

1.Features

- $V_{(BR)DSS}=20V$
- $I_D=6A$
- $R_{DS(ON)}<25m\Omega(V_{GS}=4.5V)$
- $R_{DS(ON)}<34m\Omega(V_{GS}=2.5V)$
- TrenchFET Power MOSFET

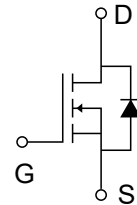
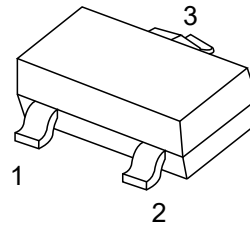
2.Applications

- Battery protection
- Load switch
- Power management

3.Pinning information

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

SOT-23



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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	6	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	312.5	$^{\circ}C/W$
Operating Junction	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}C$



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	20			V
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=50\mu A$	0.4		1	V
Gate-body leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Drain-source on-state resistance ^a	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6A$		21	25	m Ω
		$V_{GS}=2.5V, I_D=5.2A$		28	34	m Ω
Forward transconductance ^a	g_{FS}	$V_{DS}=5V, I_D=3.6A$		8		S
Diode forward voltage	V_{SD}	$I_S=0.94A, V_{GS}=0V$		0.74	1.2	V
Dynamic						
Total gate charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=3.6A$		7.7	10	nC
Gate-source charge	Q_{gs}			0.32		nC
Gate-drain charge	Q_{gd}			2.1		nC
Input capacitance ^b	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		574		pF
Output capacitance ^b	C_{oss}			70		pF
Reverse transfer capacitance ^b	C_{rss}			60		pF
Switching ^b						
Turn-on delay time	$t_{D(on)}$	$V_{DD}=10V$ $R_L=5.5\Omega, I_D\approx 3.6A$ $V_{GEN}=4.5V, R_G=6\Omega$		78.7		ns
Rise time	t_r			128		ns
Turn-off delay time	$t_{D(off)}$			453		ns
Fall time	t_f			80.9		ns

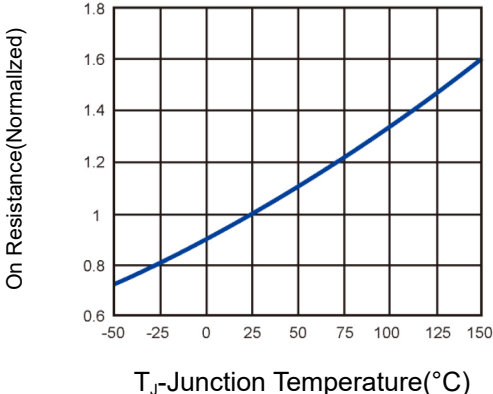
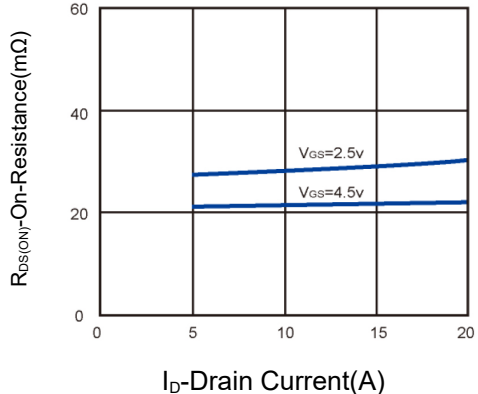
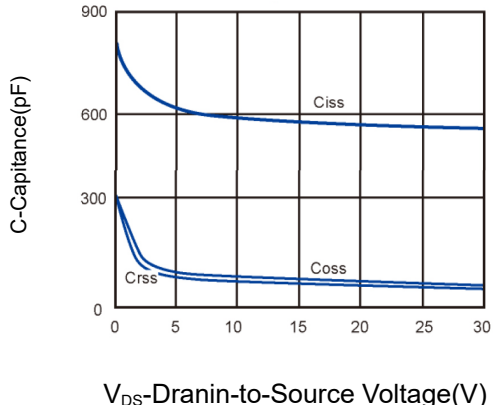
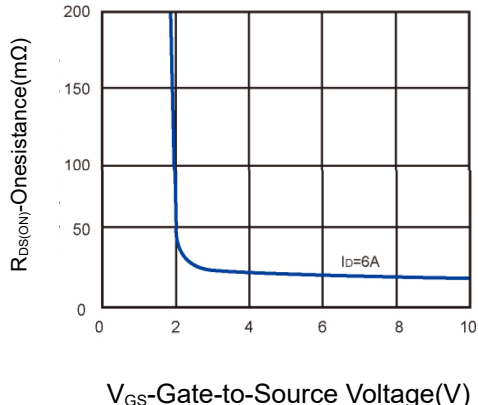
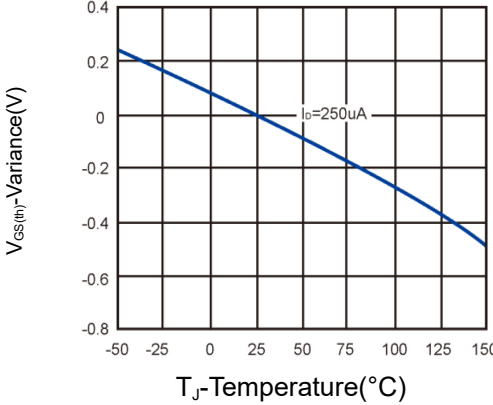
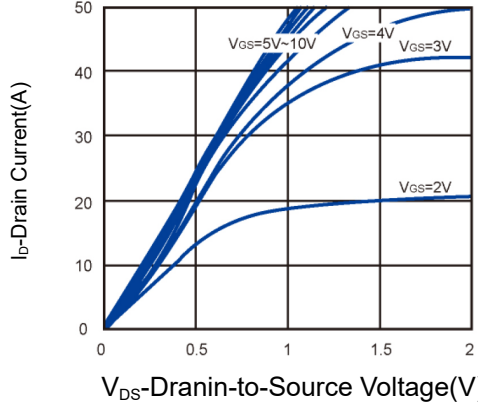
Notes :

a. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

b. These parameters have no way to verify

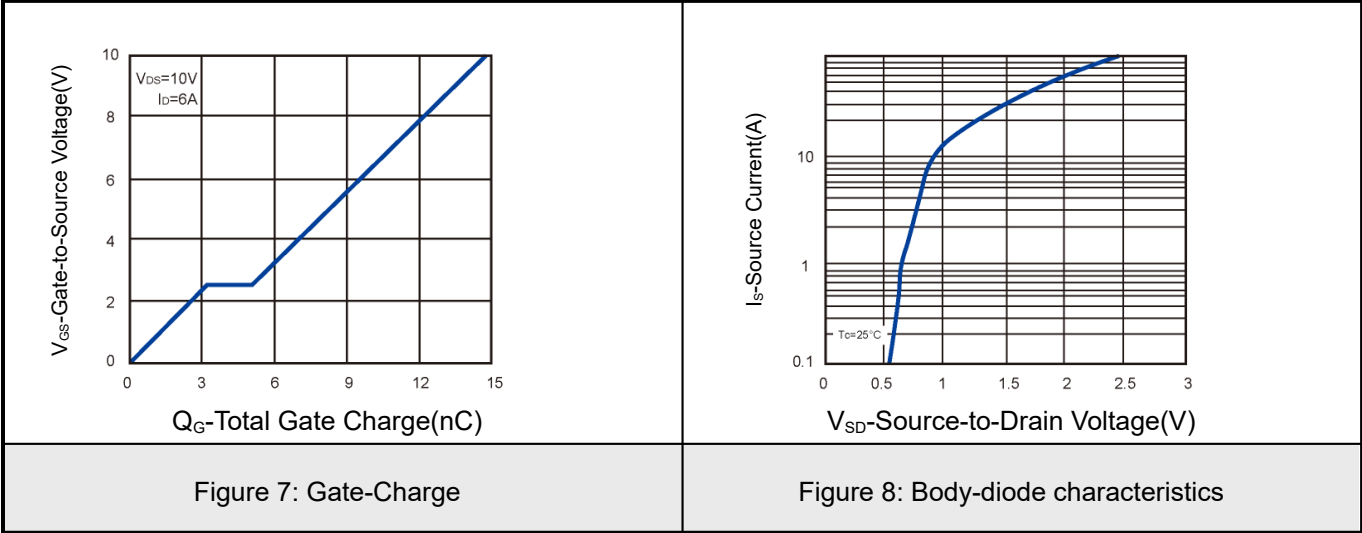


6.1Typical Characterisitics

	
Figure 1: On Resistance vs. Junction Temperature	Figure 2: On Resistance vs. Drain Current
	
Figure 3: Capacitance	Figure 4: On Resistance vs. Gate-to-Source Voltage
	
Figure 5: Threshold Voltage	Figure 6: On-Region Characteristics

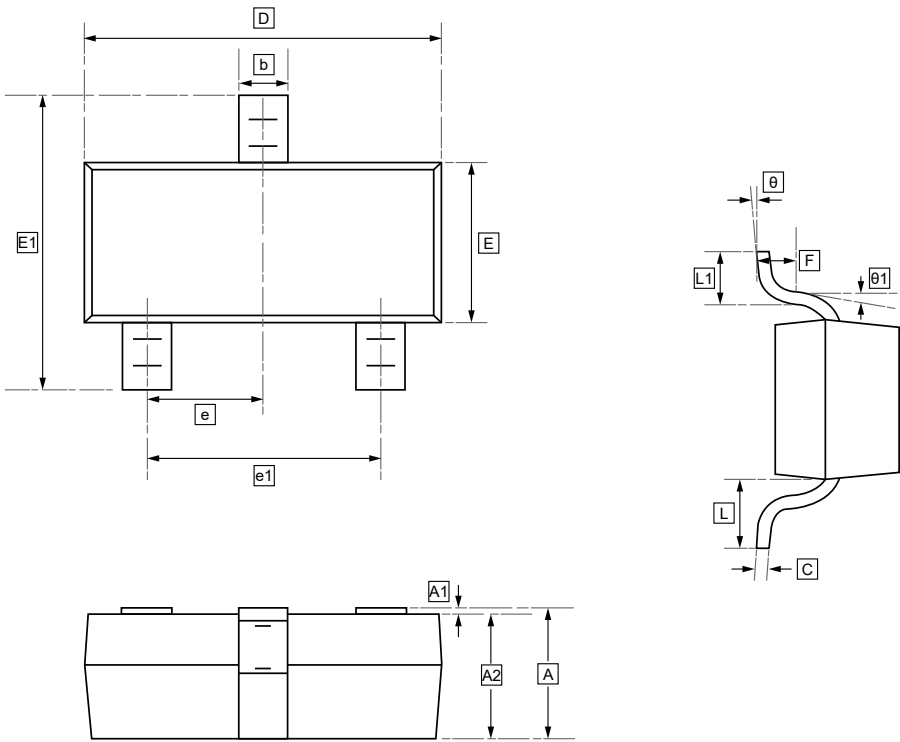


6.2Typical Characterisitics





7.SOT-23 Package Outline Dimensions



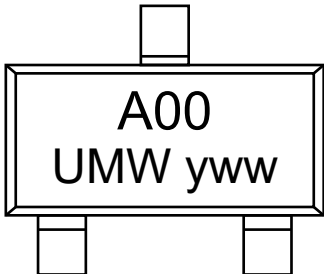
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	C	D	E	E1	e	e1	L	L1
Min	0.90	0.00	0.90	0.30	0.08	2.80	1.20	2.25	0.95	1.80	0.55	0.30
Max	1.15	0.10	1.05	0.50	0.15	3.00	1.40	2.55	TYP.	2.00	REF	0.50

Symbol	F	θ	θ1
Min	0.25	0°	2°
Max		8°	12°



8.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SI2300A	SOT-23	3000	Tape and reel



9.Disclaimer

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