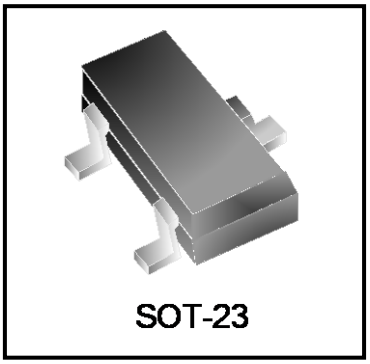
WM10N02M

N-Channel MOSFET

Features

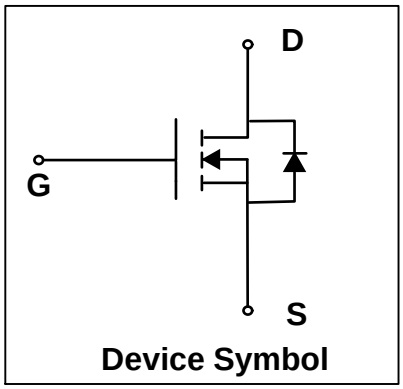
- V_{DS}= 100V, I_D = 0.2A
  $R_{DS(on)}$ < 6Ω @ V_{GS} = 10V
  $R_{DS(on)}$ < 9Ω @ V_{GS} = 4.5V
- Switching Application
- Small Servo Motor Controls
- Rugged and Reliable

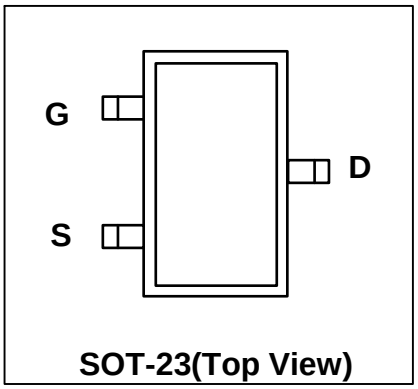


Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration





Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.2	A
Pulsed Drain Current [1]	I_{DM}	0.5	A
Power Dissipation	P_D	350	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Thermal Resistance from Junction to Ambient [2]	$R_{\theta JA}$	357	°C/W

Electrical Characteristics (T_{amb}=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0 V, I_D = 250μA	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =100V, V_{GS} = 0 V	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20V	-	-	±1	μA
Gate Threshold Voltage[3]	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	-	3	V
Drain-Source On-state Resistance[3]	$R_{DS(on)}$	V_{GS} = 10V, I_D = 0.2A	-	3.5	6	Ω
		V_{GS} =4.5V, I_D = 0.17A	-	3.8	9	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 50V, f = 1MHz	-	25	-	pF
Output Capacitance	C_{oss}		-	3.6	-	
Reverse Transfer Capacitance	C_{rss}		-	1.5	-	
Switching Characteristics						
Total Gate Charge[4]	Q_g	V_{GS} = 10V, V_{DS} = 10V, I_D = 0.2A	-	1.5	-	nC
Gate-Source Charge[4]	Q_{gs}		-	0.18	-	
Gate-Drain Charge[4]	Q_{gd}		-	0.22	-	
Turn-On Delay Time[4]	$t_{d(on)}$	V_{DD} = 50V, V_{GS} =10V, I_D =0.2A, R_G= 6Ω	-	5.5	-	nS
Turn-On Rise Time[4]	t_r			5.5		
Turn-Off Delay Time[4]	$t_{d(off)}$		-	7.8	-	
Turn- Off Fall Time[4]	t_f		-	10	-	
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I_S= 0.2A, V_{GS} = 0V	-	-	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. Guaranteed by design, not subject to product

Typical Characteristics

Figure 1. Output Characteristics

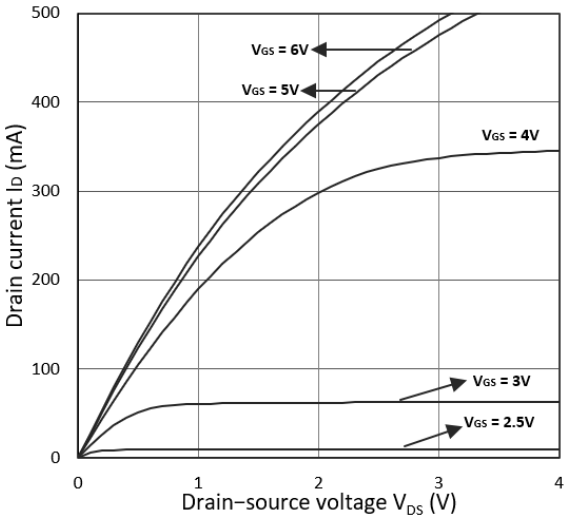


Figure 2. Transfer Characteristics

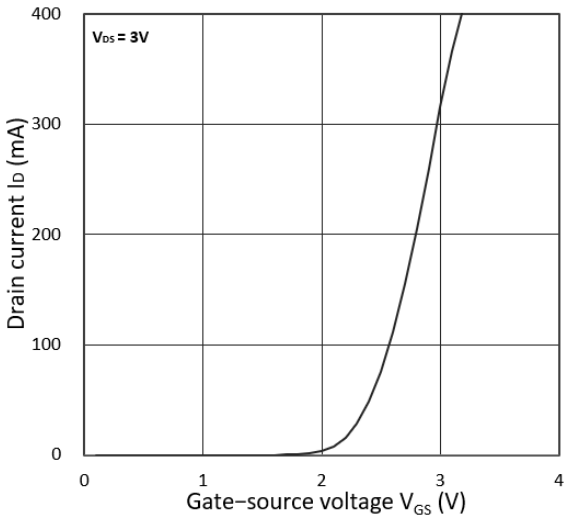


Figure 3. $R_{DS(ON)}$ vs. I_D

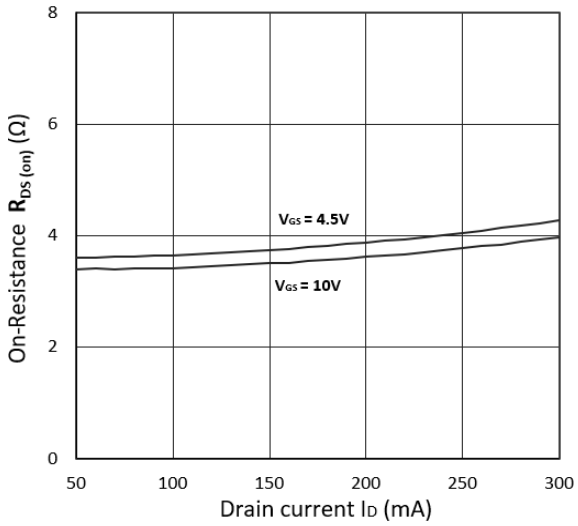


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

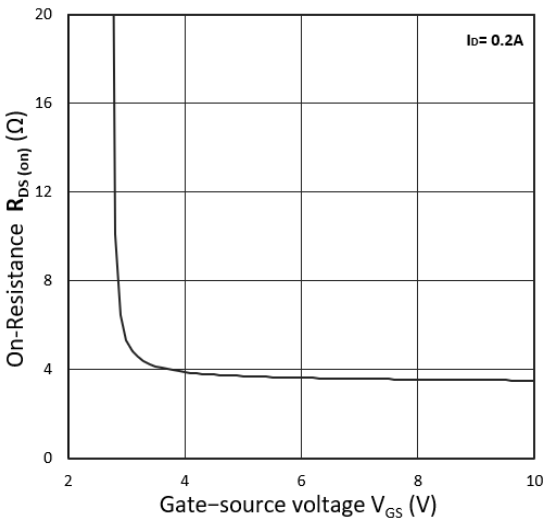


Figure 5. I_S vs. V_{SD}

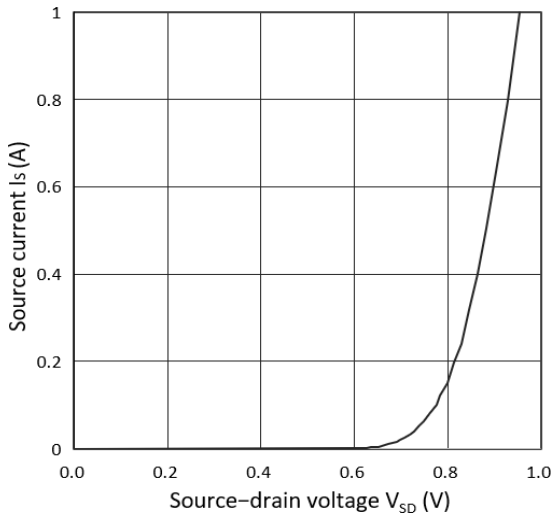
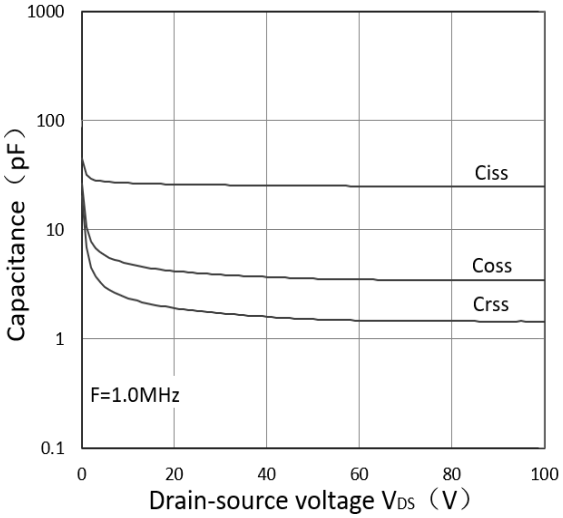
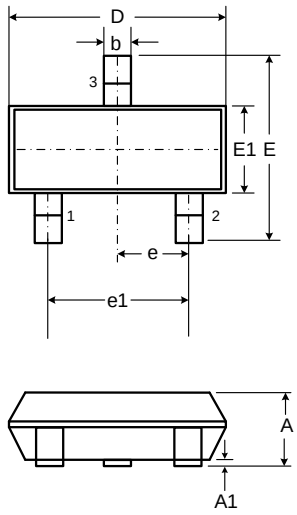


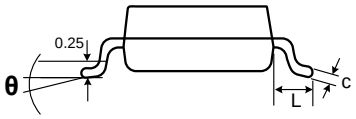
Figure 6. Capacitance Characteristics

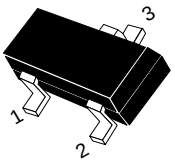


Outline Drawing – SOT-23

PACKAGE OUTLINE

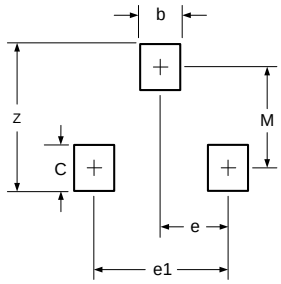






SOT-23

DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
θ	0°	8°	0°	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WM10N02M
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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