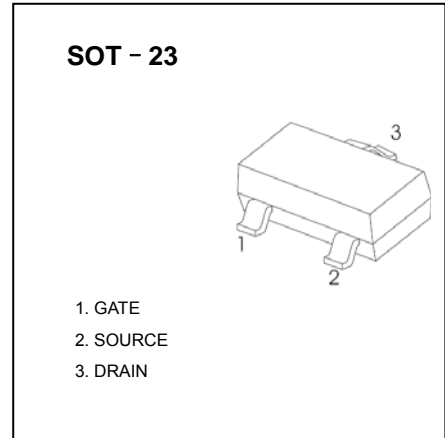
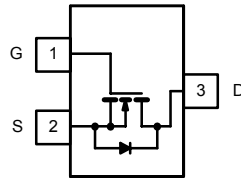


N-Channel Enhancement MOSFET

■ Features

- $V_{DS}=20V$
- $R_{DS(on)}=85m\Omega@V_{GS}=4.5V, I_D=3.6A$
- $R_{DS(on)}=115m\Omega@V_{GS}=2.5V, I_D=3.1A$



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DS}$	20	V
Gate-Source Voltage		$V_{GS}$	$\pm 8$	
Continuous Drain Current *1	$T_a=25^\circ C$	$I_D$	2.8	A
	$T_a=70^\circ C$		2.2	
Pulsed Drain Current		$I_{DM}$	10	
Power Dissipati	$T_a=25^\circ C$	$P_D$	1.25	W
	$T_a=70^\circ C$		0.8	
Thermal Resistance.Junction- to-Ambient *1 *2		$R_{thJA}$	100	$^\circ C/W$
			166	
Junction Temperature		$T_J$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55 to 150	

Notes:

\*1.Surface Mounted on FR4 Board,  $t \leq 5$  sec.

\*2.Surface Mounted on FR4 Board.

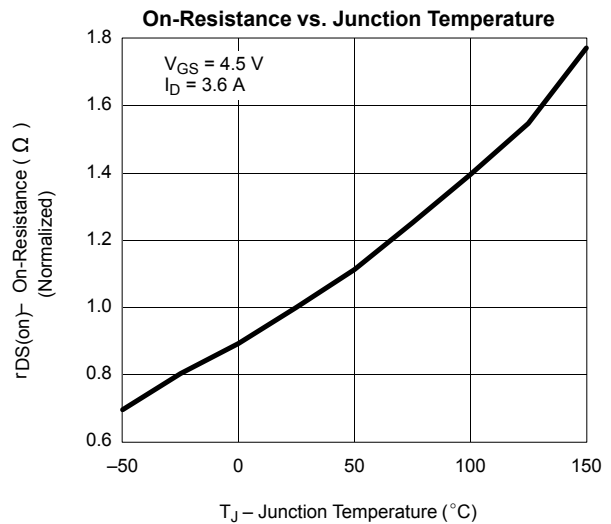
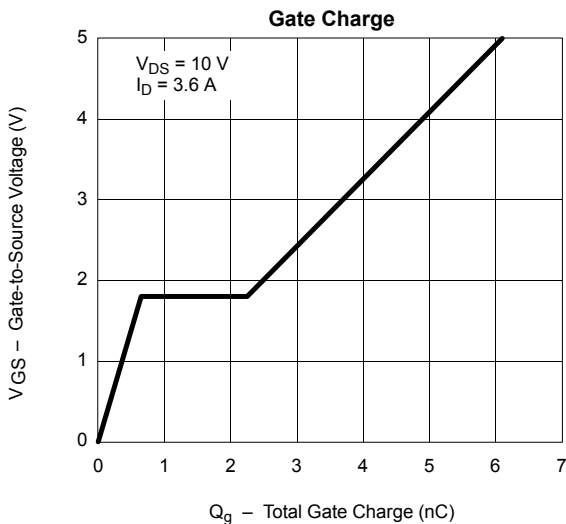
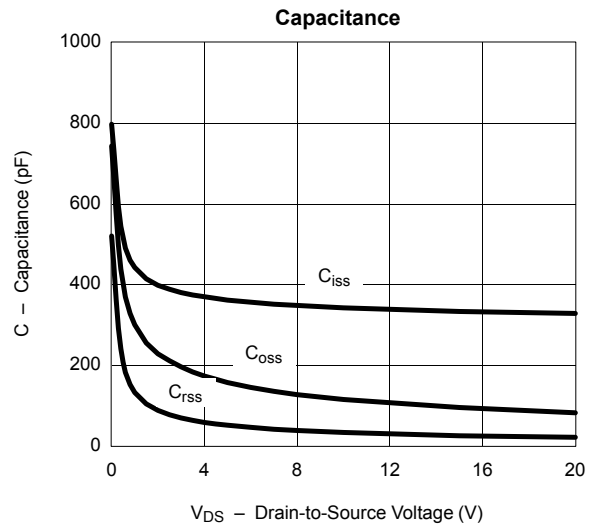
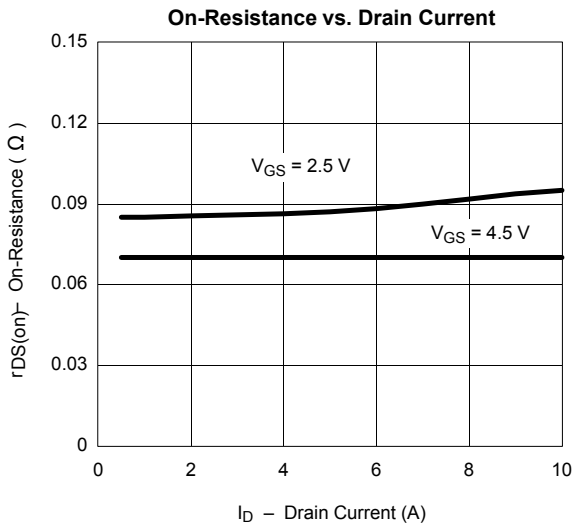
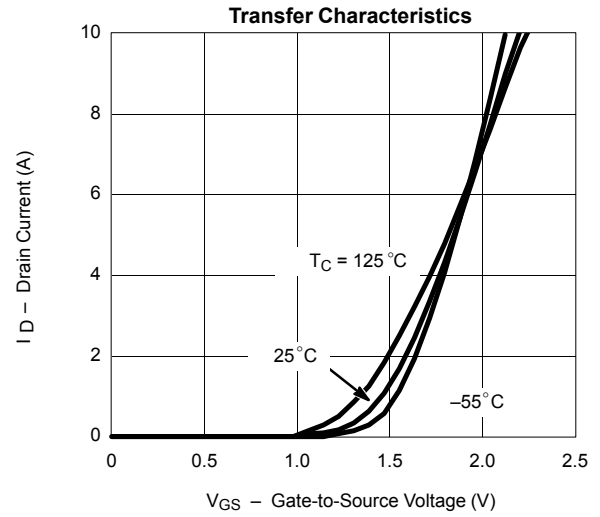
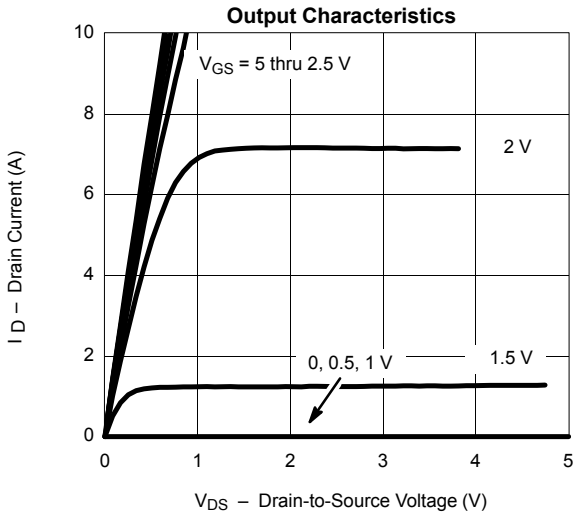
**N-Channel Enhancement MOSFET**
**■ Electrical Characteristics Ta = 25°C**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μ A, V <sub>GS</sub> =0V	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μ A
		V <sub>DS</sub> =20V, V <sub>GS</sub> =0V, T <sub>J</sub> =55 °C			10	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =± 8V			± 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	0.62	0.95	1.9	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.6A		45	85	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =3.1A		70	115	
Forward Transconductance *	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =3.6A		8		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =10V, f=1MHz		300		pF
Output Capacitance	C <sub>oss</sub>			120		
Reverse Transfer Capacitance	C <sub>rss</sub>			80		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.6A		4	10	nC
Gate-Source Charge	Q <sub>gs</sub>			0.65		
Gate-Drain Charge	Q <sub>gd</sub>			1.5		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, R <sub>L</sub> =5.5 Ω, R <sub>GEN</sub> =6 Ω  I <sub>D</sub> =3.6A		7	15	ns
Turn-On Rise Time	t <sub>r</sub>			55	80	
Turn-Off DelayTime	t <sub>d(off)</sub>			16	60	
Turn-Off Fall Time	t <sub>f</sub>			10	25	
Continuous Source Current (Diode Conduction)	I <sub>S</sub>			1.6		A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.6A, V <sub>GS</sub> =0V		0.76	1.2	V

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

N-Channel Enhancement MOSFET

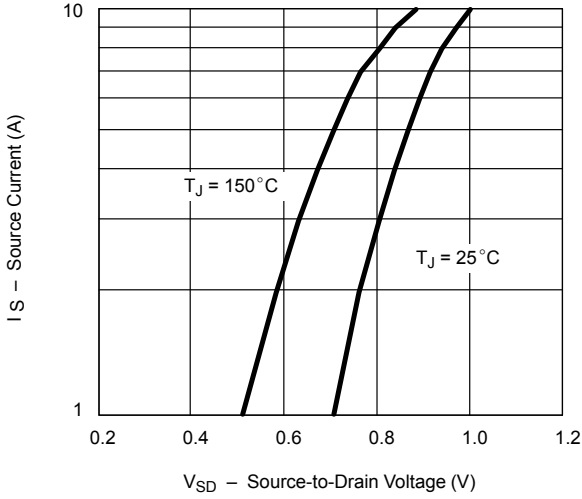
■ Typical Characteristics



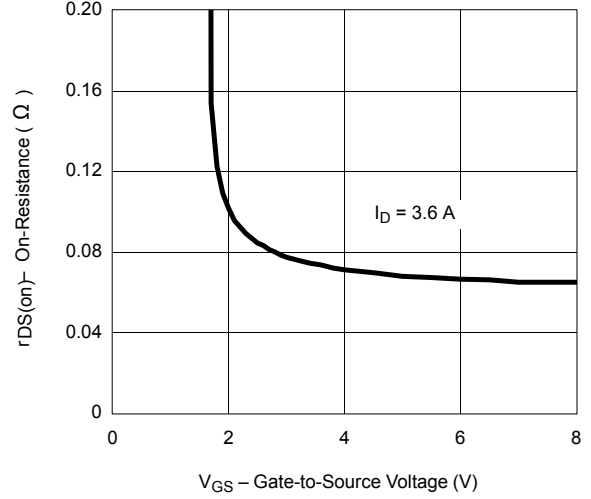
N-Channel Enhancement MOSFET

■ Typical Characteristics

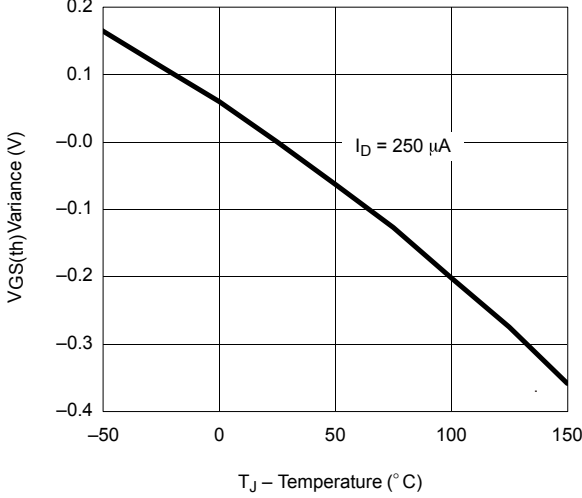
Source-Drain Diode Forward Voltage



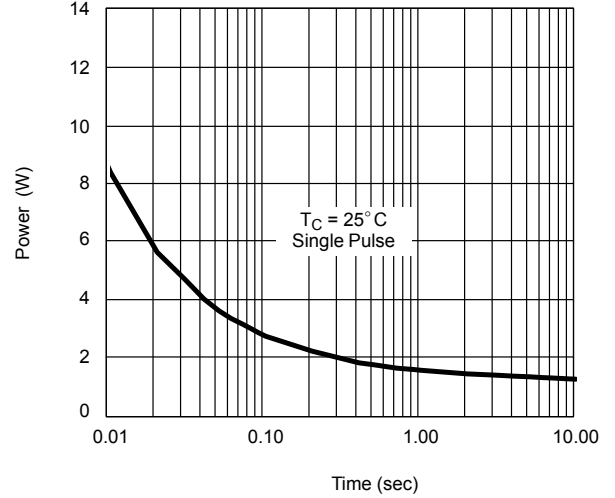
On-Resistance vs. Gate-to-Source Voltage



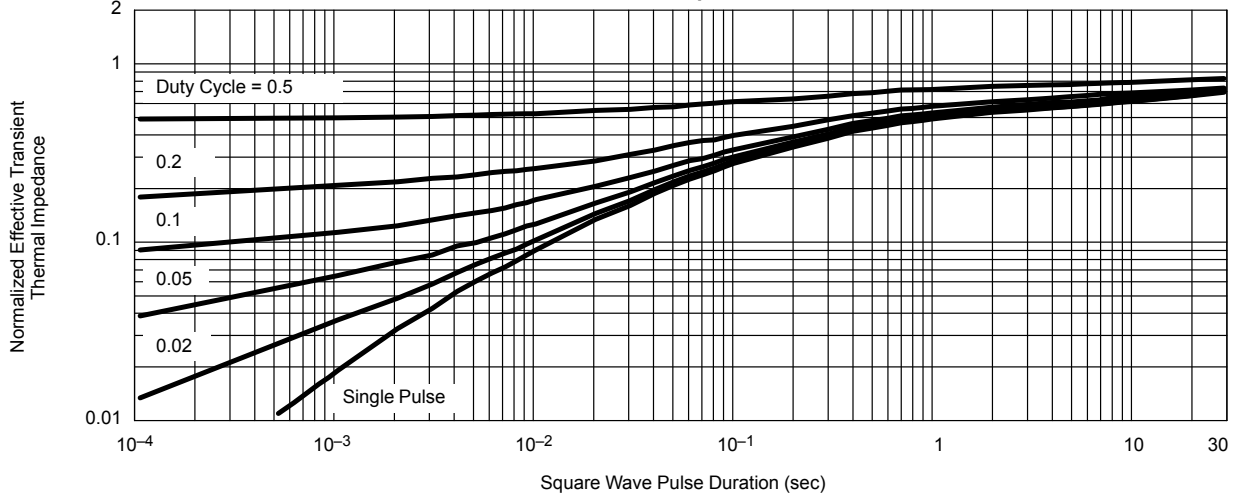
Threshold Voltage



Single Pulse Power

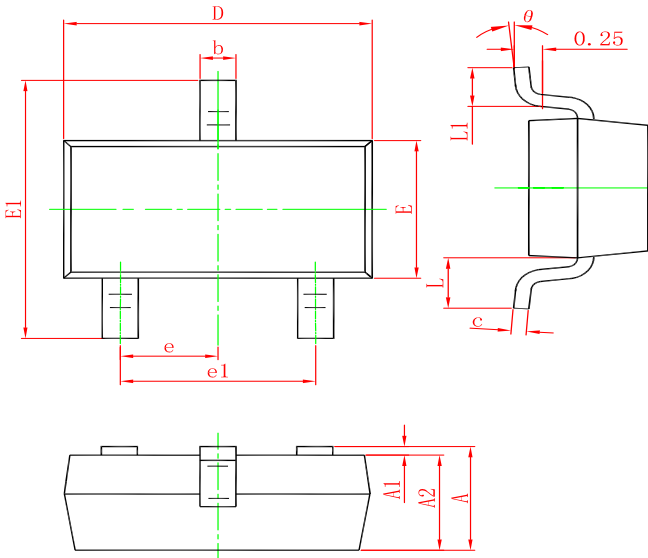


Normalized Thermal Transient Impedance, Junction-to-Ambient



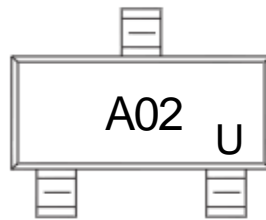
N-Channel Enhancement MOSFET

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 SI2302A	SOT-23	3000	Tape and reel