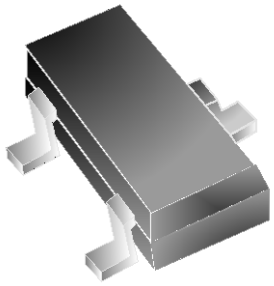
WM05P01M

P-Channel MOSFET

Features

- V_{DS}= -50V, I_D = -0.13A
  $R_{DS(on)}$ < 6.0Ω @ V_{GS} = -10V
  $R_{DS(on)}$ < 7.0Ω @ V_{GS} = -5V
- High-Speed Switching
- Energy Efficient
- Low Threshold Switching
- Miniature Surface Mount Package Saves Board Space

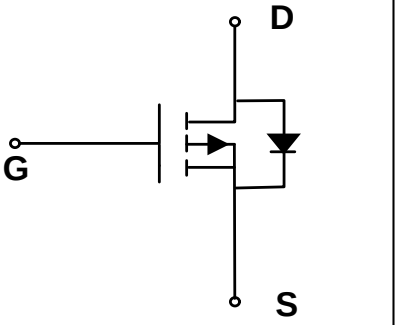


SOT-23

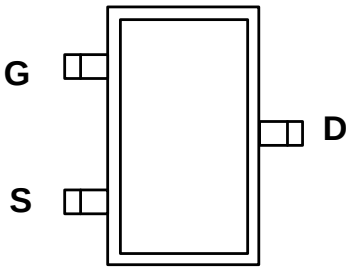
Mechanical Characteristics

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

Schematic & PIN Configuration



Device symbol



SOT-23(Top View)

Absolute Maximum Rating

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-0.13	A
Pulsed Drain Current[1]@tp<10μs	I_{DM}	-0.52	
Power Dissipation	P_D	225	mW
Operating Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	–55 to 150	°C
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	556	°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	$V_{(BR)DSS}$	V_{GS}= 0V, I_D= -250μA	-50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= -50V, V_{GS}= 0V	-	-	-1	μA
Gate-Source Leakage	I_{GSS}	V_{DS}= 0V, V_{GS}= ±20V	-	-	±100	nA
Gate-Source Threshold Voltage[3]	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D= -250μA	-0.8	-1.5	-2.5	V
Drain-Source on-State Resistance[3]	$R_{DS(on)}$	V_{GS}= -10V, I_D= -0.1A	-	1.7	6.0	Ω
		V_{GS}= -4.5V, I_D= -0.1A	-	2.0	7.0	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -5V, f=1.0MHz	-	39	-	pF
Output Capacitance	C_{oss}		-	9	-	
Reverse Transfer Capacitance	C_{rss}		-	4.7	-	
Switching Characteristics						
Turn-on Delay time[4]	$t_{d(on)}$	V_{DD}= -15V ,I_D= -2.5A R_L= 50Ω	-	2.5	-	nS
Rise Time[4]	t_r		-	1	-	
Turn-off Delay Time[4]	$t_{d(off)}$		-	16	-	
Fall Time[4]	t_f		-	8	-	
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I_S= -0.1A, V_{GS}= 0V	-	-	-1.3	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 production.

Typical Characteristics

Figure 1. Output Characteristics

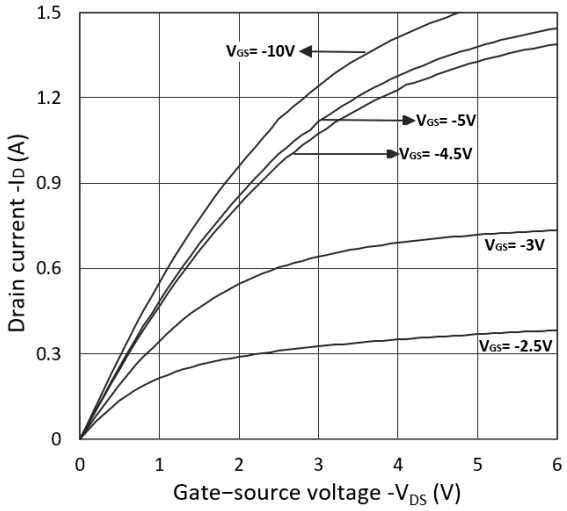


Figure 2. Transfer Characteristics

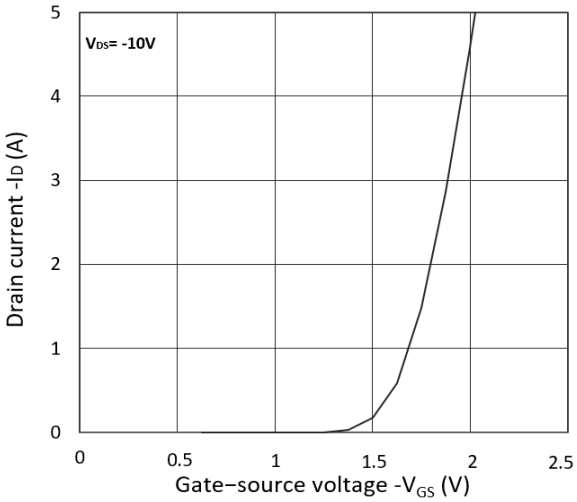


Figure 3. $R_{DS(ON)}$ vs. I_D

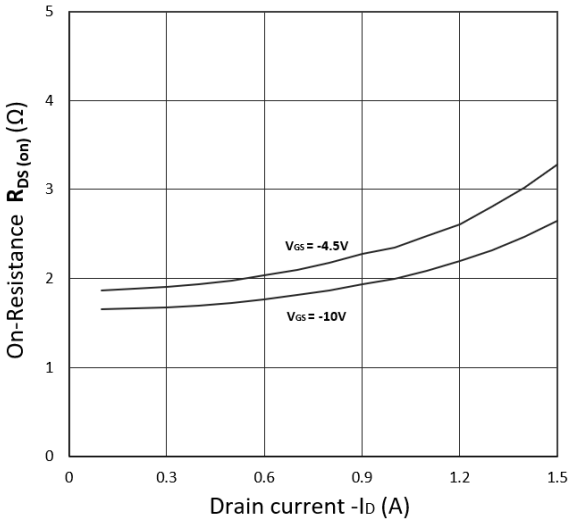


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

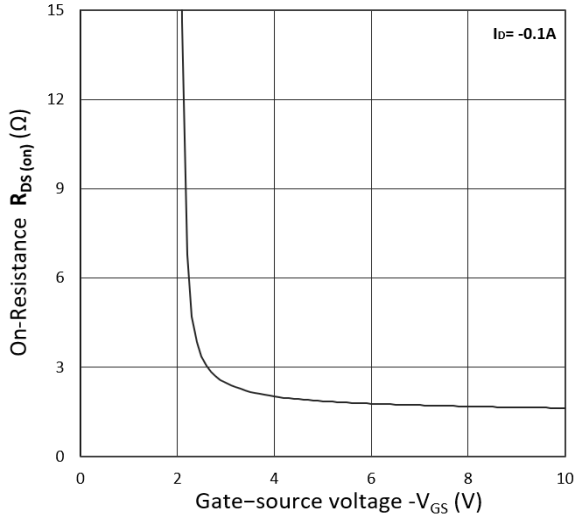


Figure 5.I_S vs. V_{SD}

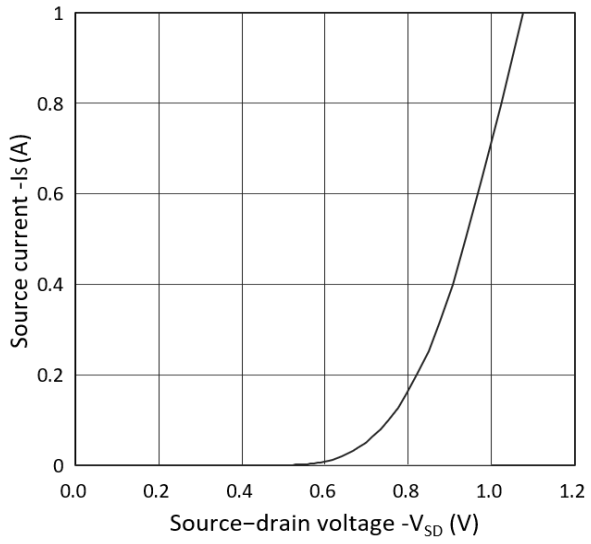
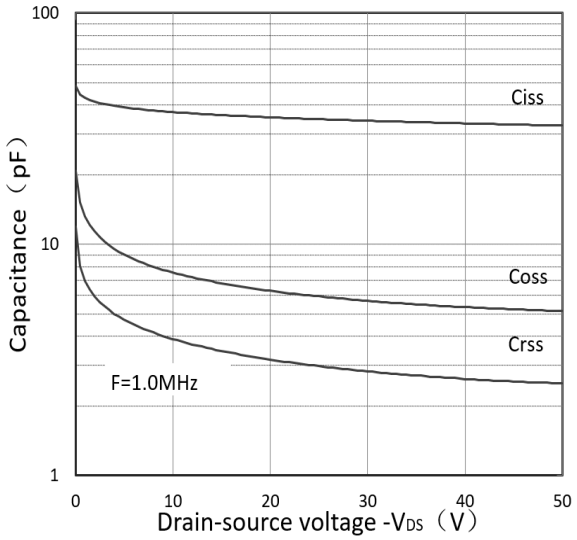
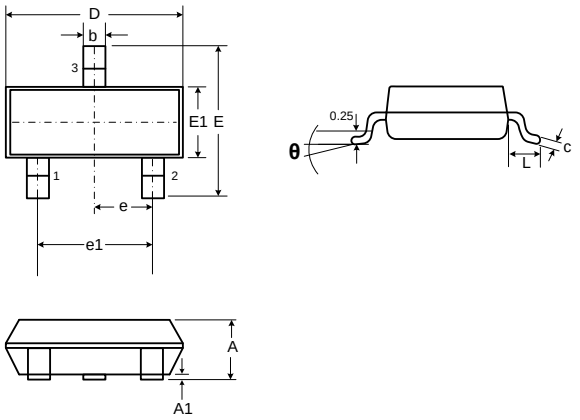


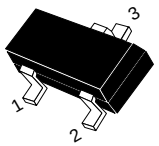
Figure 6. Capacitance Characteristics



Outline Drawing – SOT-23

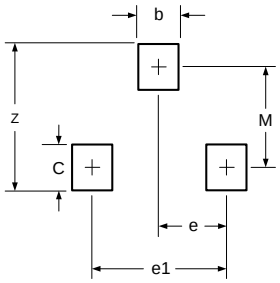
PACKAGE OUTLINE





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**	**1.90 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	WM05P01M
Marking Code	**B84**

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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