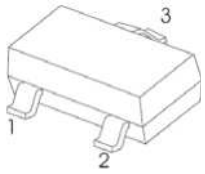
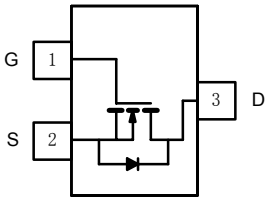
■ Features

- $V_{DS\ (V)}$ = 60V
- I_D = 3 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 80mΩ (V_{GS} = 10V),I_D=3A
- $R_{DS(ON)}$ < 95mΩ (V_{GS} = 4.5V),I_D=1.9A

SOT－23



1. GATE
2. SOURCE
3. DRAIN



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	Ta=25℃	I_D	3	A
	Ta=70℃		1.9	
Pulsed Drain Current		I_{DM}	10	
Power Dissipation	Ta=25℃	P_D	1.25	W
	Ta=70℃		0.8	
Thermal Resistance.Junction- to-Ambient	(Note.1)	R_{thJA}	100	℃/W
	(Note.2)		166	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: Surface Mounted on FR4 Board, t ≤ 5 sec.

Note.2: Surface Mounted on FR4 Board

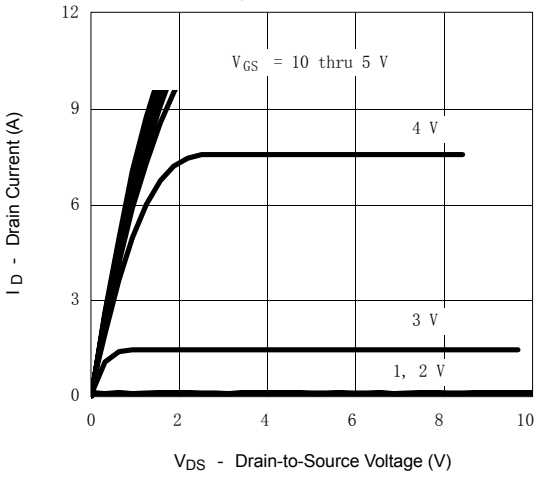
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			0.5	uA
		V_{DS}=60V, V_{GS}=0V, T_J=55℃			10	
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	1.5		3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D= 3A			80	mΩ
		V_{GS}=4.5V, I_D=1.9A			95	
On State Drain Current	$I_{D(ON)}$	V_{GS}≥4.5V, V_{DS}=10V	6			A
		V_{GS}≥4.5V, V_{DS}=4.5V	4			
Forward Transconductance	g_{FS}	V_{DS}=4.5V, I_D=2A		4.6		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz		240		pF
Output Capacitance	C_{oss}			50		
Reverse Transfer Capacitance	C_{rss}			15		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz	0.5		3.3	Ω
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=2A		4.8	10	nC
Gate Source Charge	Q_{gs}			0.8		
Gate Drain Charge	Q_{gd}			1		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=4.5V, V_{DS}=30V, I_D=1A, R_L=30Ω ,R_G=6Ω		7	15	ns
Turn-On Rise Time	t_r			10	20	
Turn-Off DelayTime	$t_{d(off)}$			17	35	
Turn-Off Fall Time	t_f			6	15	
Maximum Body-Diode Continuous Current	I_S				1	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1.2	V

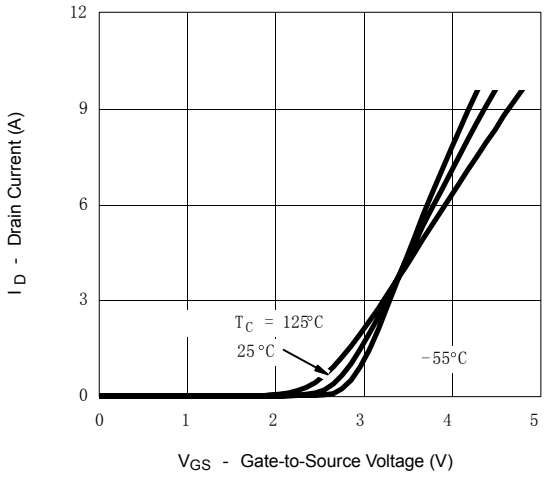
Note.Pulse test; pulse width ≤ 300 us, duty cycle ≤ 2%.

■ Typical Characterisitics

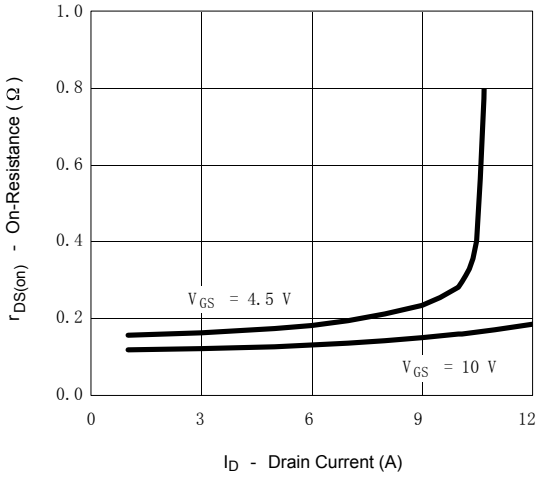
Output Characteristics



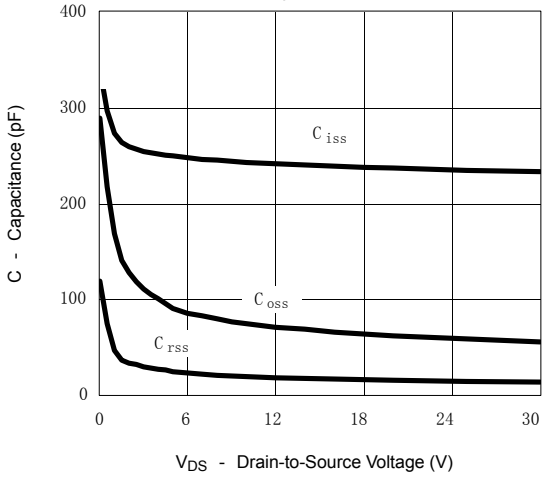
Transfer Characteristics



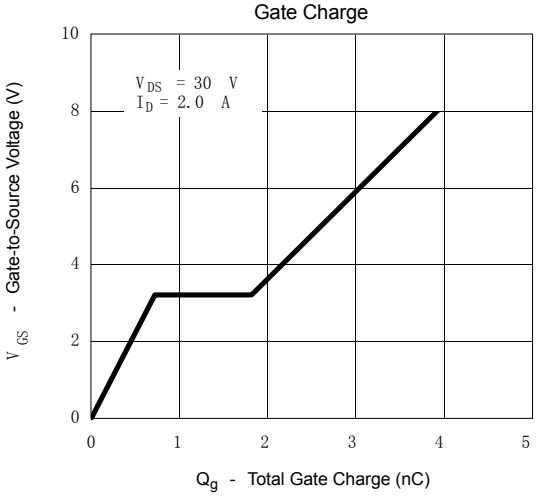
On-Resistance vs. Drain Current



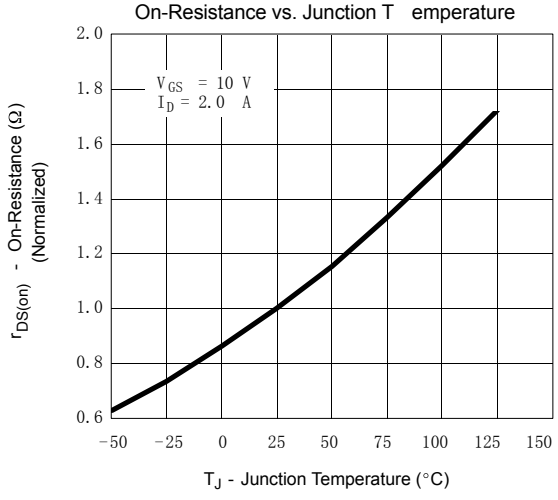
Capacitance



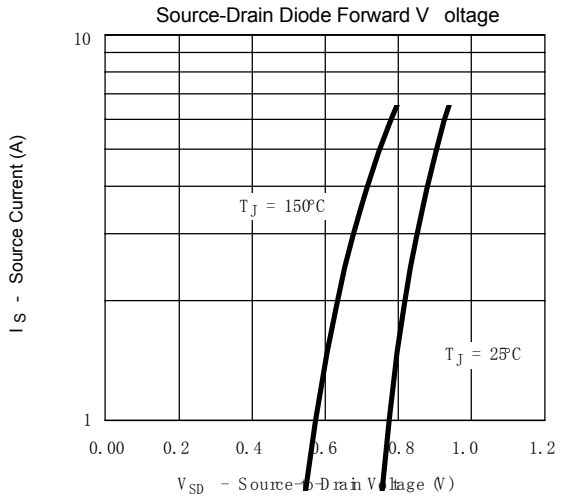
Gate Charge

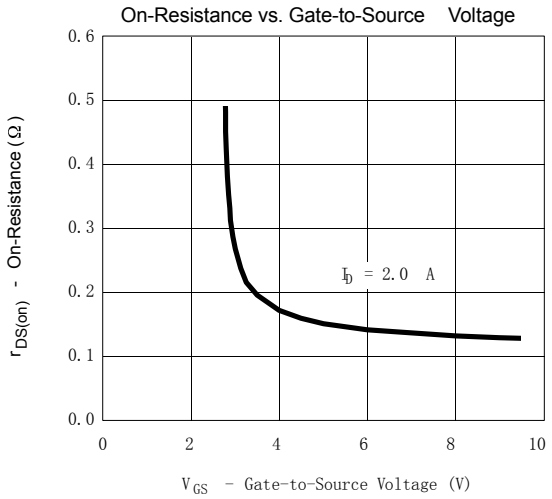


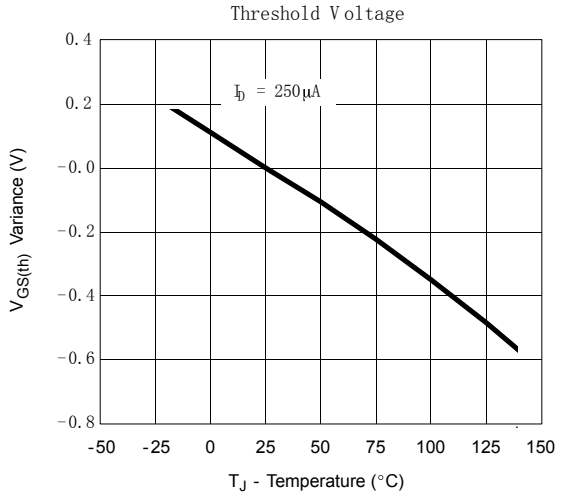
On-Resistance vs. Junction T emperature

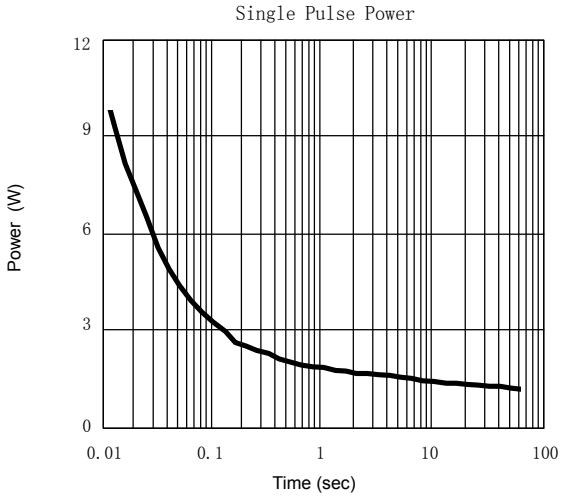


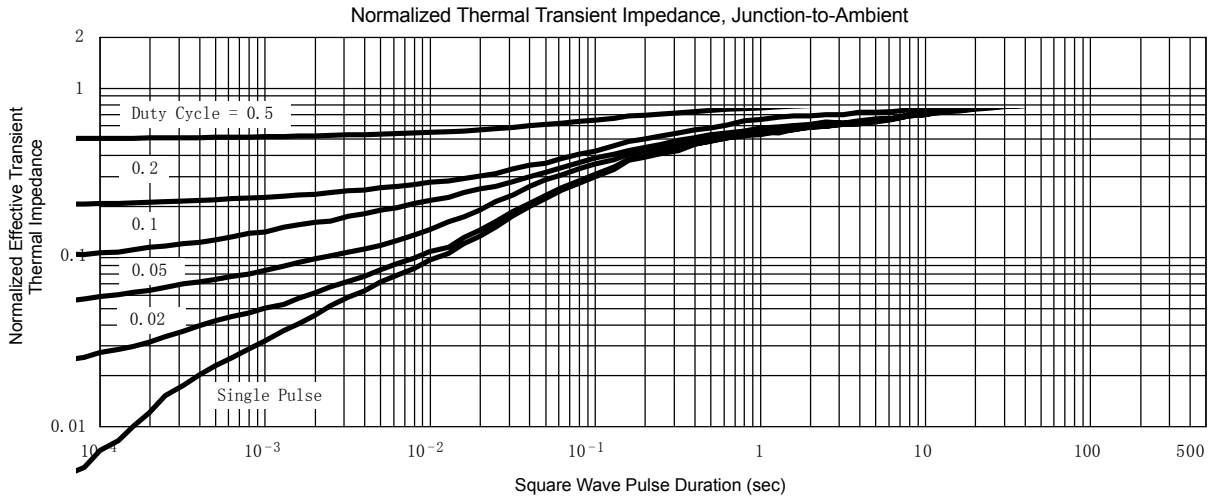
■ Typical Characterisitics



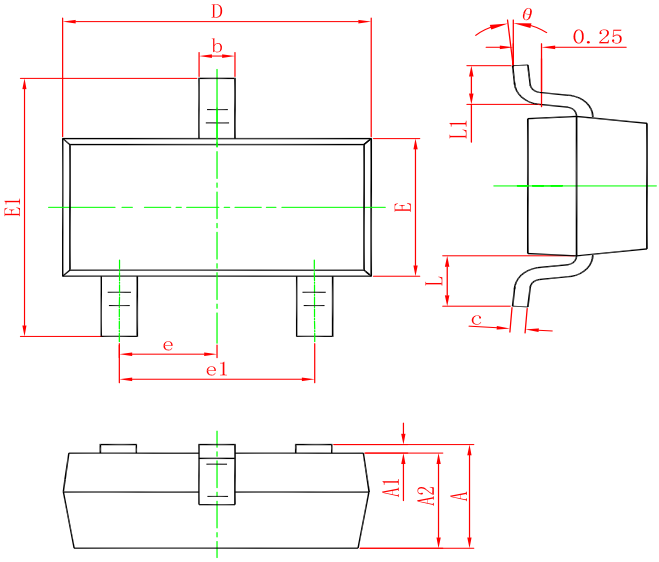






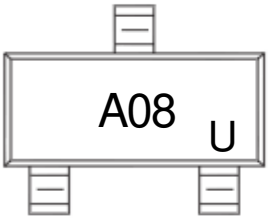


SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
UMW SI2308A	SOT-23	3000	Tape and reel