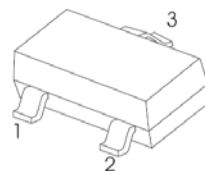


■ Features

- $V_{DS} = 50V$
- $I_D = 300\text{ mA}$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 2.5\ \Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 3.5\ \Omega$ ($V_{GS} = 2.5V$)
- Low On-Resistance
- ESD Rating: 1.5KV HBM

SOT - 23



1. GATE
2. SOURCE
3. DRAIN

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Drain-Gate Voltage $R_{GS} \leq 20K\Omega$	V_{DG}	50	
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	300	mA
Power Dissipation	P_D	300	mW
Thermal Resistance Junction- to-Ambient	R_{thJA}	417	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = 250\ \mu\text{A}$, $V_{GS} = 0V$	50			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 50V$, $V_{GS} = 0V$			0.5	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V$, $V_{GS} = \pm 20V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	0.7		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 300\text{mA}$			2.5	Ω
		$V_{GS} = 2.5V$, $I_D = 100\text{mA}$			3.5	
Forward Transconductance	g_{FS}	$V_{DS} = 25V$, $I_D = 0.3A$, $f = 1\text{KHz}$	100			mS
Input Capacitance	C_{iss}	$V_{GS} = 0V$, $V_{DS} = 10V$, $f = 1\text{MHz}$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				8	
Turn-On DelayTime	$t_{d(on)}$	$V_{DS} = 30V$, $I_D = 0.3A$, $R_G = 50\ \Omega$			20	ns
Turn-Off DelayTime	$t_{d(off)}$				20	

■ Typical Characteristics

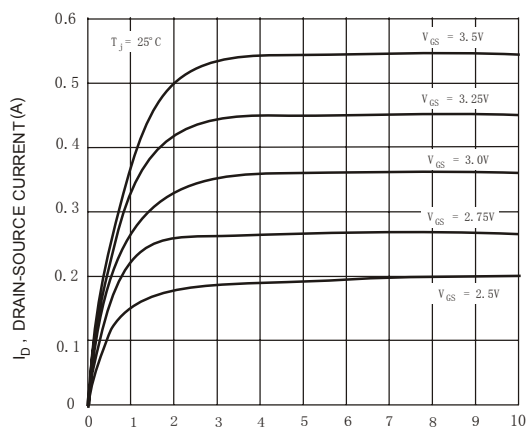


Fig. 1 Drain-Source Current vs. Drain-Source Voltage

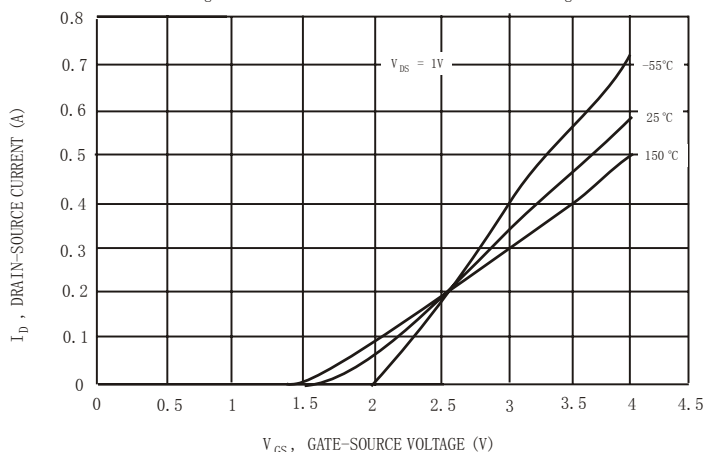


Fig. 2 Transfer Characteristics

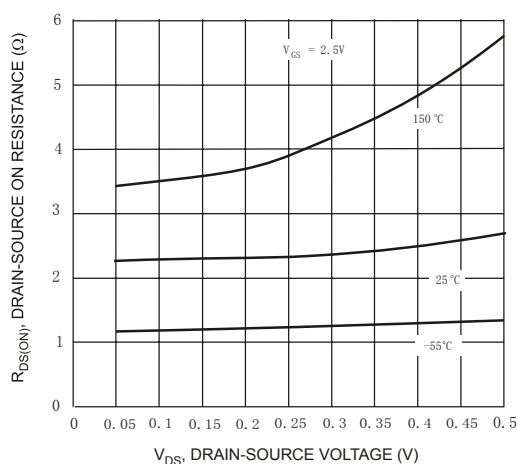


Fig. 5 Drain-Source On Resistance vs. Drain Current

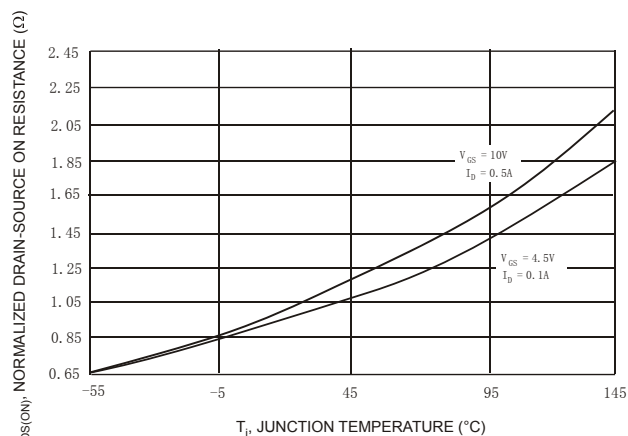


Fig. 3 Drain-Source On Resistance vs. Junction Temperature

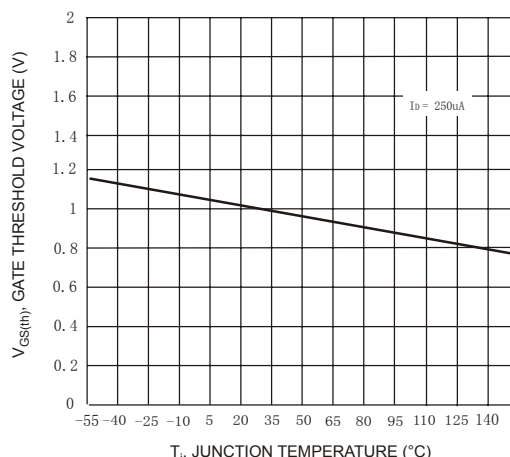


Fig. 4 Gate Threshold Voltage vs. Junction Temperature

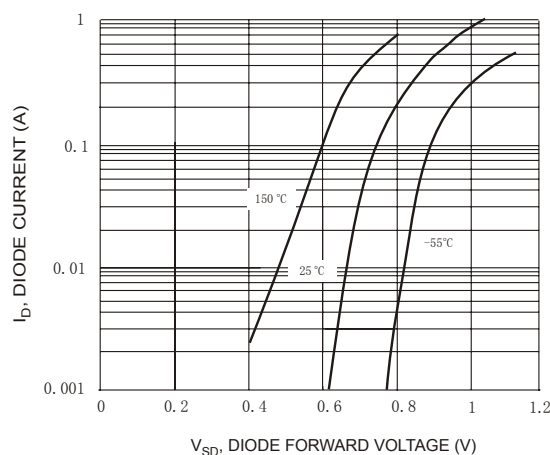
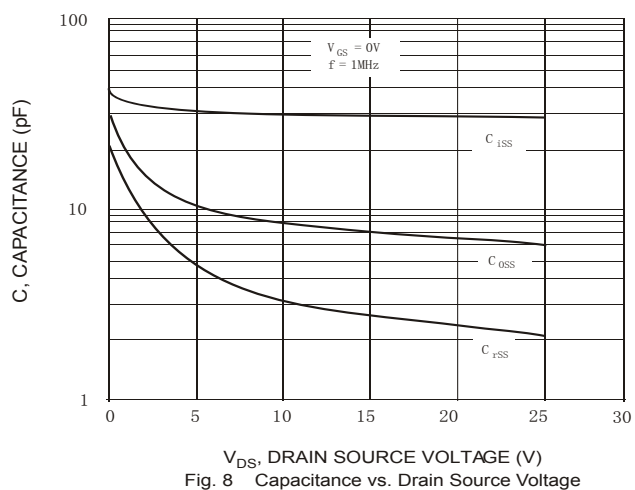
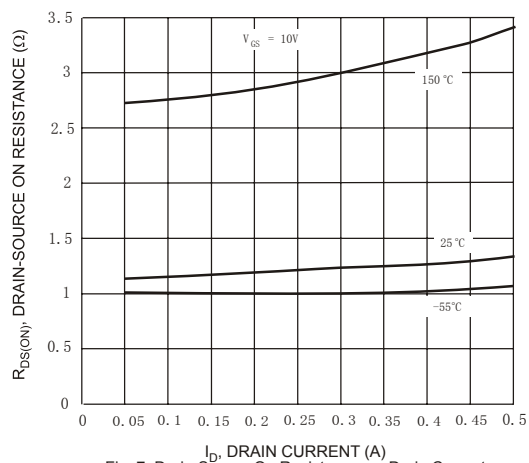
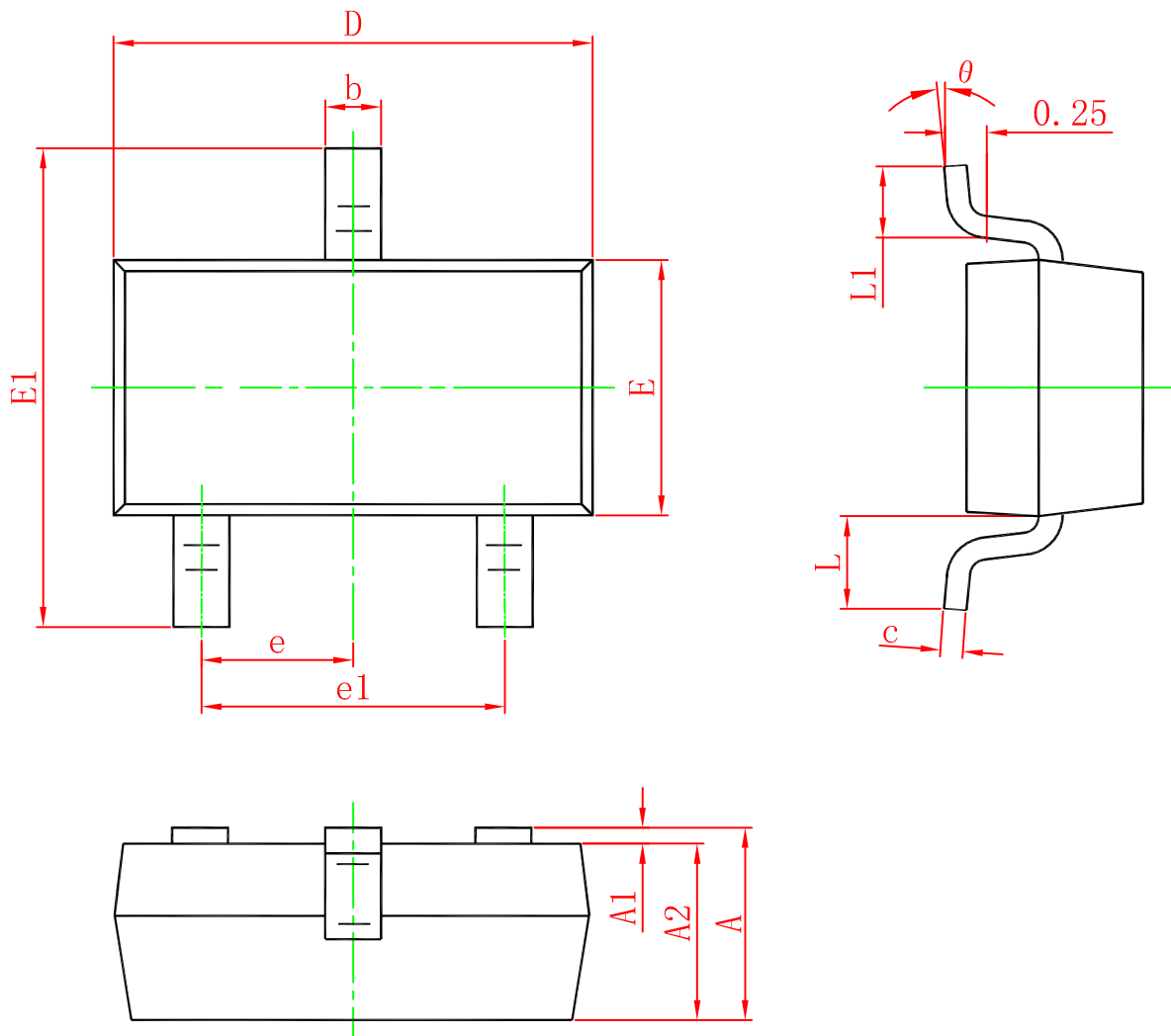


Fig. 6 Body Diode Current vs. Body Diode Voltage

■ Typical Characteristics

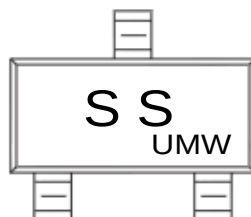


SOT-23 PACKAGE OUTLINE DIMENSIONS



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 BSS138	SOT-23	3000	Tape and reel