

1.Features

- $V_{DS(V)} = -30V$
- $I_D = -1.7A$
- $R_{DS(ON)} < 120m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 150m\Omega (V_{GS} = -4.5V)$

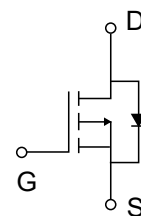
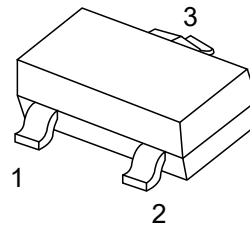
2.Application

- Load Switch for Portable Devices
- 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}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-1.7	A
Pulsed Drain Current	I_{DM}	-10	
Continuous Source-Drain Current(Diode Conduction)	I_S	-1	
Power Dissipation	P_D	0.9	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	357	$^\circ C/W$
Operating Junction	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			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}	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-1.7A$		80	120	m Ω
		$V_{GS}=-4.5V, I_D=-1.3A$		100	150	m Ω
Forward transconductance	g_{FS}	$V_{DS}=-10V, I_D=-1.7A$	5.5			S
Diode forward voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$		-0.8	-1.2	V
Dynamic						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		155		pF
Output Capacitance	C_{oss}			35		pF
Reverse Transfer Capacitance	C_{rss}			25		pF
Total gate charge	Q_g	$V_{DS}=-15V, V_{GS}=-4.5V$ $I_D=-1.7A$		2	4	nC
Gate-source charge	Q_{gs}			0.6		nC
Gate-drain charge	Q_{gd}			1		nC
Gate resistance	R_g	$f=1MHz$		8.5	17	Ω
Switchingb						
Turn-On Delay Time	$t_{D(on)}$	$V_{DD}=-15V$ $R_L=10\Omega, I_D\approx -1.5A$ $V_{GEN}=-4.5V, R_G=5\Omega$		36	44	ns
Rise Time	t_r			37	45	ns
Turn-Off Delay Time	$t_{D(off)}$			12	18	ns
Fall time	t_f			9	14	ns
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	$T_C=25^{\circ}C$			-1.75	A
Pulsed Diode forward Current	I_{SM}				-10	A

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t < 5$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.



6.1 Typical Characteristic

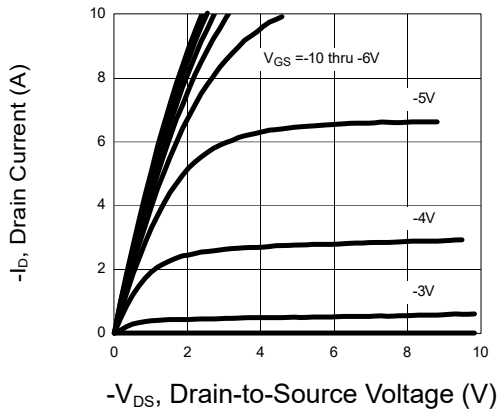


Figure 1: Output Characteristics

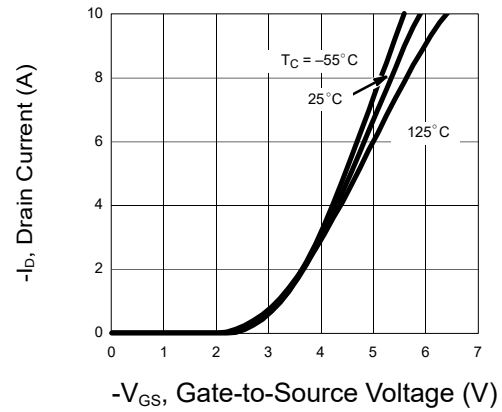


Figure 2: Transfer Characteristics

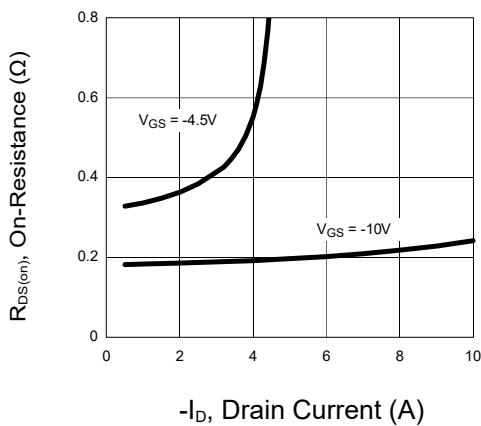


Figure 3: On-Resistance vs. Drain Current

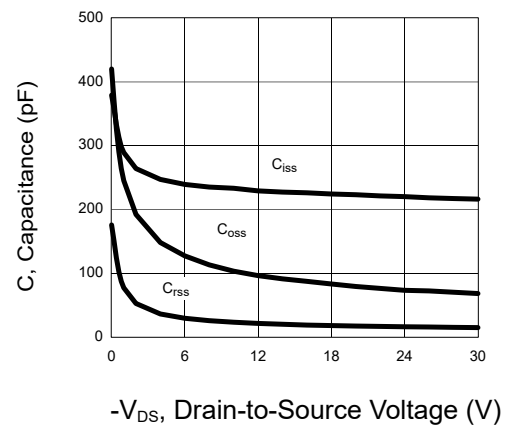


Figure 4: Capacitance

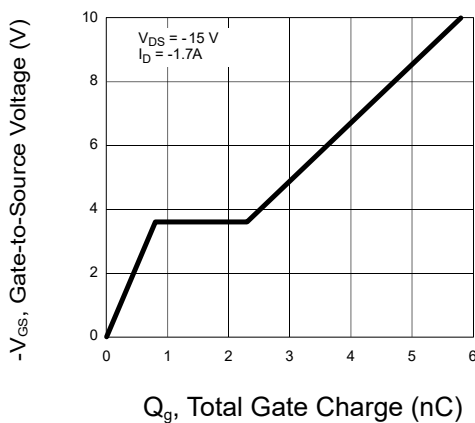


Figure 5: Gate Charge

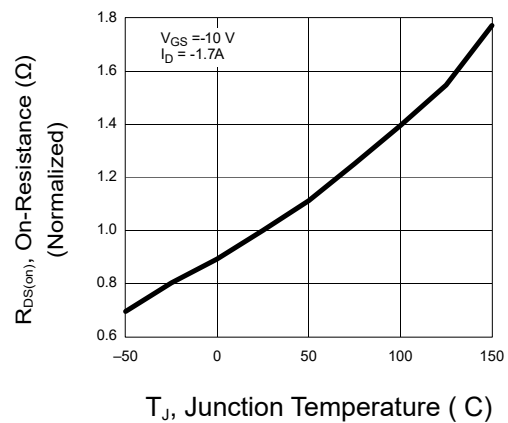
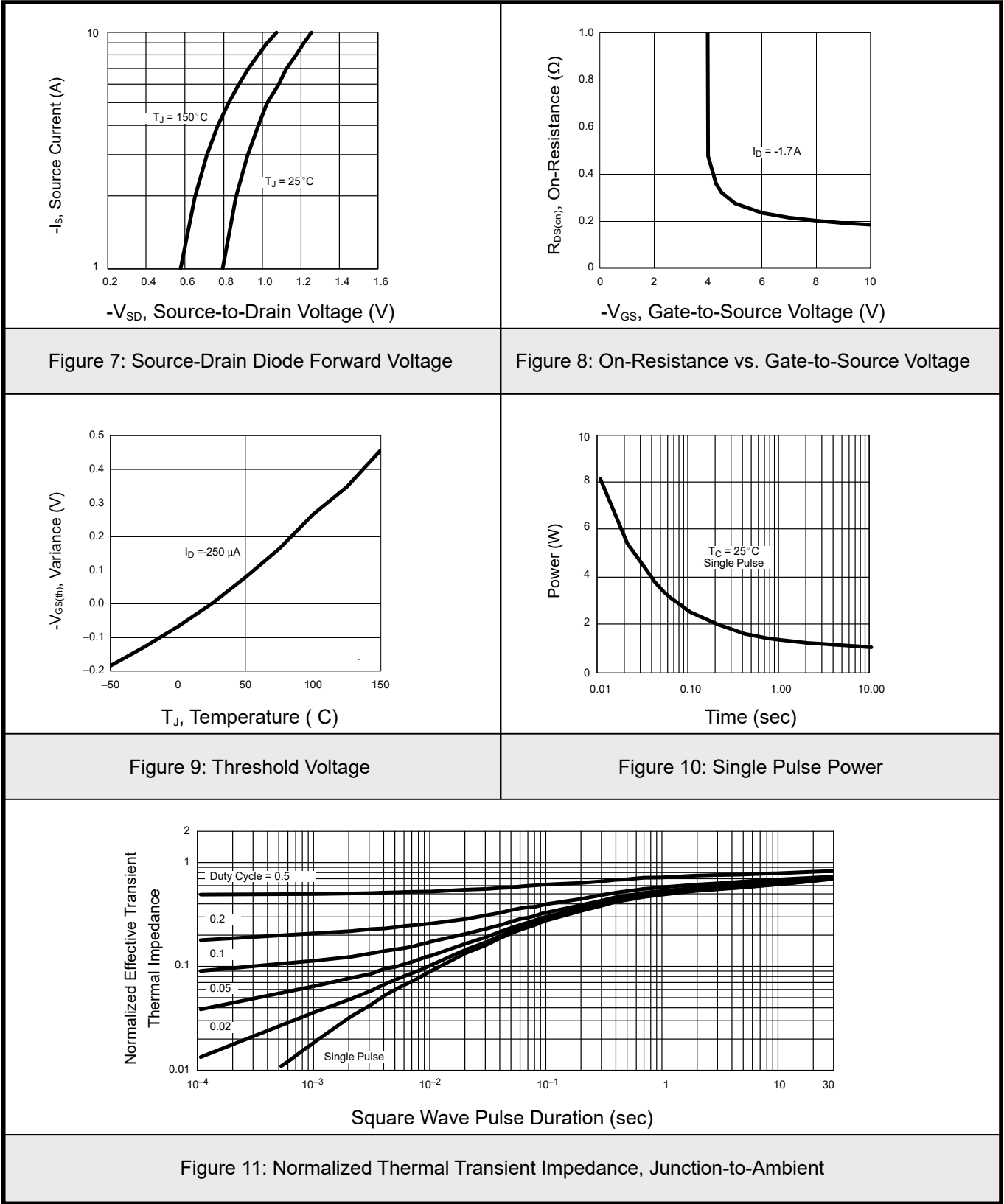


Figure 6: On-Resistance vs. Junction Temperature

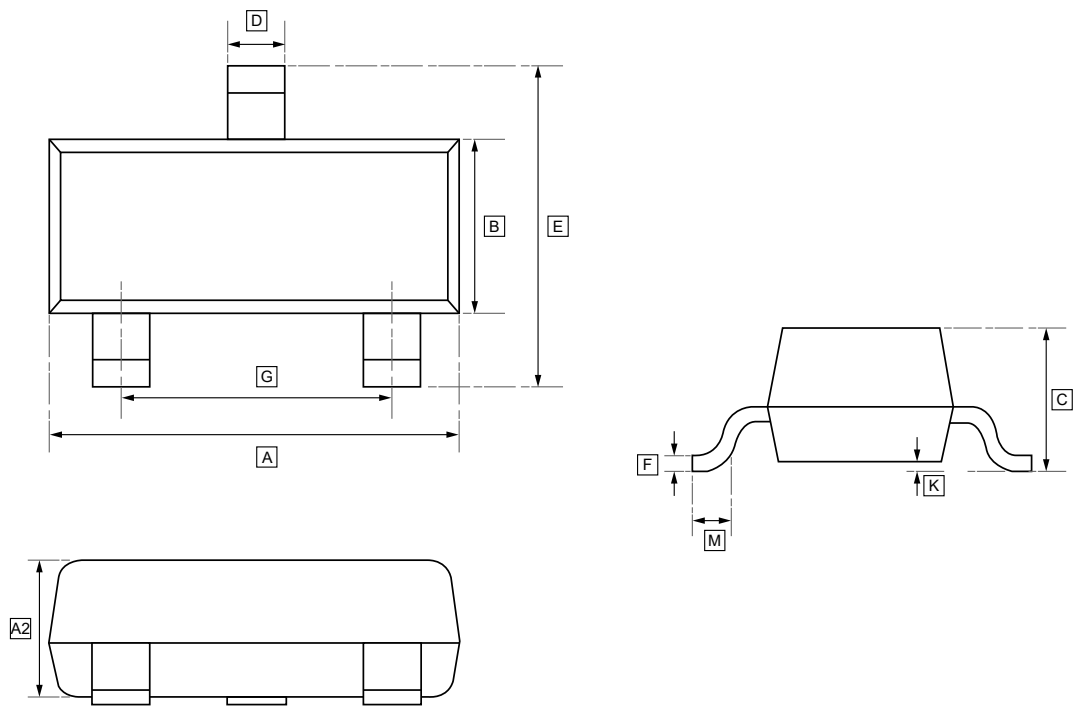


6.2 Typical Characteristic





7.SOT-23 Package Outline Dimensions

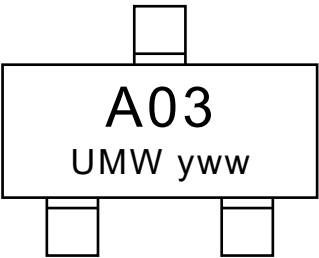


DIMENSIONS (mm are the original dimensions)

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



8.Ordering information



yww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW SI2303	A03	SOT-23	3000	Tape and reel
UMW SI2303A	A03	SOT-23	3000	Tape and reel



9.Disclaimer

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