

1.Features

- $V_{DS(V)} = -40V$
- $R_{DS(ON)} < 70m\Omega (V_{GS}=10V), I_D = -4.4A$
- $R_{DS(ON)} < 95m\Omega (V_{GS}=4.5V), I_D = -3.5A$

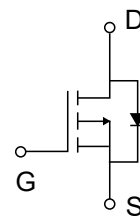
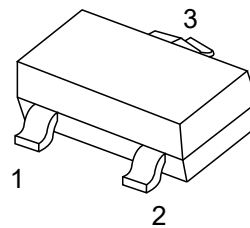
2.Applications

- DC/DC Converter

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}	-40	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-4.4	A
Pulsed Diode Current	I_{DM}	-12	A
Continuous Source-Drain Current(Diode Conduction)	I_S	-1.25	A
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	R_{thJF}	166	$^\circ C/W$
Junction Temperature Range	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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-40			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1		-3	V
Gate-source leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-40V, V_{GS}=0V$			-1	μA
Drain-source on-state resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-4.4A$			70	m Ω
		$V_{GS}=-4.5V, I_D=-3.5A$			95	m Ω
Forward transconductance ^a	g_{FS}	$V_{DS}=-5V, I_D=-3A$		7		S
Diode forward voltage	V_{SD}	$I_S=-1.25A, V_{GS}=0V$		-0.8	-1.25	V
Dynamic						
Input capacitance	C_{iss}	$V_{DS}=-20V, V_{GS}=0V, f=1MHz$		470		pF
Output capacitance	C_{oss}			85		pF
Reverse transfer capacitance ^b	C_{rss}			65		pF
Total gate charge	Q_g	$V_{DS}=-20V, V_{GS}=-10V, I_D=-3A$		11.5	17	nC
Gate-source charge	Q_{gs}			1.8		nC
Gate-drain charge	Q_{gd}			3.3		nC
Gate resistance	R_g	$f=1MHz$		9		nC
Switching ^b						
Turn-on delay time	$t_{D(on)}$	$V_{DS}=-20V$ $R_L=20\Omega, I_D=-1A$ $V_{GEN}=-4.5V, R_G=6\Omega$		7	15	ns
Rise time	t_r			15	25	ns
Turn-off delay time	$t_{D(off)}$			25	40	ns
Fall time	t_f			25	42	ns



Drain-source body diode characteristics						
Continuous Source-Drain Diode Current	I_S	$T_C=25^{\circ}C$			-1.25	A
Pulsed Diode forward Curren	I_{SM}				-20	A

Notes :

- 1. Repetitive Rating : Pulse width limited by maximum junction temperature.
- 2. Surface Mounted on FR4 Board, $t < 5$ sec.
- 3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- 4. Guaranteed by design, not subject to production testing

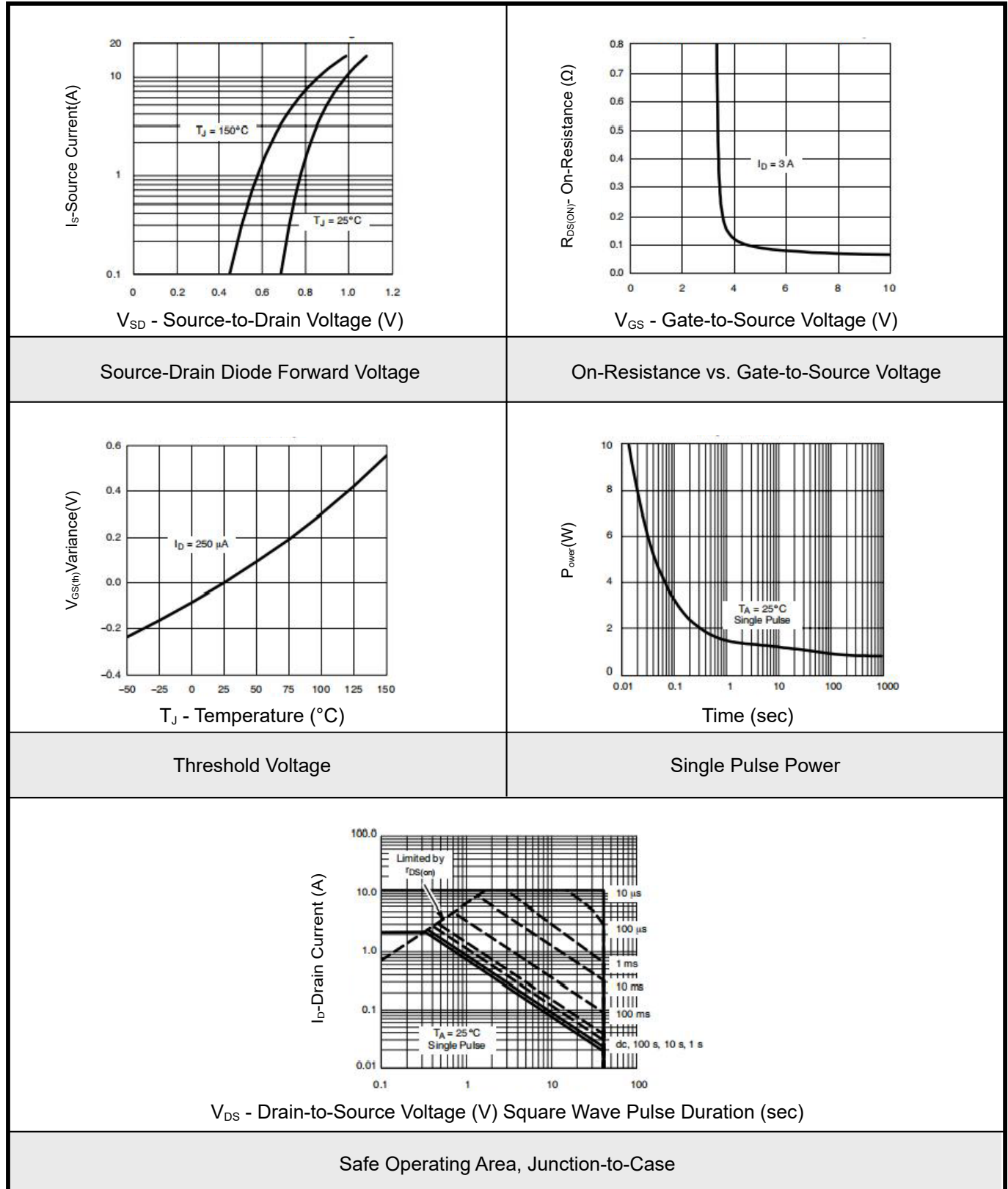


6.1Typical Characterisitics

Output Characteristics	Transfer Characteristics
On-Resistance vs. Drain Current	Capacitance
Gate Charge	On-Resistance vs. Junction Temperature

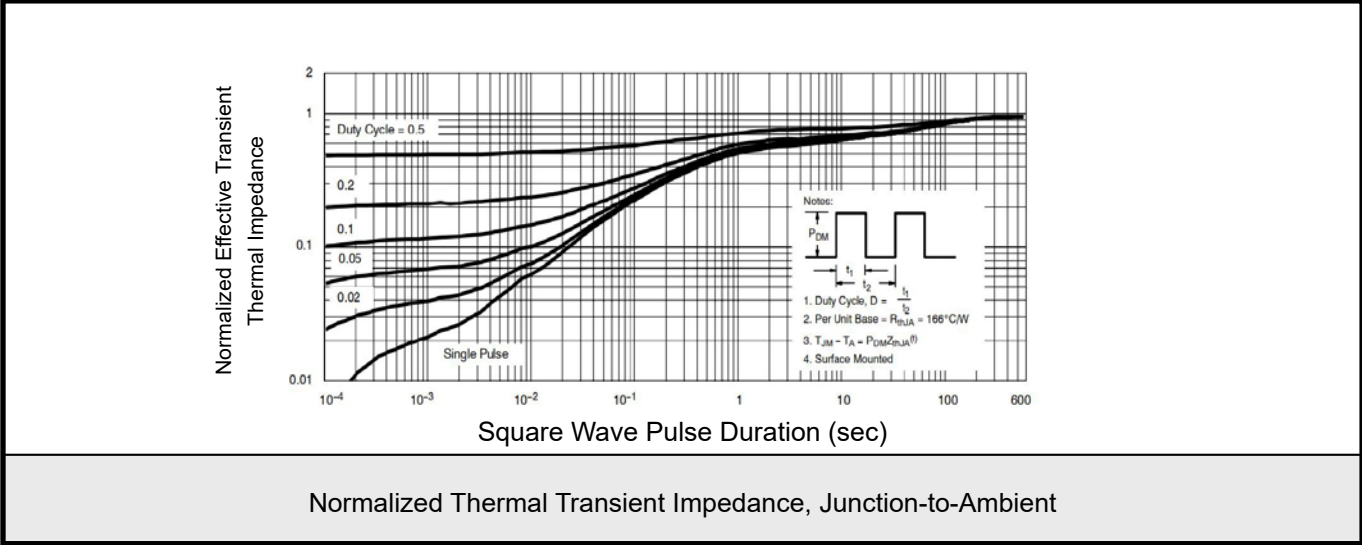


6.2 Typical Characteristics



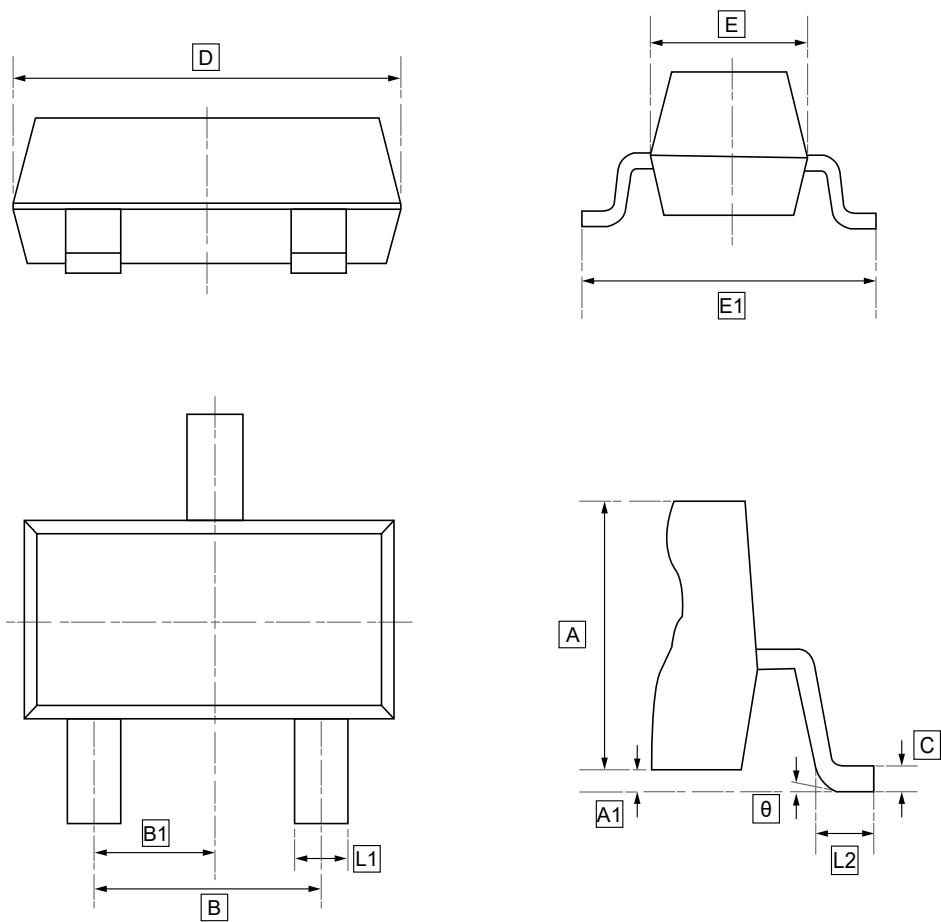


6.3Typical Characterisitics





7.SOT-23 Package Outline Dimensions

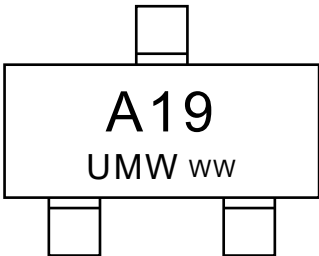


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	L1	L2	C	D	E	E1	B	B1	θ
Min	1.050	0.000	0.300	0.350	0.100	2.820	1.500	2.700	1.800	0.950	0°
Max	1.150	0.100	0.500	0.550	0.200	3.020	1.700	2.900	2.000	TYP	8°



8.Ordering information



WW: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SI2319A	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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