



WM02P23M

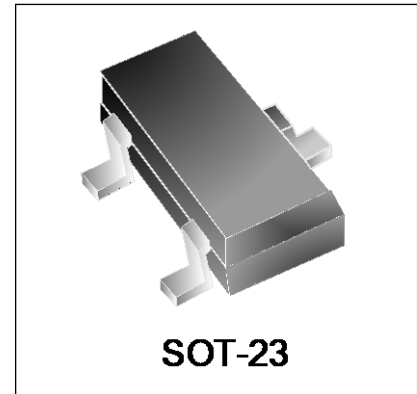
P-Channel MOSFET

Features

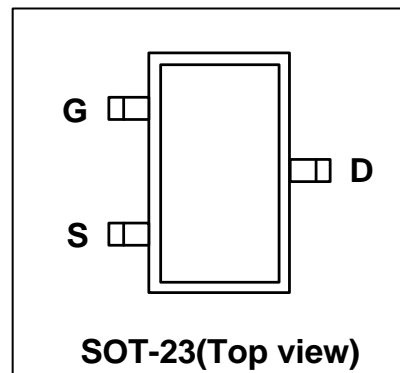
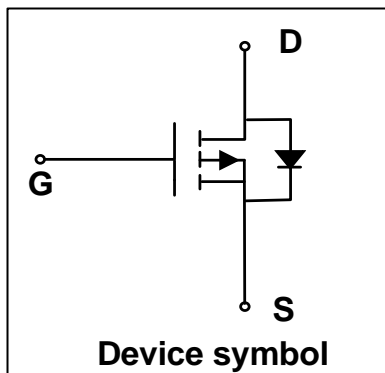
- $V_{DS} = -20\text{ V}$, $I_D = -2.3\text{ A}$
 $R_{DS(on)} < 120\text{ m}\Omega$ @ $V_{GS} = -4.5\text{ V}$
 $R_{DS(on)} < 150\text{ m}\Omega$ @ $V_{GS} = -2.5\text{ V}$
 $R_{DS(on)} < 250\text{ m}\Omega$ @ $V_{GS} = -1.8\text{ V}$
- Low Gate Charge
- Trench Power LV MOSFET Technology

Mechanical Characteristics

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



Schematic & PIN Configuration



Absolute Maximum Rating

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	
Continuous Drain Current ²	I_D	TA=25°C	A
		TA=70°C	
Pulsed Drain Current ²	I_{DM}	-8	
Power Dissipation ²	P_D	0.7	W
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	178	°C/W
Operating Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

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
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.65	-1.0	
Gate-Source Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±10V	-	-	±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V	-	-	-1	μA
Drain-Source on-State Resistance ²	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1.5A	-	90	120	mΩ
		V _{GS} = -2.5V, I _D = -1.5A	-	115	150	
		V _{GS} = -1.8V, I _D = -1.5A	-	165	250	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f= 1MHz	-	290	-	pF
Output Capacitance	C _{oss}		-	47	-	
Reverse Transfer Capacitance	C _{rss}		-	29	-	
Switching Characteristics						
Total Gate Charge	Q _g	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -2A	-	3.9	-	nC
Gate-Source Charge	Q _{gs}		-	0.7	-	
Gate-Drain Charge	Q _{gd}		-	0.9	-	
Turn-on Delay Time ³	t _{d(on)}	V _{DD} = -10V, V _{GS} = -4.5V, I _D = -1A, R _g = 2.5Ω	-	12	-	ns
Rise Time ³	t _r		-	54	-	
Turn-off Delay Time ³	t _{d(off)}		-	15	-	
Fall Time ³	t _f		-	9	-	
Drain-Source Body Diode Characteristics						
Body Diode Voltage	V _{SD}	I _S = -2A, V _{GS} = 0V	-	-	-1.2	V

Notes: 1. Surface mounted on 1" × 1" FR4 board.

2. Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

3. Guaranteed by design, not subject to production testing

Typical Characteristics

Figure 1. Output Characteristics

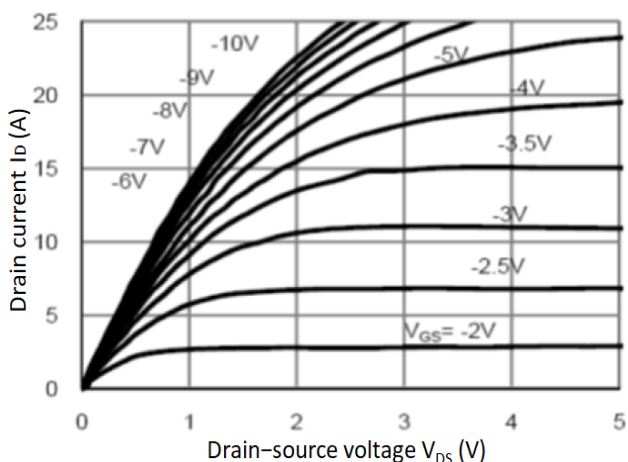


Figure 2. Transfer Characteristics

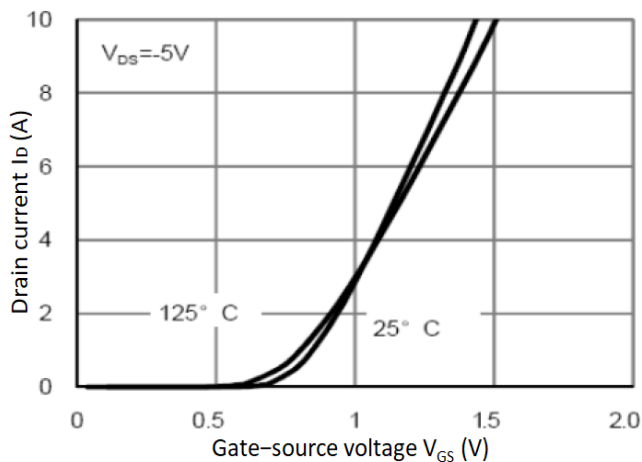


Figure 3. $R_{DS(on)}$ vs. I_D

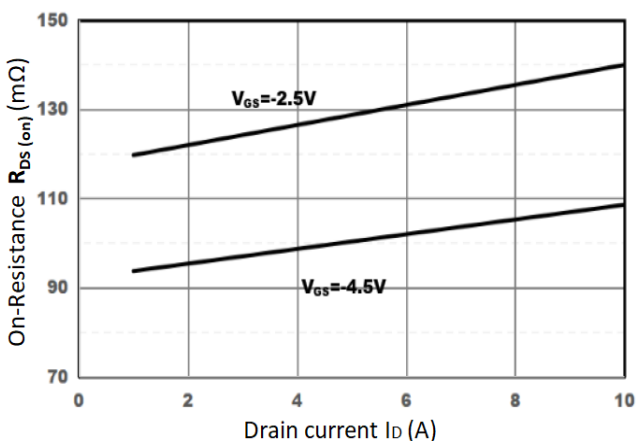


Figure 4. Gate Charge Characteristics

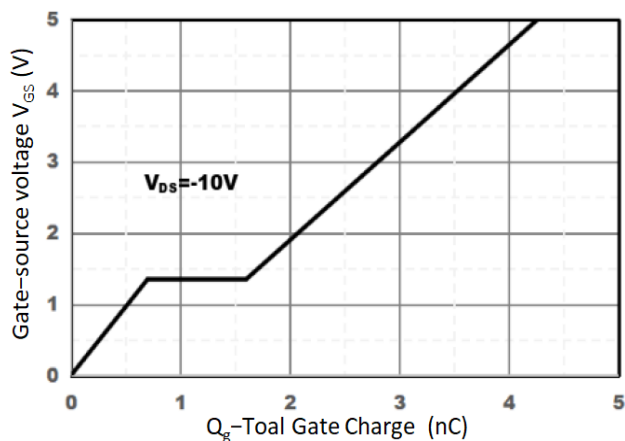


Figure 5. I_S vs. V_{SD}

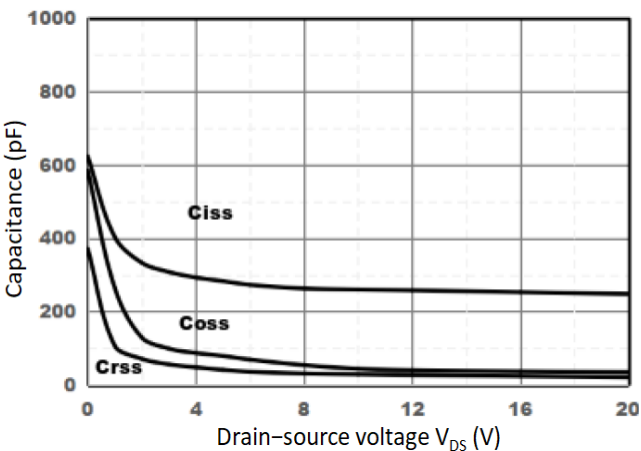
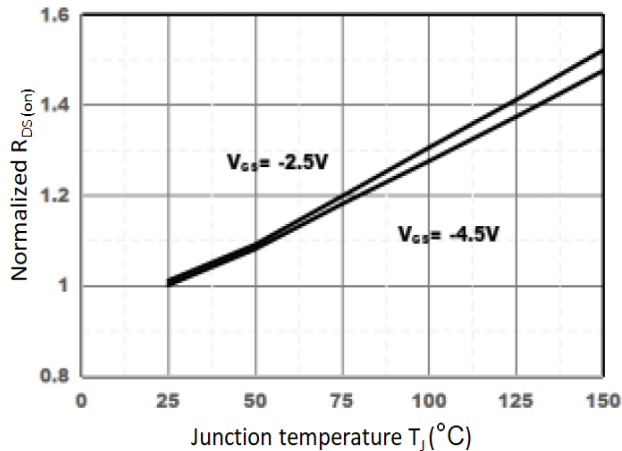


Figure 6. Threshold Voltage



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	1.90 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	WM02P23M
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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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.