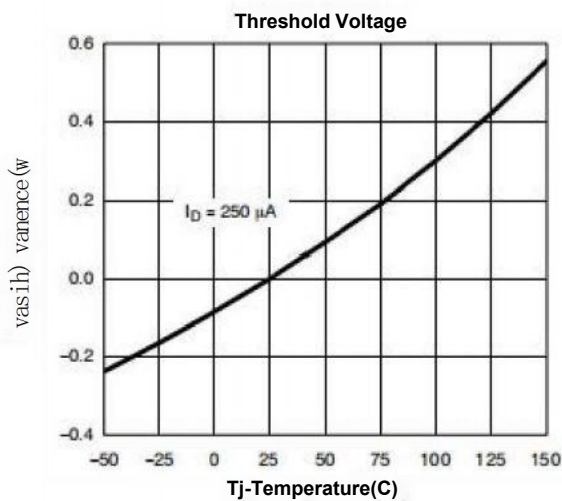
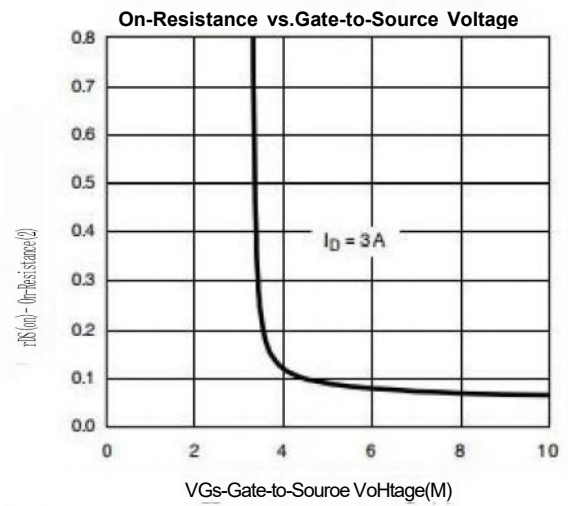
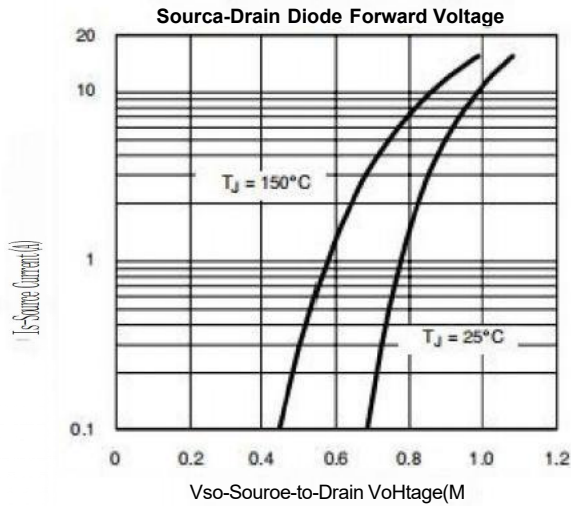
TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

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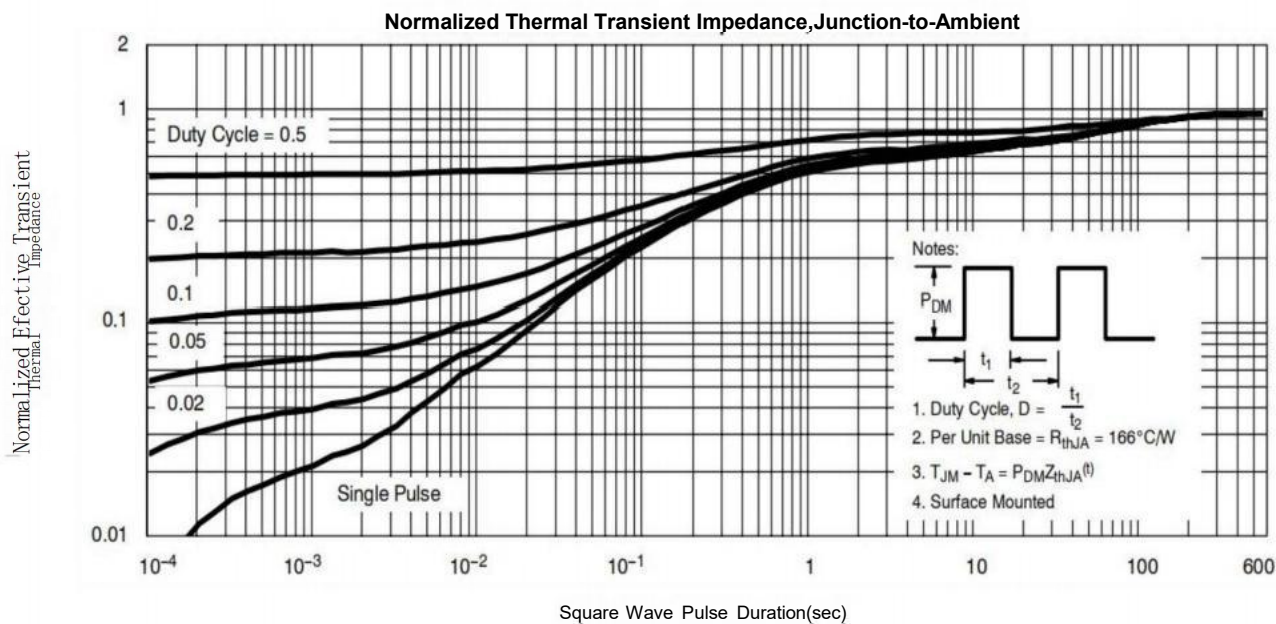
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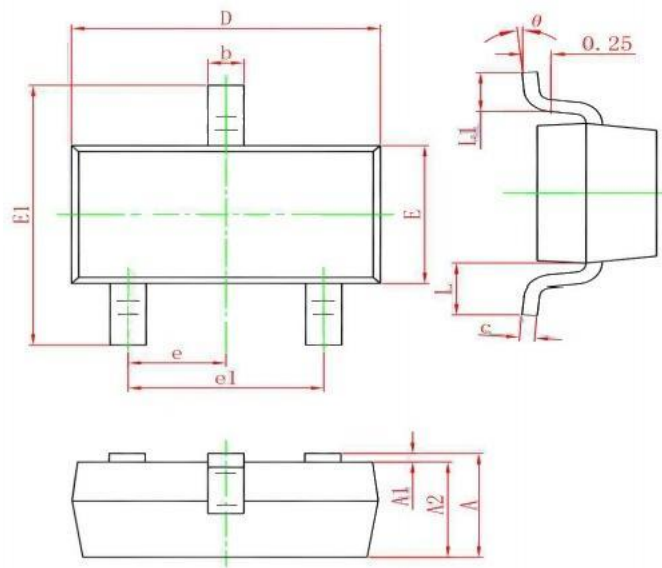


TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

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SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
C	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°