

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	SI2317A
▶ Overseas	Part Number	SI2317A
▶ Equivalent	Part Number	SI2317A

EV is the abbreviation of name EVVO

1.Description

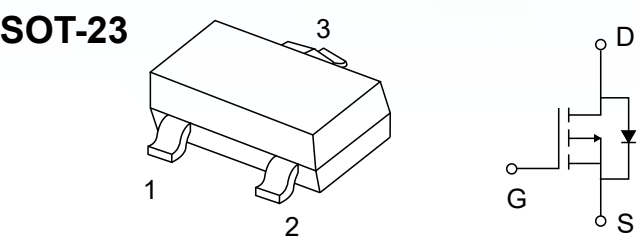
The SI2317A uses advanced trench technology to provide excellent $R_{DS(ON)}$, and low gate charge. This device is suitable for use as a load switch or in PWM applications.

2.Features

- $V_{DS(V)}=-20V$
- $R_{DS(ON)}<40m\Omega(V_{GS}=-4.5V), I_D=-4.2A$
- $R_{DS(ON)}<50m\Omega(V_{GS}=-2.5V), I_D=-3.4A$

3.Pinning information

Pin	Symbol	Description
1	G	GATE
2	S	SOURCE
3	D	DRAIN



4.Absolute Maximum Ratings $T_A=25^{\circ}C$

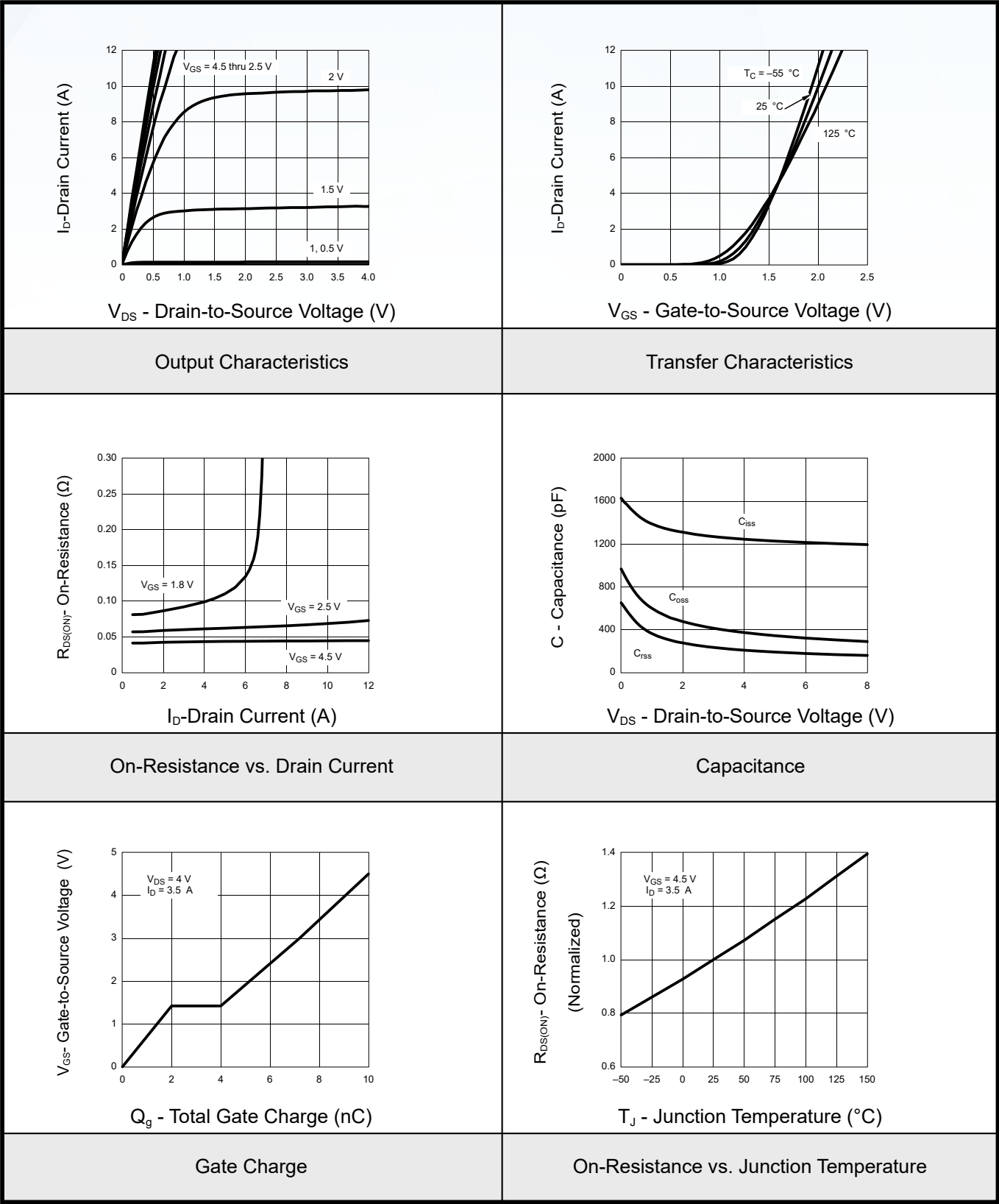
Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_A=25^{\circ}C$	I_D	-4.2	A
	$T_A=70^{\circ}C$		-3.4	
Pulsed Drain Current		I_{DM}	-10	
Power Dissipation	$T_A=25^{\circ}C$	P_D	1.38	W
	$T_A=70^{\circ}C$		0.8	
Thermal Resistance.Junction-to-Ambient		$R_{\theta JA}$	90	$^{\circ}C/W$
Operating junction and storage temperature range		T_J, T_{STG}	-55 to 150	$^{\circ}C$

5. Electrical Characteristics $T_A = 25^\circ\text{C}$

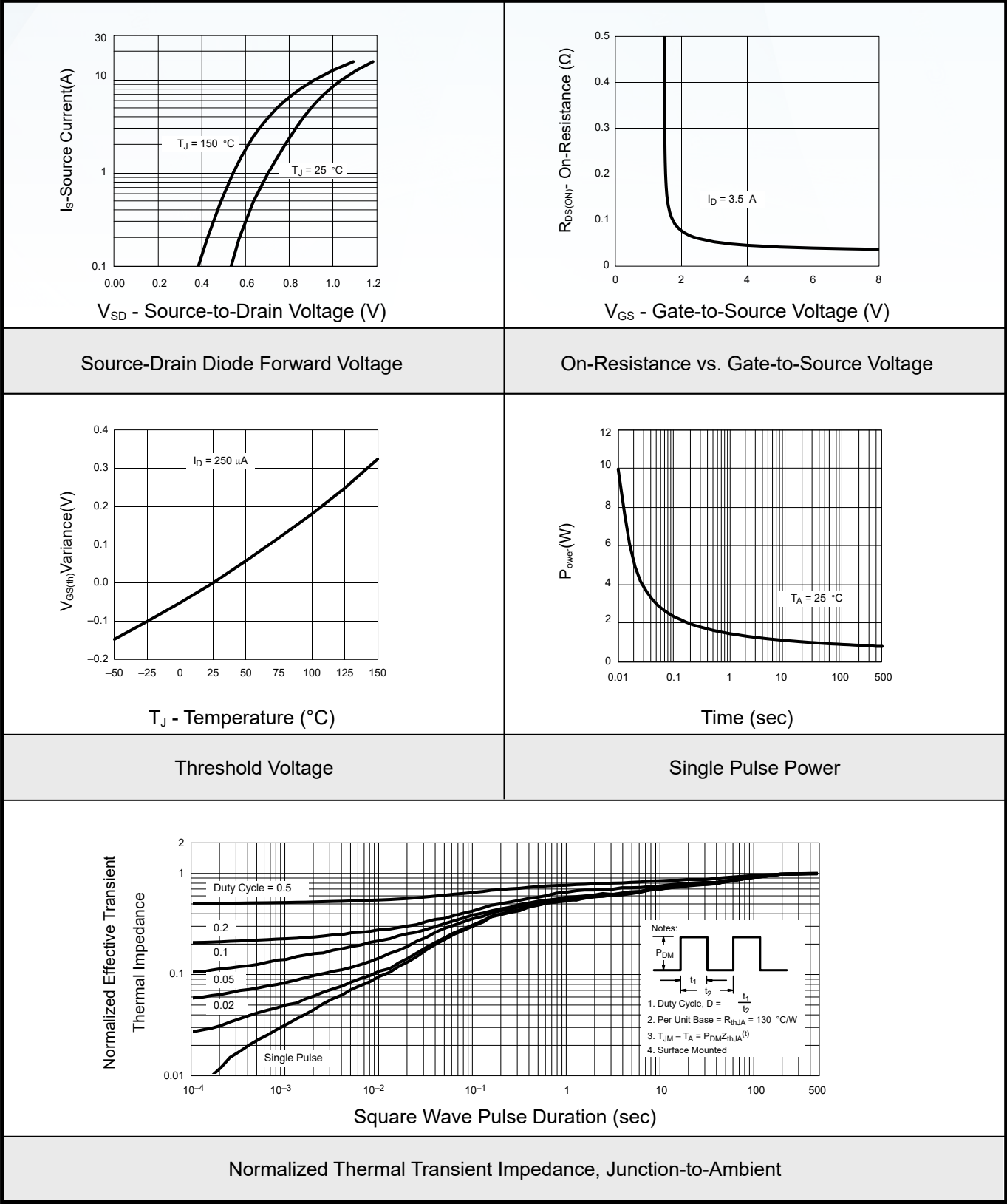
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = -10\mu\text{A}$, $V_{GS} = 0\text{V}$	-20			V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	-0.5			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
		$V_{DS} = -16\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 55^\circ\text{C}$			-10	μA
Gate-body leakage	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 12\text{V}$			± 100	nA
Drain-source on-state resistance	$R_{DS(ON)}$	$V_{GS} = -4.5\text{V}$, $I_D = -4.2\text{A}$			40	m Ω
		$V_{GS} = -2.5\text{V}$, $I_D = -3.4\text{A}$			50	
On-state drain current	$I_{D(ON)}$	$V_{DS} \leq -5\text{V}$, $V_{GS} = -4.5\text{V}$	-6			A
		$V_{DS} \leq -5\text{V}$, $V_{GS} = -2.5\text{V}$	-3			
Forward transconductance	g_{FS}	$V_{DS} = -5\text{V}$, $I_D = -2.8\text{A}$		9		S
Input capacitance *	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = -15\text{V}$, $f = 1\text{MHz}$		740		pF
Output capacitance *	C_{oss}			167		
Reverse transfer capacitance *	C_{rss}			126		
Total gate charge *	Q_g	$V_{DS} = -16\text{V}$		10.6		nC
Gate-source charge *	Q_{gs}	$V_{GS} = -4.5\text{V}$		2.32		
Gate-drain charge *	Q_{gd}	$I_D = -4.2\text{A}$		3.68		
Turn - On Delay Time	$t_{D(on)}$	$V_{DD} = -15\text{V}$, $R_L = 3.6\Omega$ $I_D = -4.2\text{A}$ $V_{GEN} = -10\text{V}$, $R_G = 6\Omega$		5.9		ns
Turn - On Rise Time	t_r			3.6		ns
Turn - Off Delay Time	$t_{D(off)}$			32.4		ns
Turn - Off Fall Time	t_f			2.6		ns
Continuous source current (diode conduction) *	I_S			-1.6		A
Diode forward voltage	V_{SD}	$I_S = -1.2\text{A}$, $V_{GS} = 0\text{V}$			-1.2	V

* Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.

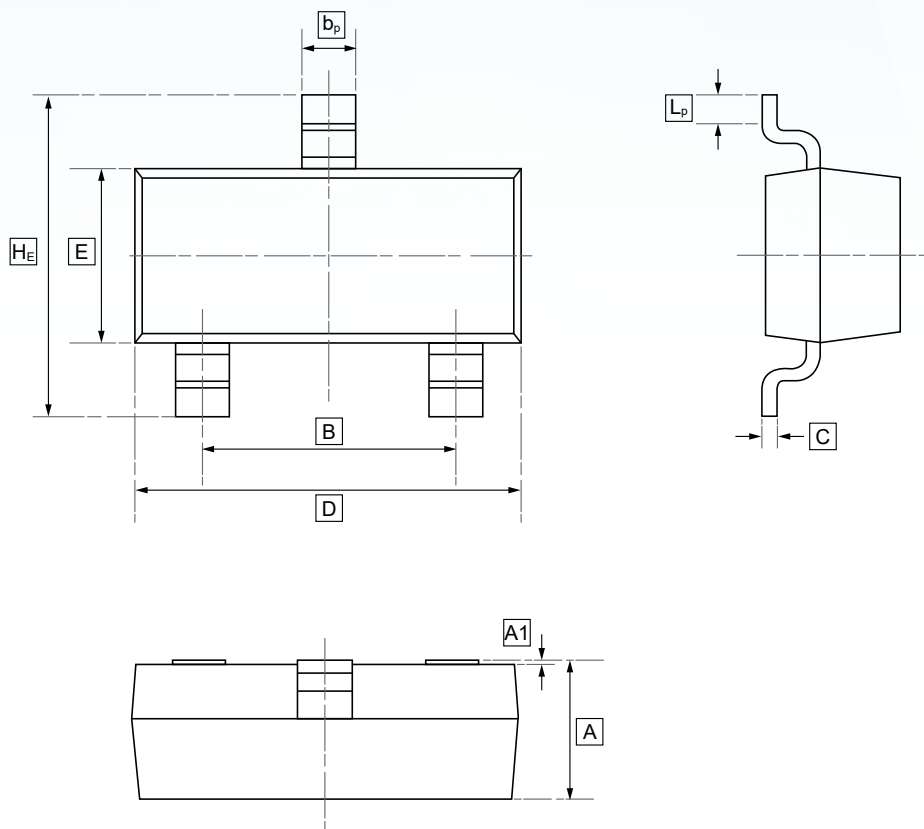
6.1Typical Characterisitics



6.2Typical Characterisitics



7.SOT-23 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b_p	C	D	E	H_E	A1	L_p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50

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