UMW SI2328A

100V N-Channel MOSFET

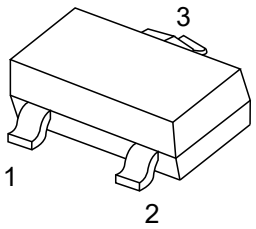
1.Features

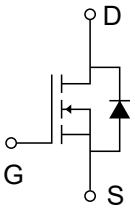
- $V_{DS(V)}$=100V
- I_D=1.5A
- $R_{DS(ON)}$<245mΩ(V_{GS}=10V)
- $R_{DS(ON)}$<265mΩ(V_{GS}=4.5V)

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.

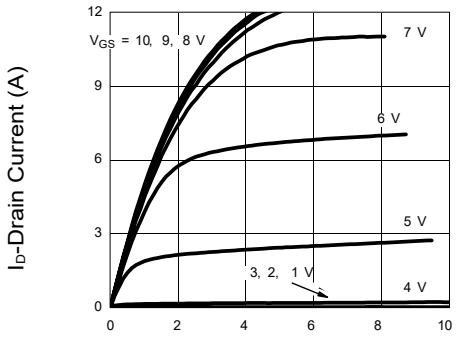
*2 Pulse width limited by maximum junction temperature.

4.Electrical Characteristics T_A= 25°C

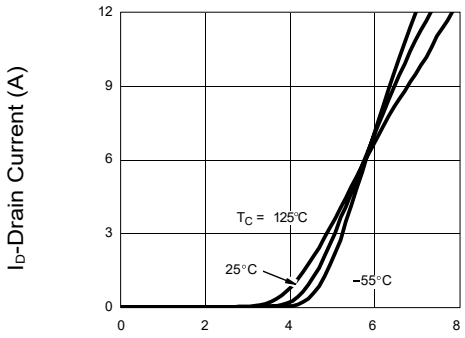
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{DSS}	I_D=1mA, V_{GS}=0V,	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
		V_{DS}=100V,V_{GS}=0V,T_A=70°C			75	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold 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%.

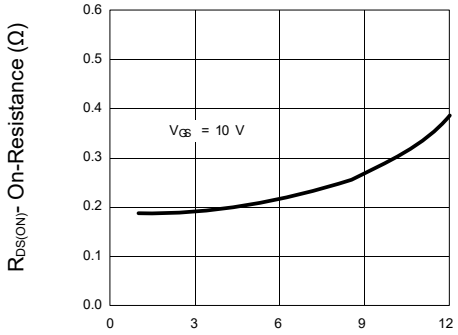
5.1Typical Characterisitics



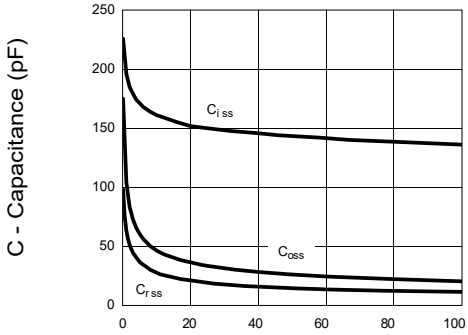
Output Characteristics



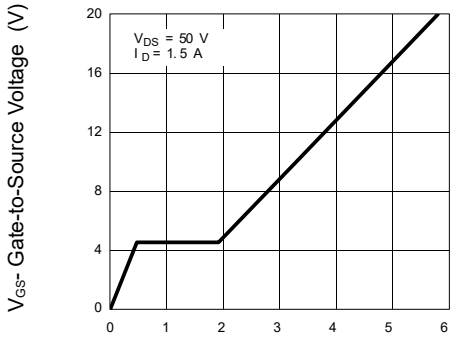
Transfer Characteristics



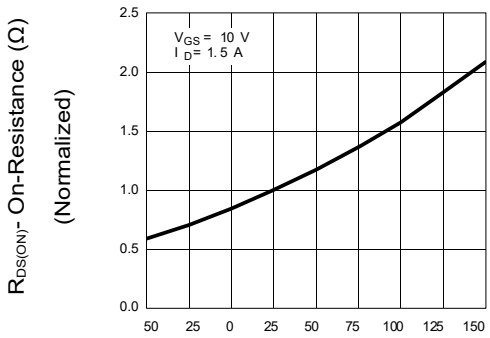
On-Resistance vs. Drain Current



Capacitance

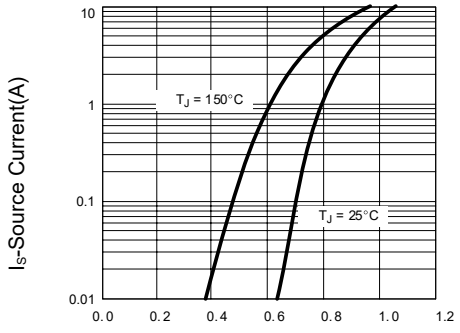


Gate Charge



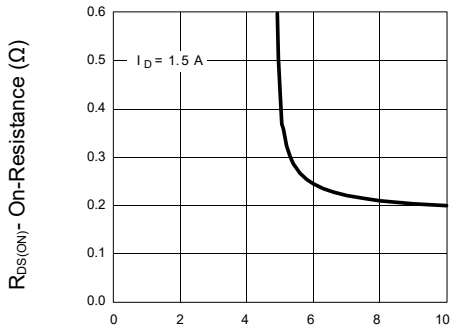
On-Resistance vs. Junction Temperature

5.2Typical Characterisitics



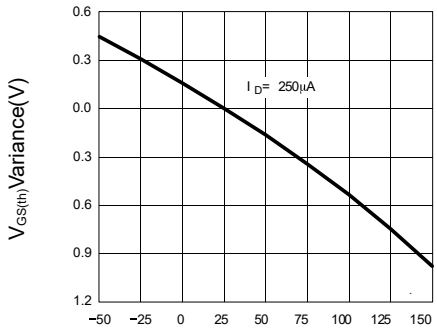
V_{SD} - Source-to-Drain Voltage (V)

Source-Drain Diode Forward Voltage



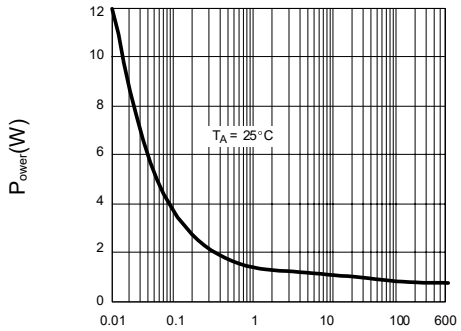
V_{GS} - Gate-to-Source Voltage (V)

On-Resistance vs. Gate-to-Source Voltage



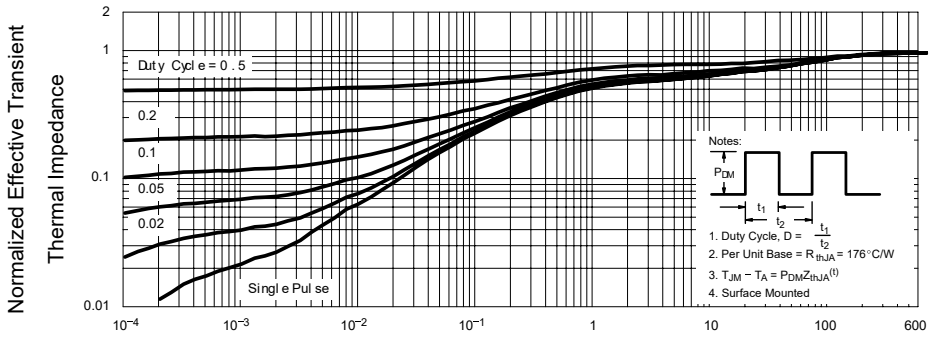
T_J - Temperature (°C)

Threshold Voltage



Time (sec)

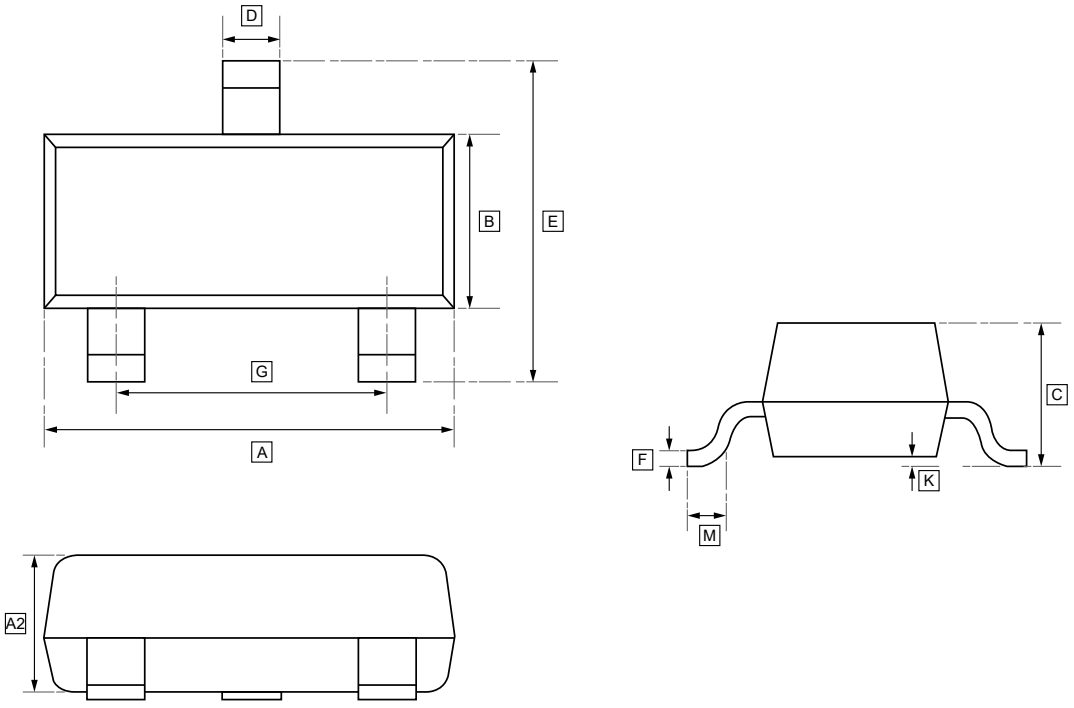
Single Pulse Power



Square Wave Pulse Duration (sec)

Normalized Thermal Transient Impedance, Junction-to-Ambient

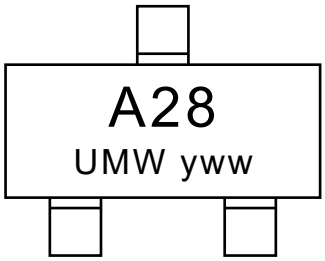
6.SOT-23 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	B	C	D	E	G	K	M	A2	F
Min	2.85	1.20	0.90	0.40	2.25	1.80	0.00	0.30	0.95	0.095
Max	3.04	1.40	1.10	0.50	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

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