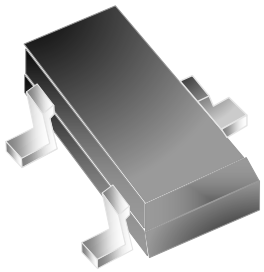
WM03P42M2

P-Channel MOSFET

Features

- V_{DS}= -30V, I_D = -4.2A
  $R_{DS(on)}$ < 60mΩ @ V_{GS} = -10V
  $R_{DS(on)}$ < 70mΩ @ V_{GS} = -4.5V
  $R_{DS(on)}$ < 90mΩ @ V_{GS} = -2.5V
- High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- Exceptional On-Resistance and Maximum DC Current Capability
- Fully Characterized Capacitance and Avalanche Voltage and Current

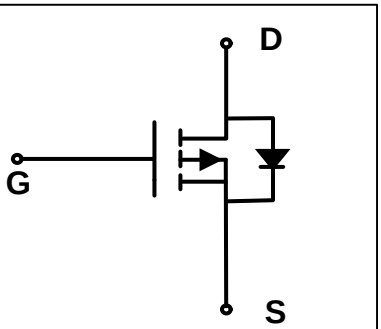


SOT-23-3L

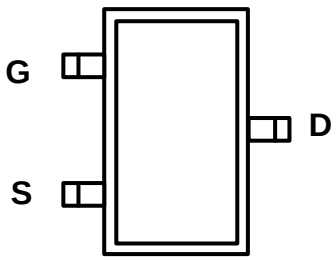
Applications

- Load Switch for Portable Devices
- DC/DC Converter

Schematic & PIN Configuration



Device symbol



SOT-23-3L(Top View)

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	-4.2	A
Power Dissipation	P_D	450	mW
Thermal Resistance from Junction to Ambient (t≤10s)[1]	$R_{\theta JA}$	313	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-30	-	-	V
Gate-Body Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±12V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V	-	-	-1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -4.2A	-	48	60	mΩ
		V_{GS} = -4.5V, I_D = -4A	-	55	70	mΩ
		V_{GS} = -2.5V, I_D = -1A	-	60	90	mΩ
Forward Trans Conductance	g_{fs}	V_{DS} = -5V, I_D = -5A	-	7	-	S
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-0.7	-	-1.3	V
Dynamic characteristics						
Input Capacitance[2]	C_{iss}	V_{DS} = -15V, V_{GS} =0V, f =1MHz	-	1050	-	pF
Output Capacitance[2]	C_{oss}		-	70	-	
Reverse Transfer Capacitance[2]	C_{rss}		-	56	-	
Switching characteristics						
Turn-on Delay Time[3]	$t_{d(on)}$	V_{GS} = -10V, V_{DS} = -15V, R_L = 3.6Ω, R_{GEN} = 6Ω	-	6.5	-	ns
Rise Time[3]	t_r		-	3.5	-	
Turn-off Delay Time[3]	$t_{d(off)}$		-	40	-	
Fall Time[3]	t_f		-	13	-	
Drain-source diode characteristics and maximum ratings						
Diode forward voltage[2]	V_{SD}	I_S = -1A, V_{GS} = 0V	-	-	-1	V

Notes:

1. Surface Mounted on FR4 Board, t ≤ 10 sec.

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

3. Guaranteed by design, not subject to production.

Typical Characteristics

Figure 1. Output Characteristics

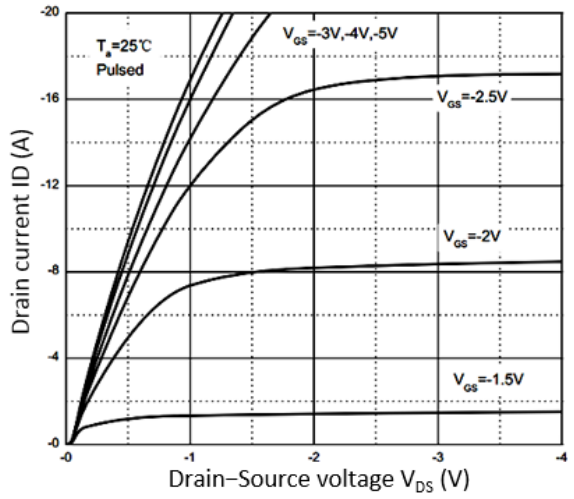


Figure 2. Transfer Characteristics

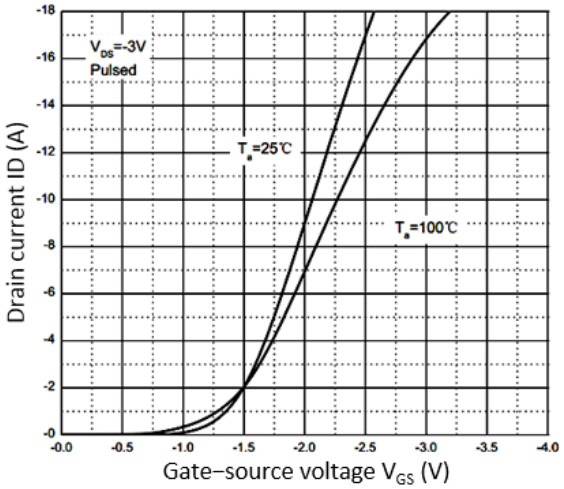


Figure 3. **$R_{DS(on)}$** vs. I_D

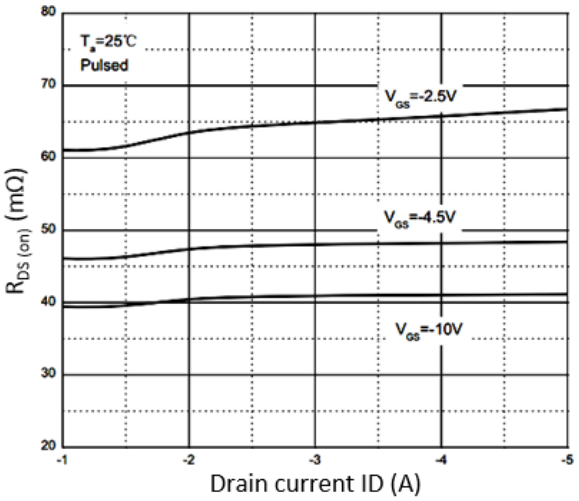


Figure 4. **$R_{DS(on)}$** vs. V_{GS}

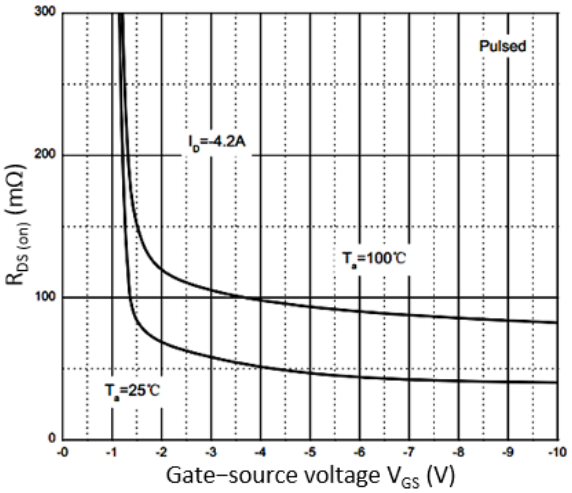


Figure 5. I_S vs. V_{SD}

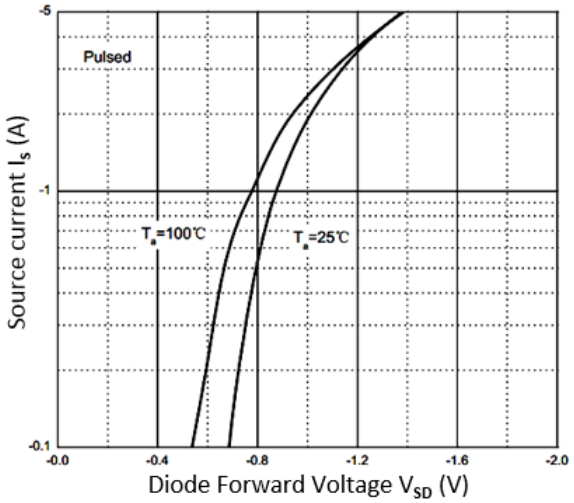
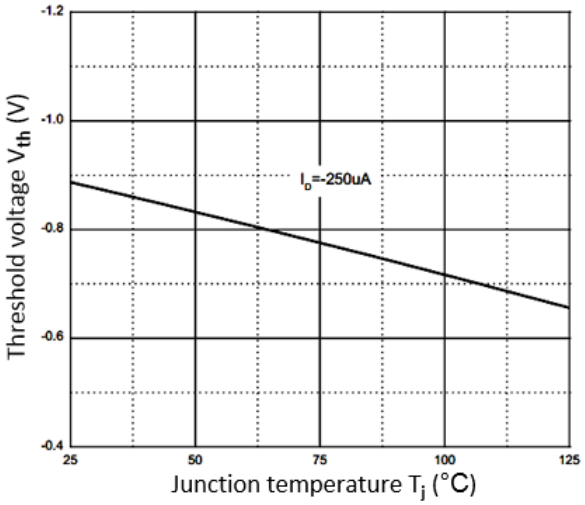
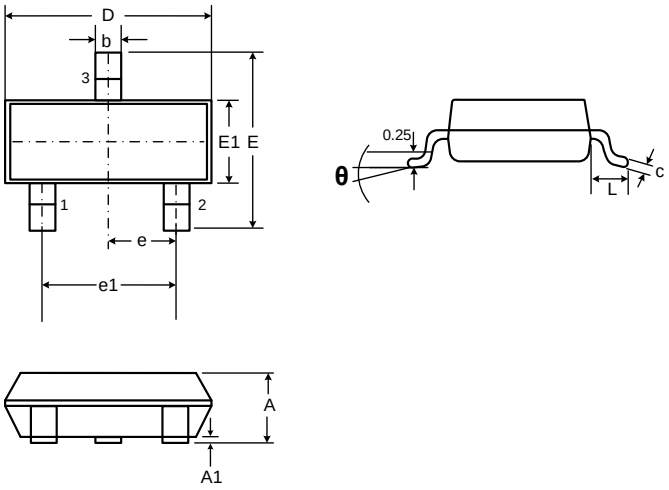


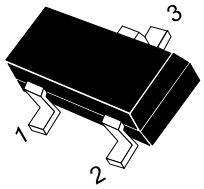
Figure 6. Threshold Voltage vs. T_J



Outline Drawing – SOT-23-3L

PACKAGE OUTLINE

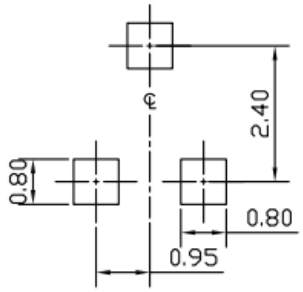




SOT-23-3L

DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.05	1.15	0.041	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.82	3.02	0.111	0.119
E	2.65	2.95	0.104	0.116
E1	1.50	1.70	0.059	0.067
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.55	0.75	0.021	0.029
θ	0	8°	0	8°



Unit:mm

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WM03P42M2
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.