

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

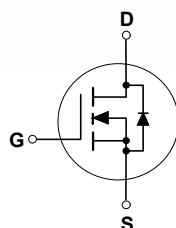
▶ Domestic	Part Number	SI2310A
▶ Overseas	Part Number	SI2310A
▶ Equivalent	Part Number	SI2310A

EV is the abbreviation of name EVVO

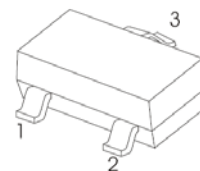
60V N-Channel MOSFET

■ Features

- $V_{DS} (V) = 60V$
- $I_D = 3A$
- $R_{DS(ON)} < 80m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 95m\Omega$ ($V_{GS} = 4.5V$)



SOT - 23



1. GATE
2. SOURCE
3. DRAIN

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_A = 25^\circ C$	I_D	3	A
$T_A = 70^\circ C$		2.3	
Pulsed Drain Current *	I_{DM}	10	
Power Dissipation $T_A = 25^\circ C$	P_D	1.38	W
Linear Derating Factor		0.01	W/ $^\circ C$
Thermal Resistance Junction-to-ambient	R_{thJa}	90	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

* 2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

60V N-Channel MOSFET

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			10	μA
		V _{DS} =48V, V _{GS} =0V, T _J =70°C			25	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3A			80	mΩ
		V _{GS} =4.5V, I _D =2A			95	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =3A		5		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		490	780	pF
Output Capacitance	C _{oss}			55		
Reverse Transfer Capacitance	C _{rss}			40		
Total Gate Charge	Q _g	V _{DS} =48V, I _D =3A, V _{GS} =4.5V		6	10	nC
Gate Source Charge	Q _{gs}			1.6		
Gate Drain Charge	Q _{gd}			3		
Turn-On DelayTime	t _{D(on)}	V _{GS} =10V, V _{DS} =30V, I _D =1A R _D =30Ω, R _{GEN} =3.3Ω		6		ns
Turn-On Rise Time	t _r			5		
Turn-Off DelayTime	t _{D(off)}			16		
Turn-Off Fall Time	t _f			3		
Body Diode Reverse Recovery Time	t _{rr}	I _S =3A, dI/dt=100A/μs		25		
Body Diode Reverse Recovery Charge	Q _{rr}	I _S =3A, dI/dt=100A/μs		26		nC
Diode Forward Voltage	V _{SD}	I _S =1.2A, V _{GS} =0V			1.2	V

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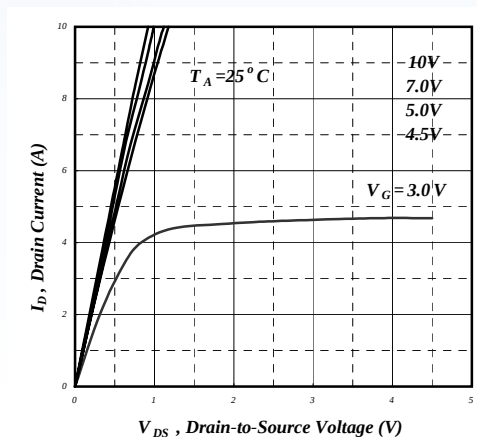


Fig 1. Typical Output Characteristics

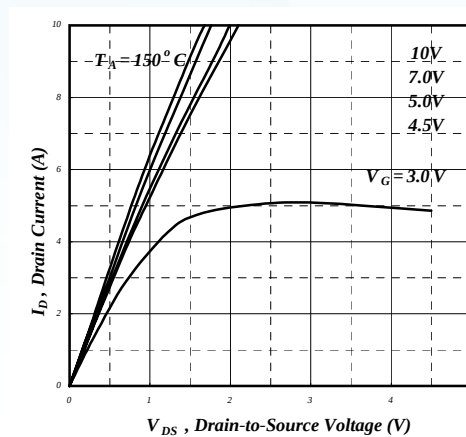


Fig 2. Typical Output Characteristics

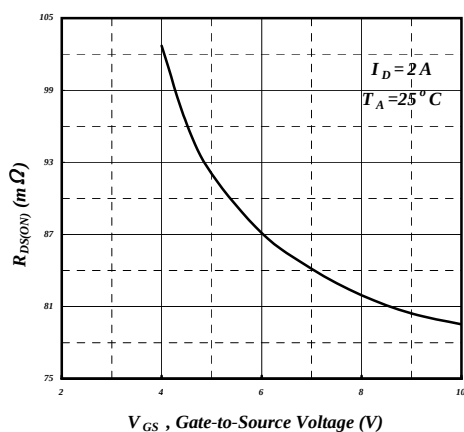


Fig 3. On-Resistance v.s. Gate Voltage

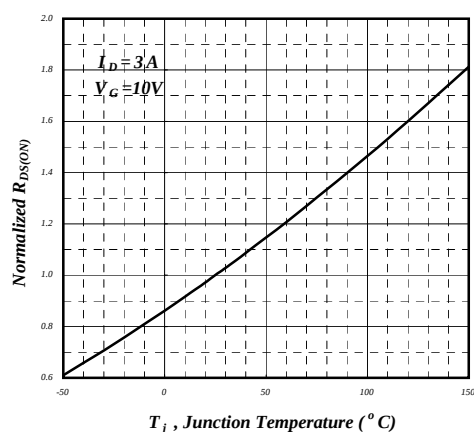


Fig 4. Normalized On-Resistance v.s. Junction Temperature

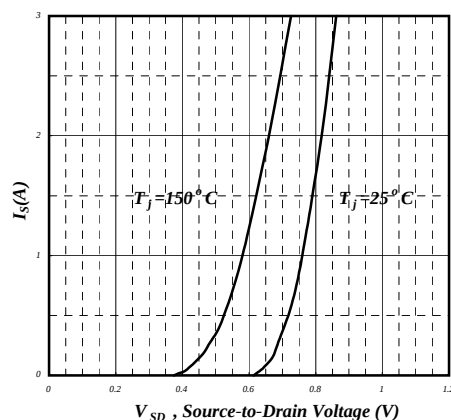


Fig 5. Forward Characteristic of Reverse Diode

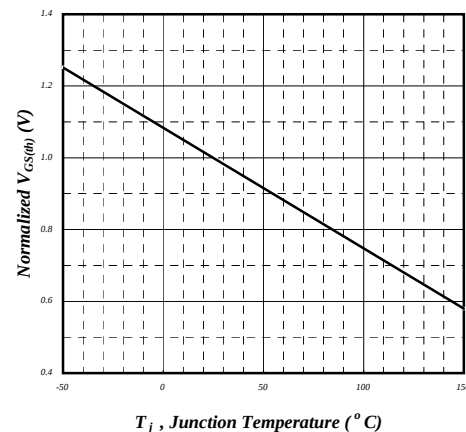


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

60V N-Channel MOSFET

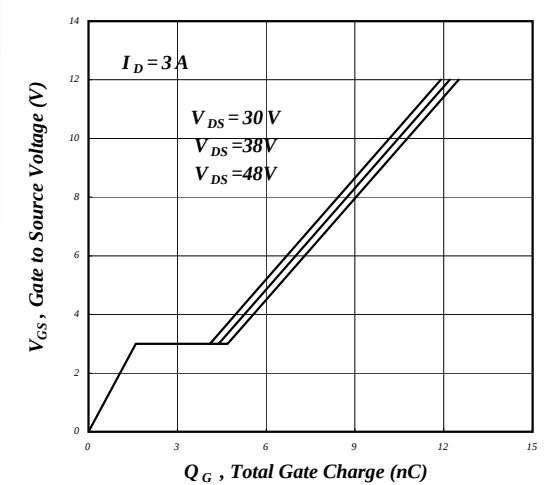


Fig 7. Gate Charge Characteristics

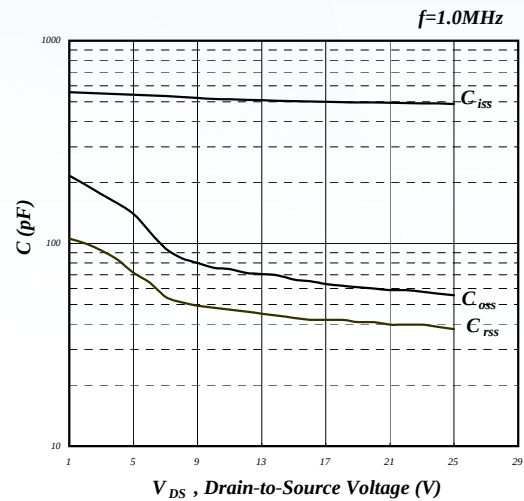


Fig 8. Typical Capacitance Characteristics

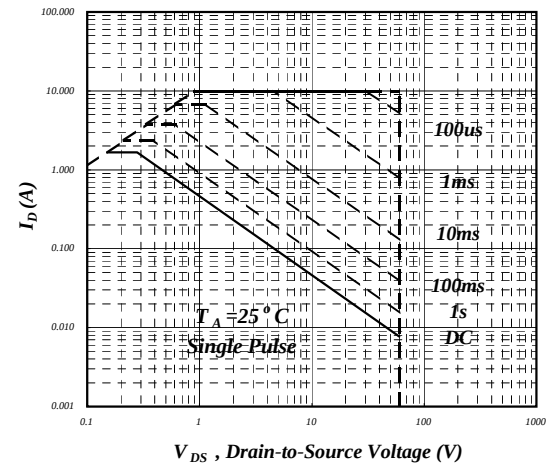


Fig 9. Maximum Safe Operating Area

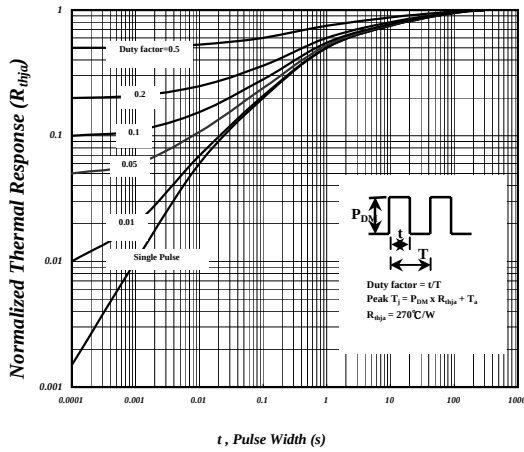
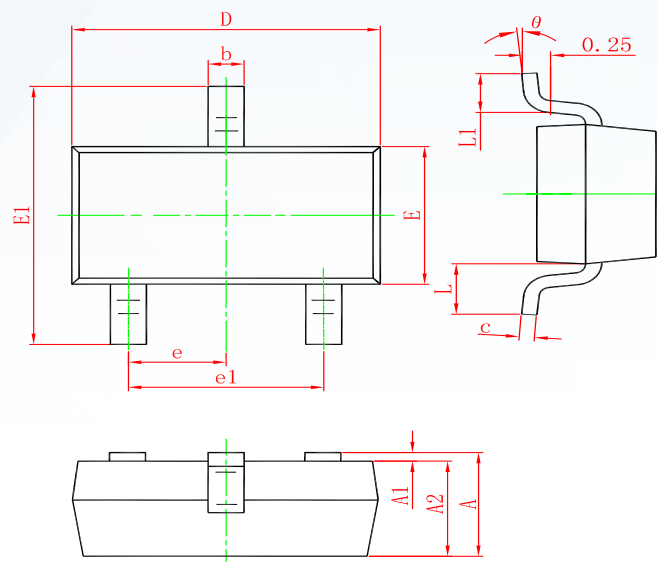


Fig 10. Effective Transient Thermal Impedance

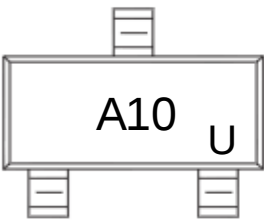
60V N-Channel MOSFET

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°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
SI2310A	SOT-23	3000	Tape and reel

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