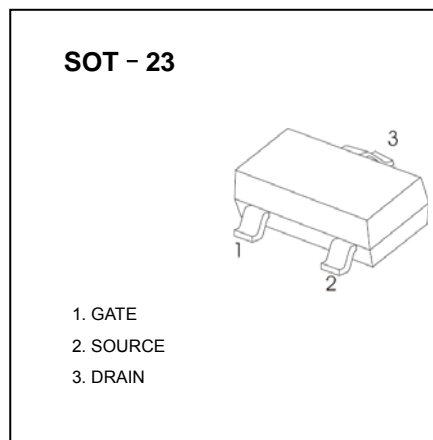


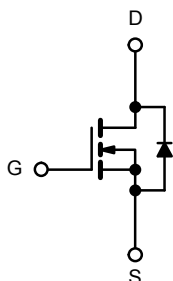
SOT-23 Plastic-Encapsulate MOSFETS

■ Features

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



Equivalent Circuit



■ Absolute Maximum Ratings  $T_a = 25^\circ C$

Parameter	Symbol	5 sec	Steady State	Unit	
Drain-Source Voltage	$V_{DS}$	100		V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$			
Continuous Drain Current *1	$I_D$	$T_a=25^\circ C$	1.5	1.15	A
		$T_a=70^\circ C$	1.2	0.92	
Pulsed Drain Current *2	$I_{DM}$	6			
Avalanche Current *2	$I_{AS}$	6			
Single Avalanche Energy	$E_{AS}$	1.8		mJ	
Power Dissipation *1	$P_D$	$T_a=25^\circ C$	1.25	0.73	W
		$T_a=70^\circ C$	0.8	0.47	
Thermal Resistance.Junction- to-Ambient *1 $t \leq 5$ sec	$R_{thJA}$	100		$^\circ C/W$	
		Steady State			170
Thermal Resistance.Junction-to-Foot	$R_{thJF}$	55			
Junction Temperature	$T_J$	150		$^\circ C$	
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

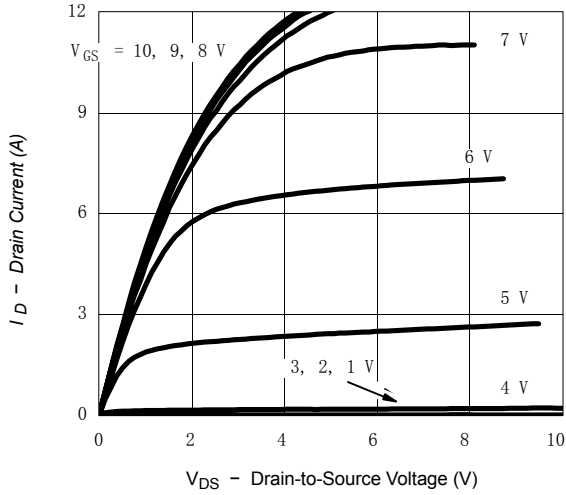
**SOT-23 Plastic-Encapsulate MOSFETS**
**■ Electrical Characteristics Ta = 25°C**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	100			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0V			1	μ A
		V <sub>DS</sub> =100V, V <sub>GS</sub> =0V, Ta=70°C			75	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μ A	2		4	V
On-State Drain Current *1	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 15 V, V <sub>GS</sub> = 10 V	6			A
Static Drain-Source On-Resistance *1	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =1.5A			245	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> = 1 A			265	mΩ
Forward Transconductance *1	g <sub>FS</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =1.5A		4		S
Gate Resistance	R <sub>g</sub>		0.5		2.4	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, I <sub>D</sub> =1.5A		3.3	4	nC
Gate Source Charge	Q <sub>gs</sub>			0.47		
Gate Drain Charge	Q <sub>gd</sub>			1.45		
Turn-On DelayTime	t <sub>d(on)</sub>	I <sub>D</sub> =0.2A, V <sub>DS</sub> =50V, V <sub>GEN</sub> =10V R <sub>L</sub> =33Ω, R <sub>G</sub> =6Ω		7	11	ns
Turn-On Rise Time	t <sub>r</sub>			11	17	
Turn-Off DelayTime	t <sub>d(off)</sub>			9	15	
Turn-Off Fall Time	t <sub>f</sub>			10	15	
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.5A, di/dt= 100A/ μ s		50	100	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				1.0	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.0A, V <sub>GS</sub> =0V		0.8	1.2	V

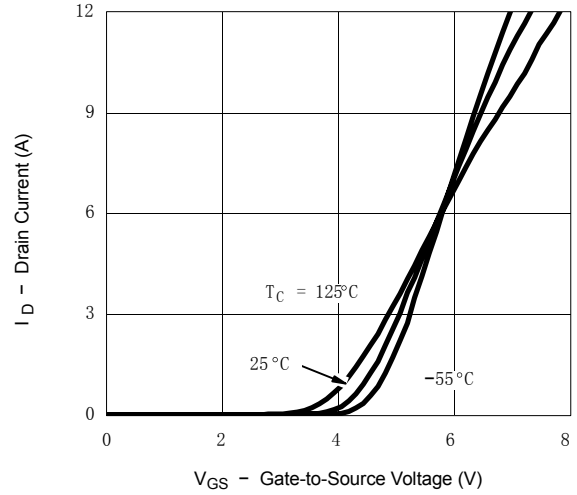
\*1 Pulse test: PW ≤ 300us duty cycle ≤ 2%.

■ Typical Characteristics

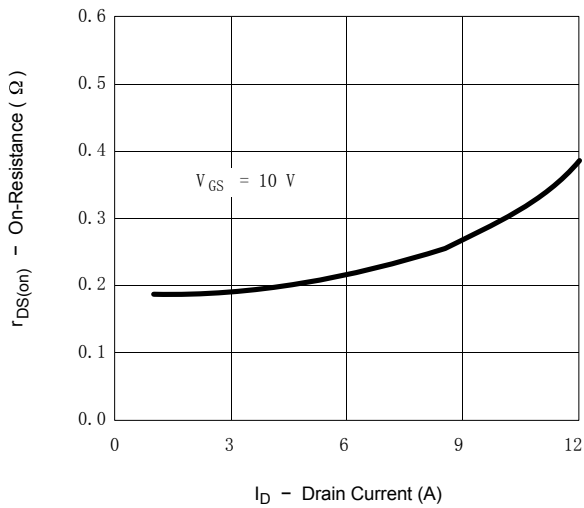
Output Characteristics



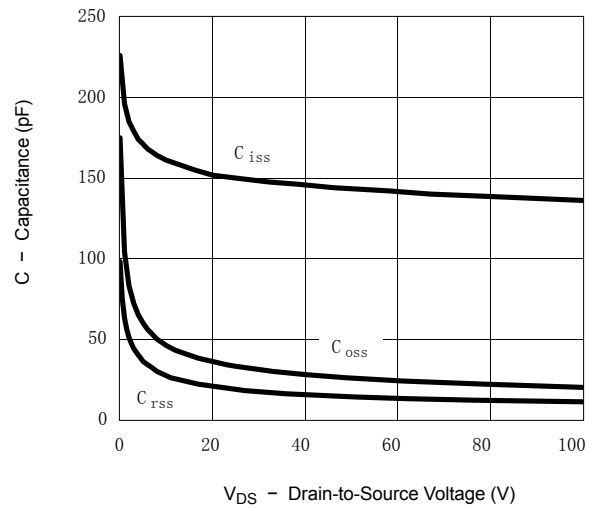
Transfer Characteristics



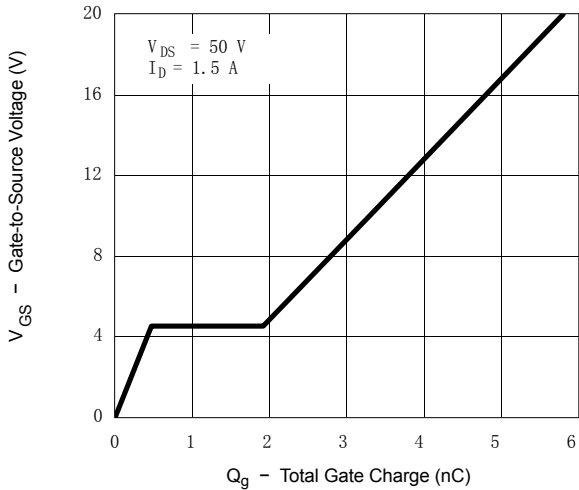
On-Resistance vs. Drain Current



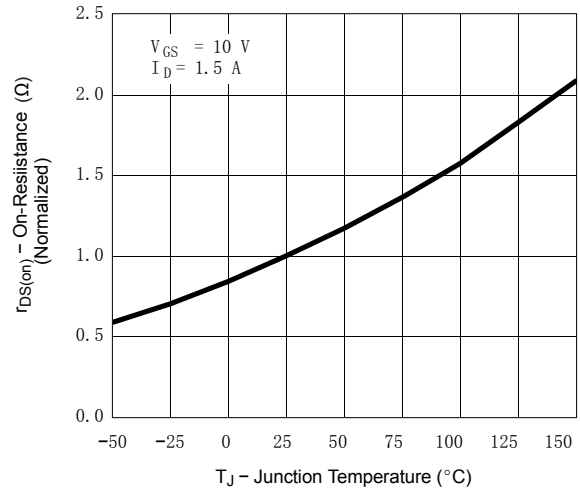
Capacitance



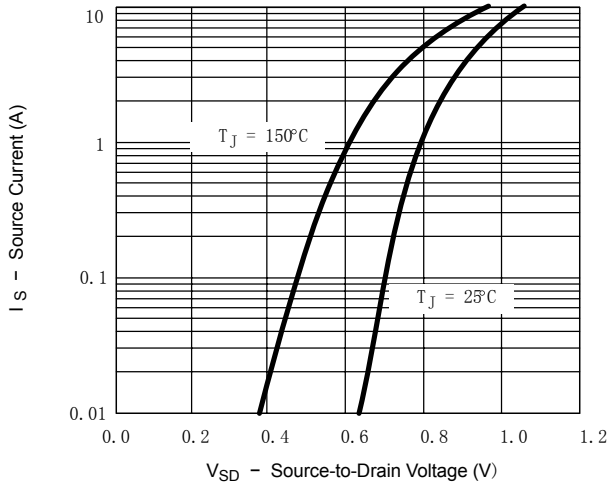
Gate Charge



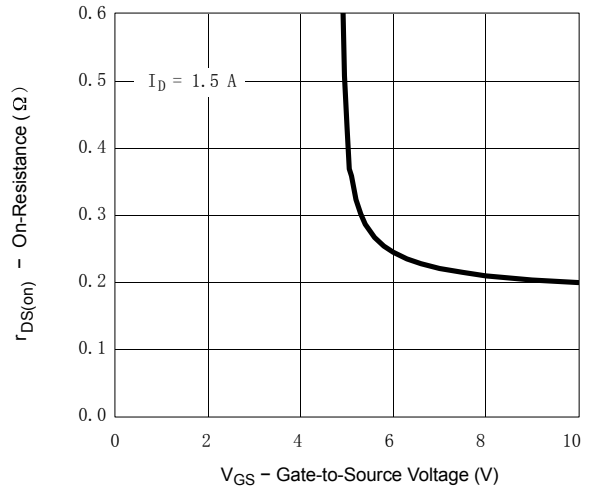
On-Resistance vs. Junction Temperature



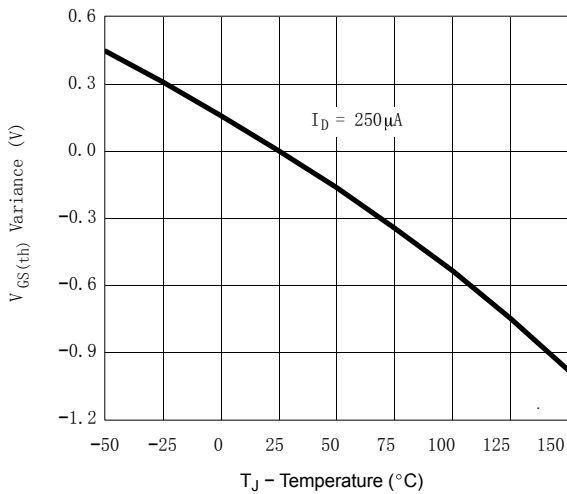
■ Typical Characteristics  
Source-Drain Diode Forward Voltage



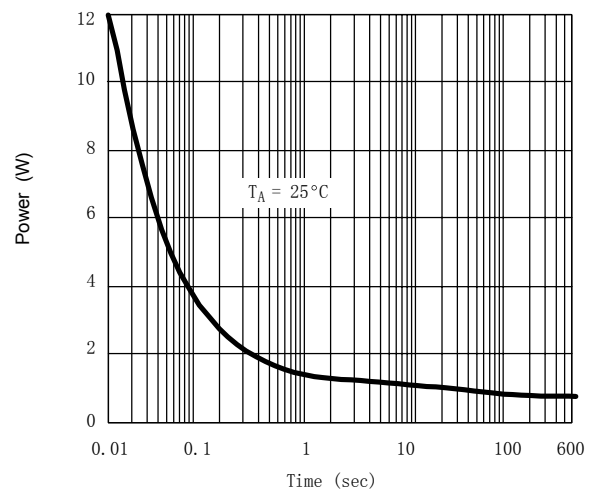
On-Resistance vs. Gate-to-Source Voltage



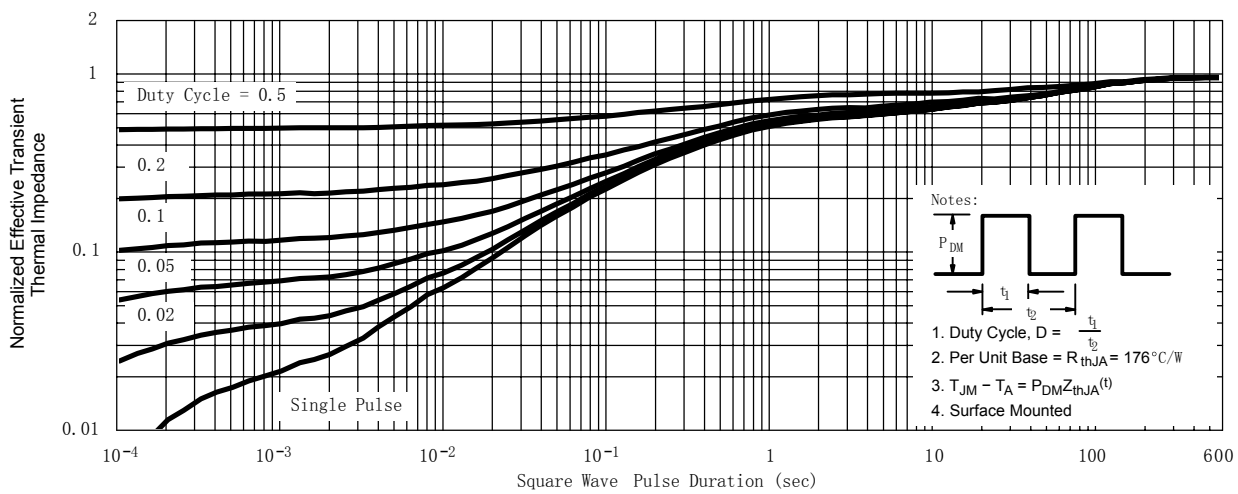
Threshold Voltage



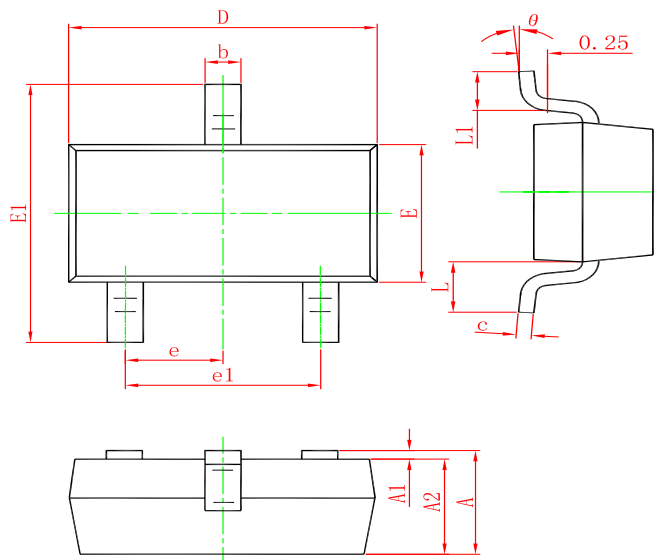
Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient

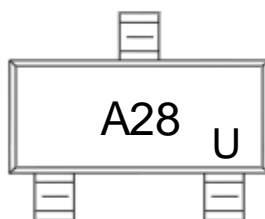


SOT-23 PACKAGE OUTLINE DIMENSIONS



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 SI2328A	SOT-23	3000	Tape and reel