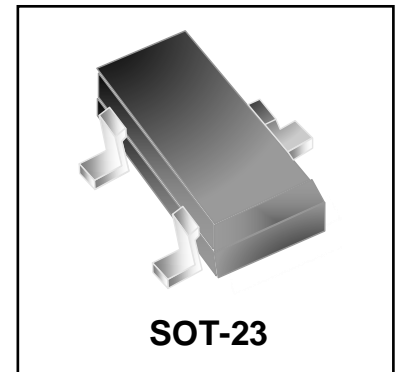


Features

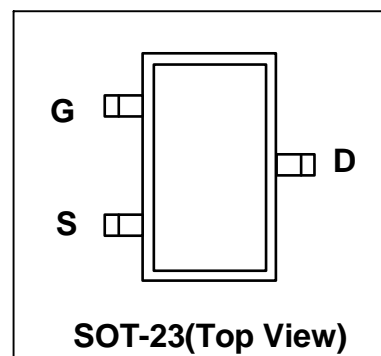
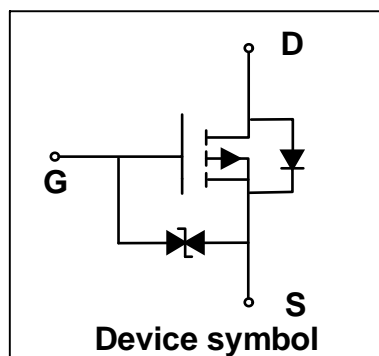
- $V_{DS} = -20\text{ V}$, $I_D = -4.0\text{ A}$
 $R_{DS(on)} < 48\text{ m}\Omega$ @ $V_{GS} = -4.5\text{ V}$
 $R_{DS(on)} < 60\text{ m}\Omega$ @ $V_{GS} = -2.5\text{ V}$
- Excellent $R_{DS(ON)}$
- Low Gate Charge, Low Gate Voltage
- ESD Protected

Mechanical Characteristics

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



Schematic & PIN Configuration



Absolute Maximum Rating ($T_{amb}=25^{\circ}\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-4	A
Pulsed Drain Current ¹	I_{DM}	-16	A
Power Dissipation ¹	P_D	1	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	125	$^{\circ}\text{C/W}$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V	-	-	-1	μA
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V	-	-	±10	μA
Gate-Threshold Voltage ³	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.3	-0.65	-1	V
Drain-Source on-Resistance ³	R _{DS(on)}	V _{GS} = -4.5V, I _D = -4A	-	30	48	mΩ
		V _{GS} = -2.5V, I _D = -4A	-	40	60	
		V _{GS} = -1.8V, I _D = -2A	-	60	100	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f=1.0MHz	-	950	-	pF
Output Capacitance	C _{oss}		-	166	-	
Reverse Transfer Capacitance	C _{rss}		-	120	-	
Switching Characteristics						
Total Gate Charge ⁴	Q _g	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -4A	-	12	-	nC
Gate-Source Charge ⁴	Q _{gs}		-	1.3	-	
Gate-Drain Charge ⁴	Q _{gd}		-	4.5	-	
Turn-on Delay Time ⁴	t _{d(on)}	V _{DS} = -10V, V _{GS} = -4.5V R _L = 2.5Ω, R _{GEN} = 3Ω	-	12	-	ns
Rise Time ⁴	t _r		-	10	-	
Turn-off Delay Time ⁴	t _{d(off)}		-	19	-	
Fall Time ⁴	t _f		-	25	-	
Drain-Source Body Diode Characteristics						
Body Diode voltage	V _{DS}	I _S = -1A, V _{GS} =0V	-	-	-1.0	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

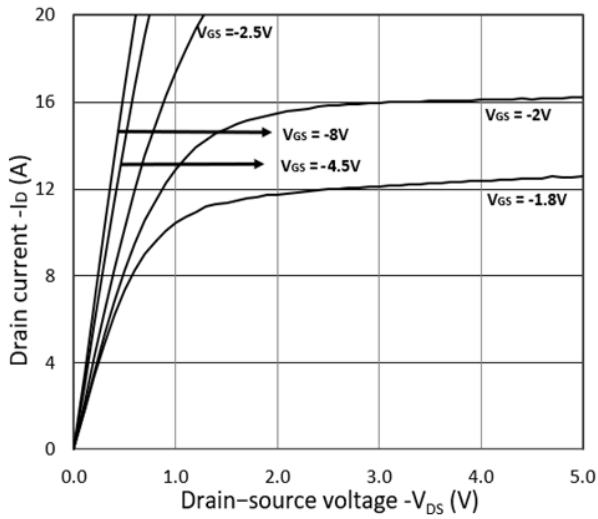


Figure 2. Transfer Characteristics

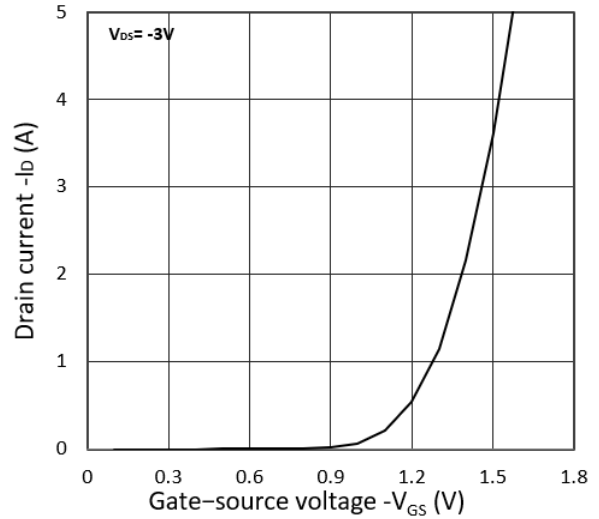


Figure 3. $R_{DS(on)}$ vs. I_D

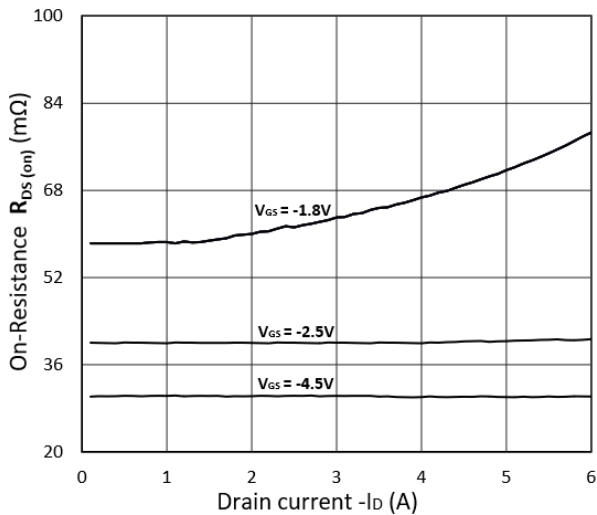


Figure 4. $R_{DS(on)}$ vs. V_{GS}

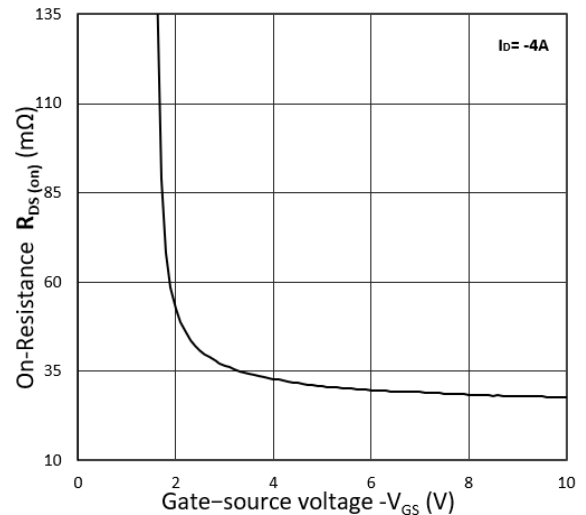


Figure 5. I_S vs. V_{SD}

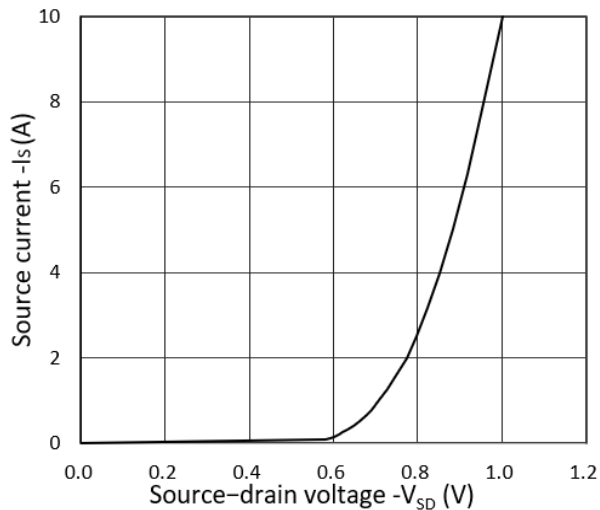
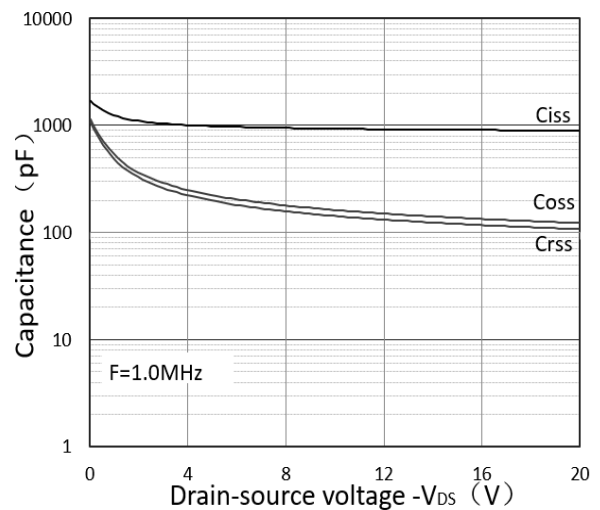
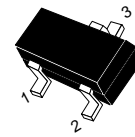
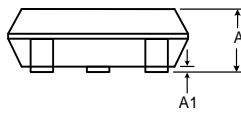
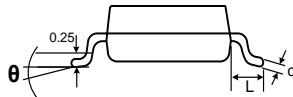
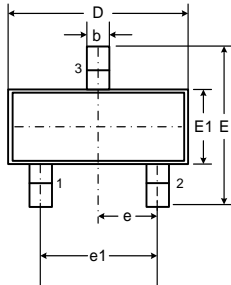


Figure 6. Capacitance Characteristics



Outline Drawing – SOT-23

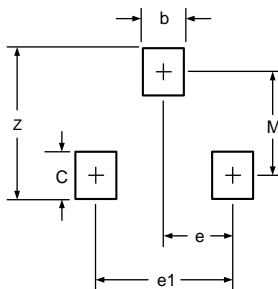
PACKAGE OUTLINE



SOT-23

DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.20	0.035	0.045
A1	0.00	0.15	0.00	0.006
b	0.30	0.50	0.012	0.02
c	0.07	0.20	0.003	0.008
D	2.80	3.00	0.110	0.118
E	2.00	2.70	0.078	0.106
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
theta	0°	8°	0°	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.08	2.02
C	0.032	0.8
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.032	0.8

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	WM02P40M
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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WAYON website: <http://www.way-on.com>

For additional information, please contact your local Sales Representative.

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*Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.*