UMW SI2328A

100V N-Channel MOSFET

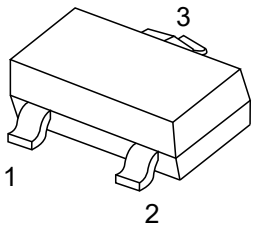
1.Features

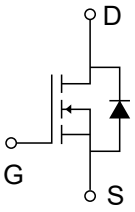
- $V_{DS(V)}$=100V
- I_D=1.5A
- $R_{DS(ON)}$<245mΩ(V_{GS}=10V)
- $R_{DS(ON)}$<265mΩ(V_{GS}=4.5V)

2.Pinning information

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

SOT-23





3.Absolute Maximum Ratings T_A= 25°C

Parameter		Symbol	5s	Steady State	Units
Drain-Source Voltage		V_{DS}	100		V
Gate-Source Voltage		V_{GS}	±20		
Continuous Drain Current *1	T_C=25°C	I_D	1.5	1.15	A
	T_C=70°C		1.2	0.92	
Pulsed Drain Current *2		I_{DM}	6		
Avalanche Current *2	L=0.1mH	I_{AS}	6		
Single Avalanche Energy		E_{AS}	1.8		mJ
Power Dissipation *1	T_C=25°C	P_D	1.25	0.73	W
	T_A=70°C		0.80	0.47	
Thermal Resistance.Junction- to-Ambient *1	t≤5 sec	R_{thJA}	100		°C/W
	Steady State		170		
Thermal Resistance.Junction-to-Foot		R_{thJF}	55		
Junction Temperature		T_J	-55 to 150		°C
Storage Temperature Range		T_{STG}	-55 to 150		

*1 Surface Mounted on 1” x 1” FR4 Board.

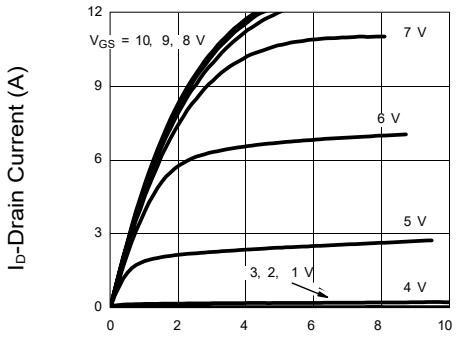
*2 Pulse width limited by maximum junction temperature.

4.Electrical Characteristics T_A= 25°C

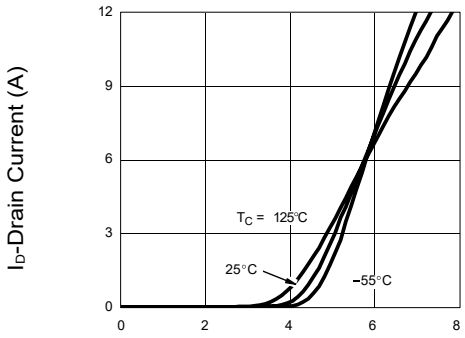
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{DSS}	I_D=1mA, V_{GS}=0V,	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
		V_{DS}=100V,V_{GS}=0V,T_A=70°C			75	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2		4	V
On-State Drain Current *1	$I_{D(ON)}$	V_{DS}≥15V, V_{GS}=10V	6			A
Static Drain-Source On-Resistance *1	$R_{DS(ON)}$	V_{GS}=10V, I_D=1.5A			245	mΩ
		V_{GS}=4.5V, I_D=1A			265	mΩ
Forward Transconductance *1	g_{FS}	V_{DS}=15V, I_D=1.5A		4		S
Gate Resistance	R_g		0.5		2.4	Ω
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=1.5A		3.3	4	nC
Gate Source Charge	Q_{gs}			0.47		
Gate Drain Charge	Q_{gd}			1.45		
Turn-On DelayTime	$t_{D(on)}$	I_D=0.2A, V_{DS}=50V V_{GEN}=10V R_L=33Ω, R_G=6Ω		7	11	ns
Turn-On Rise Time	t_r			11	17	
Turn-Off DelayTime	$t_{D(off)}$			9	15	
Turn-Off Fall Time	t_f			10	15	
Body Diode Reverse Recovery Time	t_{rr}	I_F=1.5A, dI/dt=100A/μs		50	100	
Maximum Body-Diode Continuous Current	I_S				1	A
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V		0.8	1.2	V

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

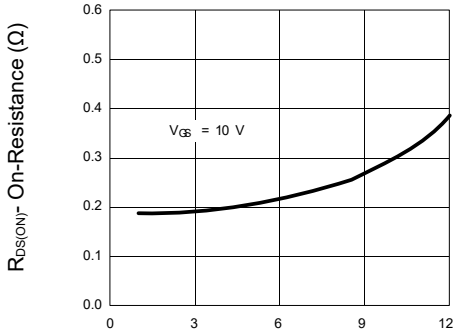
5.1Typical Characterisitics



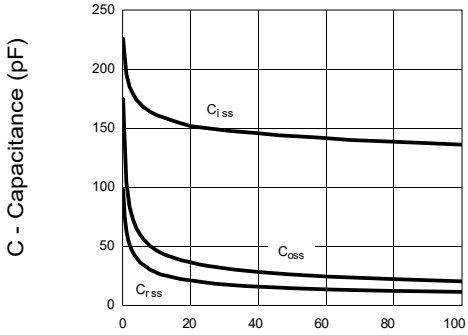
Output Characteristics



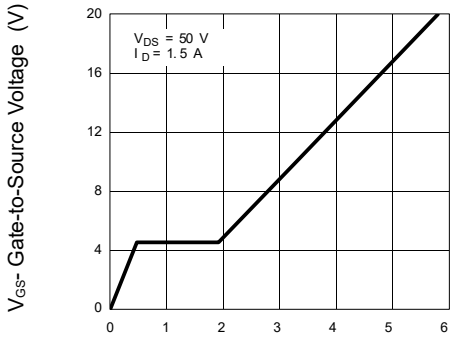
Transfer Characteristics



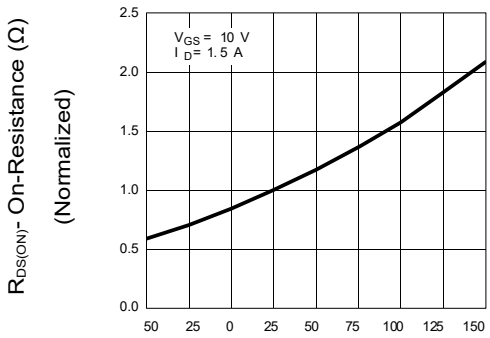
On-Resistance vs. Drain Current



Capacitance

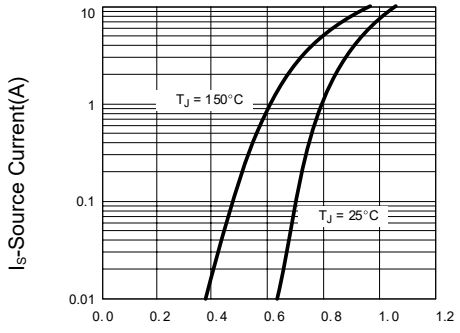


Gate Charge



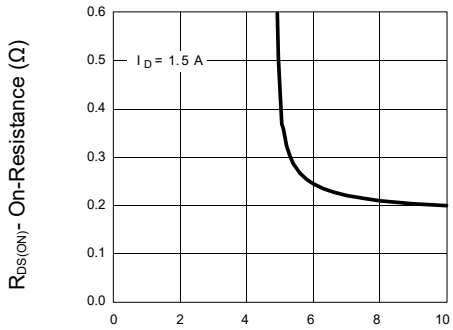
On-Resistance vs. Junction Temperature

5.2Typical Characterisitics



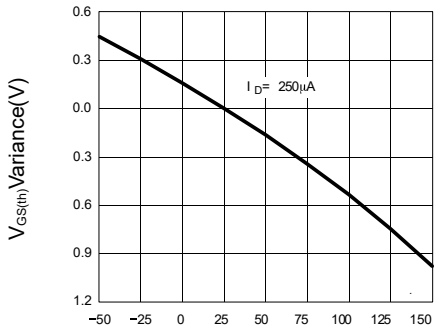
V_{SD} - Source-to-Drain Voltage (V)

Source-Drain Diode Forward Voltage



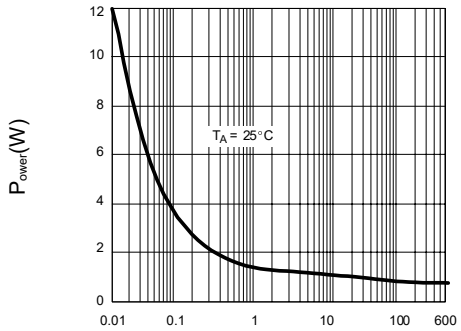
V_{GS} - Gate-to-Source Voltage (V)

On-Resistance vs. Gate-to-Source Voltage



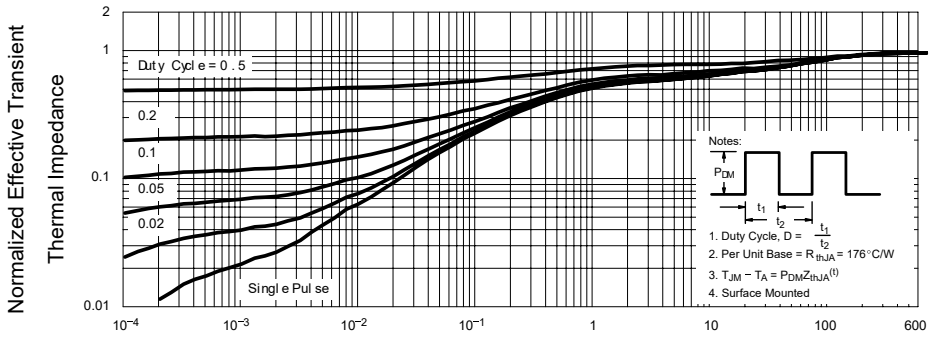
T_J - Temperature (°C)

Threshold Voltage



Time (sec)

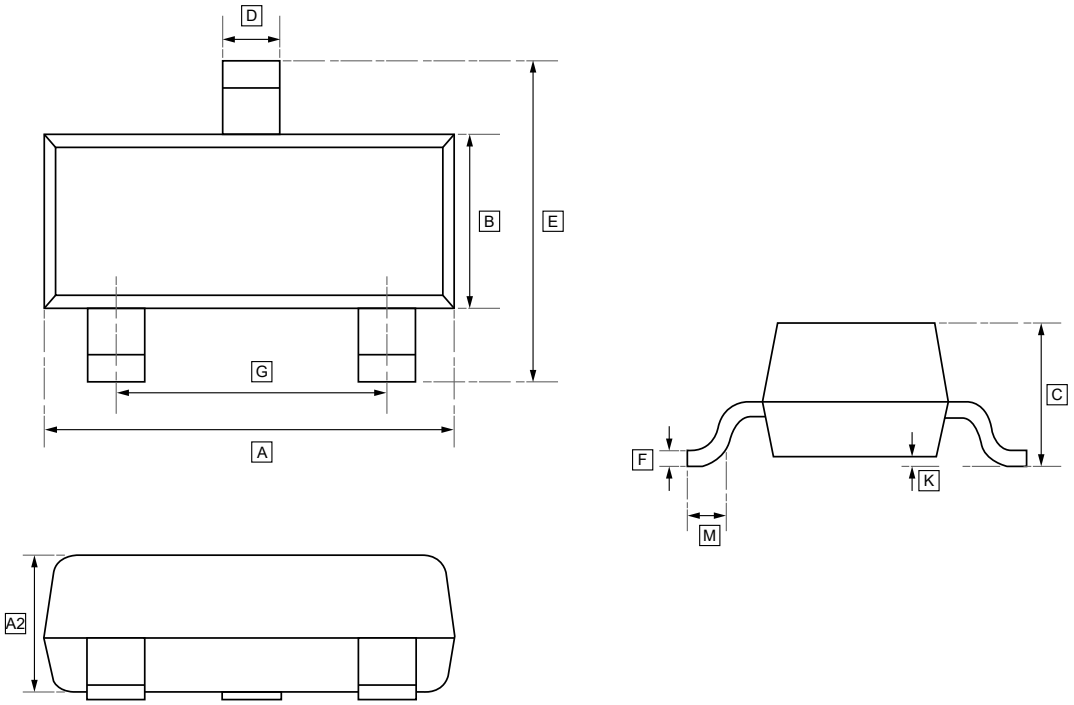
Single Pulse Power



Square Wave Pulse Duration (sec)

Normalized Thermal Transient Impedance, Junction-to-Ambient

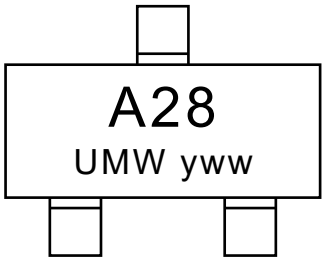
6.SOT-23 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	B	C	D	E	G	K	M	A2	F
Min	2.80	1.20	0.90	0.32	2.25	1.80	0.00	0.30	0.95	0.095
Max	3.04	1.40	1.10	0.55	2.55	2.00	0.10	-	1.05	0.115

7.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SI2328A	SOT-23	3000	Tape and reel

8.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.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

Unless explicitly stated in writing, UMW products are not intended for use in medical, life-saving, or life-sustaining applications, nor for any other applications where product failure could result in personal injury or death. If customers use or sell the product for such applications without explicit authorization, they assume all associated risks.

When reselling, applying, or exporting, please comply with export control laws and regulations of China, the United States, the United Kingdom, the European Union, and other relevant countries, regions, and international organizations.

This document and any actions by UMW do not grant any intellectual property rights, whether express or implied, by estoppel or otherwise. The product names and marks mentioned herein may be trademarks of their respective owners.