

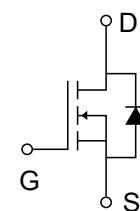
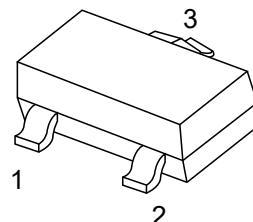
1. Description

The SI2302A uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

3. Pinning information

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

SOT-23



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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current *1	$T_A=25^\circ\text{C}$	3.6	A
		3.1	
Pulsed Drain Current	I_{DM}	10	
Power Dissipation	$T_A=25^\circ\text{C}$	1.25	W
		0.8	
Thermal Resistance.Junction- to-Ambient *1 *2	R_{thJA}	100	$^\circ\text{C}/\text{W}$
		166	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	

Notes :

*1.Surface Mounted on FR4 Board, $t \leq 5$ sec.

*2.Surface Mounted on FR4 Board.

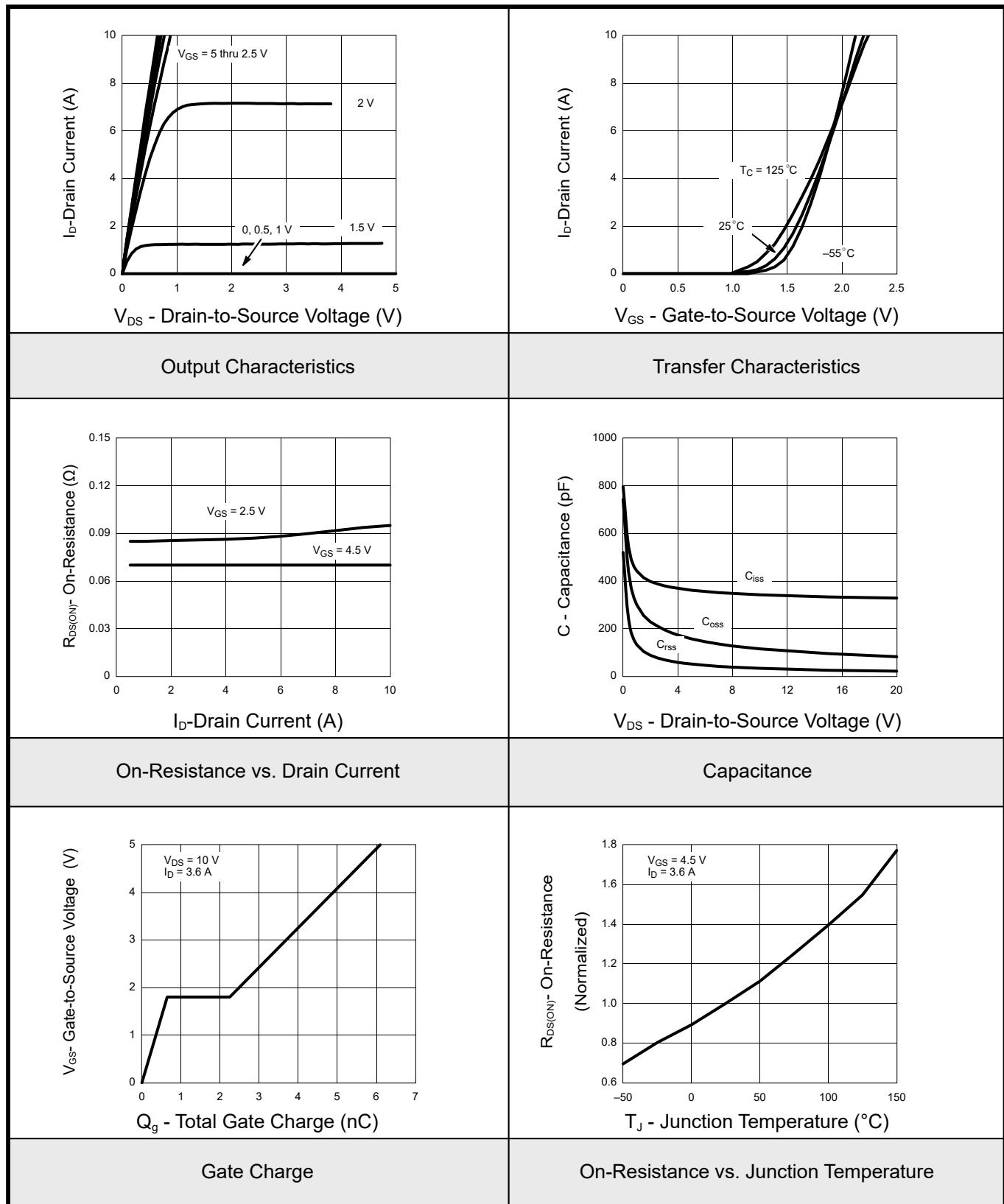


5.Electrical Characteristics $T_A = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			1	μA
		$V_{DS}=20\text{V}, V_{GS}=0\text{V}, T_J=55^\circ\text{C}$			10	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 8\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(\text{th})}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.62	0.95	1.9	V
Static Drain-Source On-Resistance	$R_{DS(\text{ON})}$	$V_{GS}=4.5\text{V}, I_D=3.6\text{A}$			45	$\text{m}\Omega$
		$V_{GS}=2.5\text{V}, I_D=3.1\text{A}$			60	
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}, I_D=3.6\text{A}$		8		S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$		300		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			80		
Total Gate Charge	Q_g	$V_{DS}=10\text{V}$ $V_{GS}=4.5\text{V}$ $I_D=3.6\text{A}$		4	10	nC
Gate Source Charge	Q_{gs}			0.65		
Gate Drain Charge	Q_{gd}			1.5		
Turn-On Delay Time	$t_{D(\text{on})}$	$V_{GS}=4.5\text{V}, V_{DS}=10\text{V}$ $R_L=5.5\Omega, R_{\text{GEN}}=6\Omega$ $I_D=3.6\text{A}$		7	15	ns
Turn-On Rise Time	t_r			55	80	
Turn-Off Delay Time	$t_{D(\text{off})}$			16	60	
Turn-Off Fall Time	t_f			10	25	
Continuous Source Current (Diode Conduction)	I_s			1.6		A
Diode Forward Voltage	V_{SD}	$I_s=1.6\text{A}, V_{GS}=0\text{V}$		0.76	1.2	V

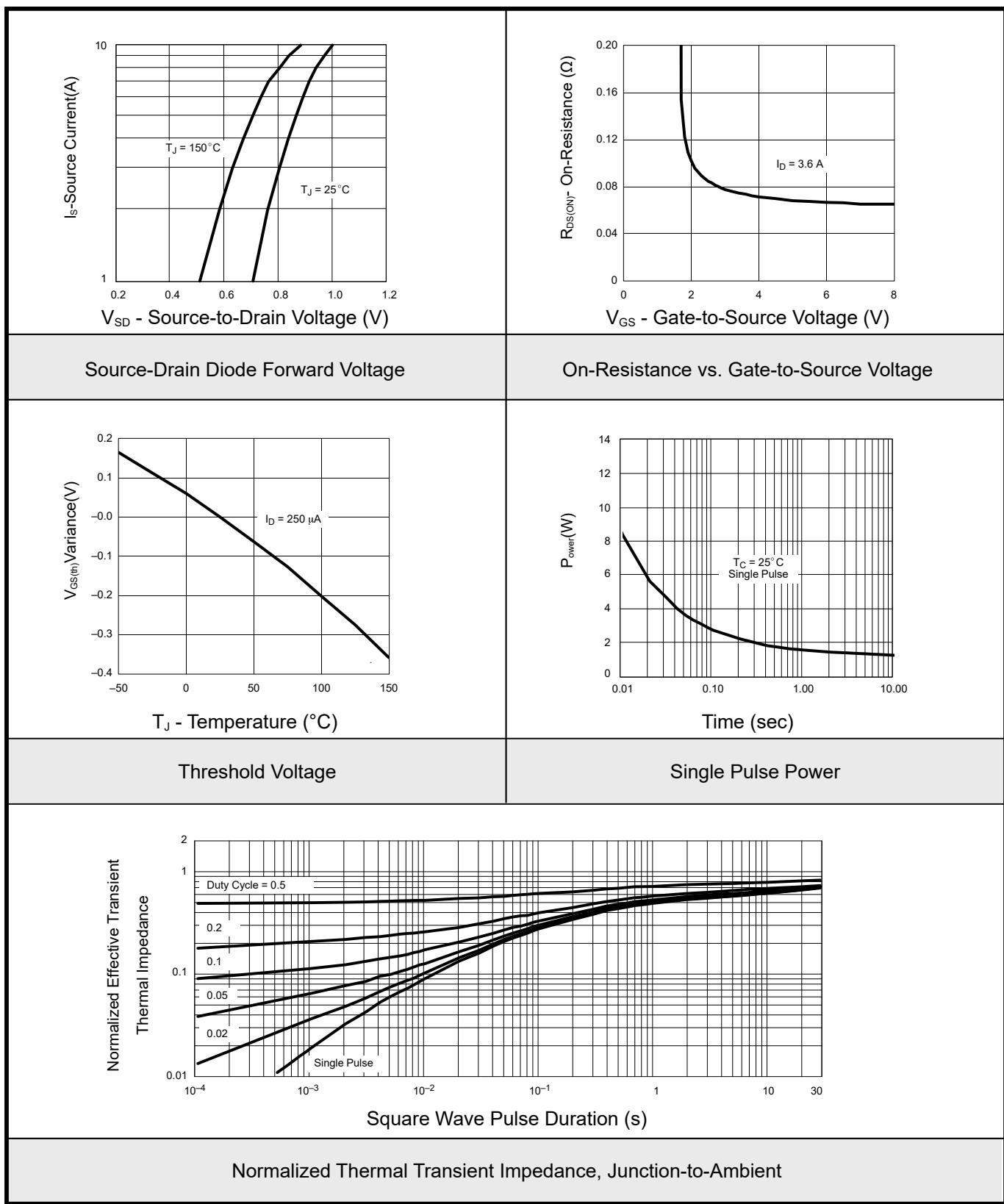
* Pulse test: PW ≤300us duty cycle≤ 2%.

6.1 Typical Characteristics



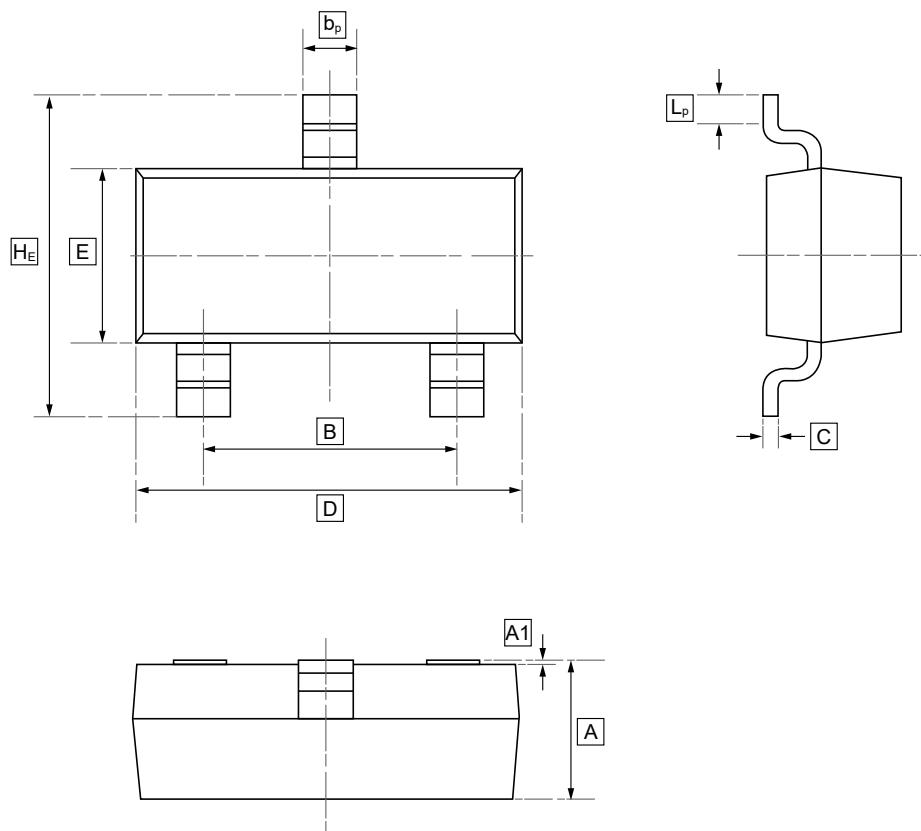


6.2 Typical Characteristics





7.SOT-23 Package Outline Dimensions

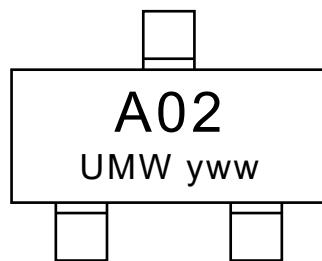


DIMENSIONS (mm are the original dimensions)

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



8.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SI2302A	SOT-23	3000	Tape and reel



9.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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