

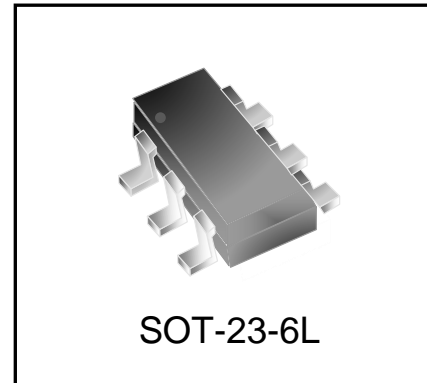


WM03DH34M3

N+P Dual Channel MOSFET

Features

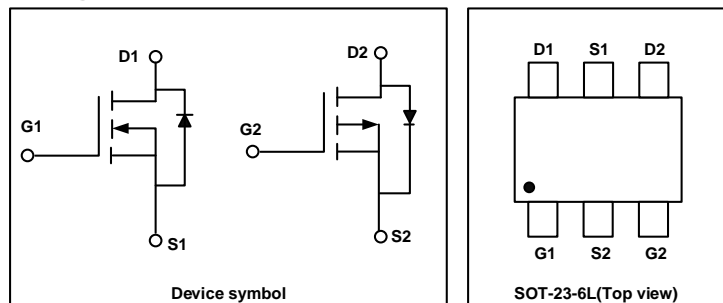
- N - Channel:
 $V_{DS} = 30V$, $I_D = 3.4A$
 $R_{DS(on)} < 47m\Omega$ @ $V_{GS} = 10V$
 $R_{DS(on)} < 65m\Omega$ @ $V_{GS} = 4.5V$
- P - Channel:
 $V_{DS} = -30V$, $I_D = -2.3A$
 $R_{DS(on)} < 88m\Omega$ @ $V_{GS} = -10V$
 $R_{DS(on)} < 138m\Omega$ @ $V_{GS} = -4.5V$
- Low Gate Voltage
- Pb Free Device



Mechanical Characteristics

- SOT-23-6L Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration



Absolute Maximum Ratings

Parameter	Symbol	Value		Unit
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current	I_D	3.4	-2.3	A
Pulsed Drain Current	I_{DM}	30	-30	
Power Dissipation	P_D	0.35	0.35	W
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	357	357	$^{\circ}C/W$
Junction Temperature	T_J	150		$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150		$^{\circ}C$

Electrical Characteristics N-Channel (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	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V _{DS} = 30V, V _{GS} = 0 V	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	V _{DS} = 0 V, V _{GS} = ±20V	-	-	±100	nA
Gate threshold voltage ²	V_{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.5	2	V
Drain-Source On-state Resistance ²	R_{DS(on)}	V _{GS} = 10V, I _D = 3.5A	-	32	47	mΩ
		V _{GS} = 4.5V, I _D = 2A	-	42	65	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	-	295	-	pF
Output Capacitance	C_{oss}		-	43	-	
Reverse Transfer Capacitance	C_{rss}		-	34	-	
Switching Characteristics³						
Total gate charge ⁴	Q_{gt}	V _{GS} =10V, V _{DS} =15V, I _D = 2.5A	-	6	-	nC
Gate-source charge ⁴	Q_{gs}		-	1.6	-	
Gate-drain charge ⁴	Q_{gd}		-	0.6	-	
Turn-On Delay Time	t_{d(on)}	V _{GEN} = 10V, V _{DD} = 15V, R _L = 15Ω, R _g = 6Ω, I _D =1A	-	7	-	nS
Turn-On Rise Time	t_r		-	12	-	
Turn-Off Delay Time	t_{d(off)}		-	14	-	
Turn- Off Fall Time	t_f		-	6	-	
Source-Drain Diode characteristics						
Body Diode Voltage	V_{SD}	I _S = 1A, V _{GS} = 0V	-	-	1.2	V

Electrical Characteristics P-Channel (Tamb=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	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V _{DS} = -30V, V _{GS} = 0 V	-	-	-1	μA
Gate-body Leakage Current	I_{GSS}	V _{DS} = 0 V, V _{GS} = ±24V	-	-	±100	nA
Gate Threshold Voltage	V_{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-3	V
Drain-Source On-state Resistance ¹	R_{DS(on)}	V _{GS} = -10V, I _D = -2.3A	-	62	88	mΩ
		V _{GS} = -4.5V, I _D = -2A	-	84	138	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	-	400	-	pF
Output Capacitance	C_{oss}		-	50	-	
Reverse Transfer Capacitance	C_{rss}		-	40	-	
Switching Characteristics²						
Total Ggate Charge	Q_g	V _{GS} = -4.5V, V _{DS} = -15V, I _D = -2.5A	-	4.1	-	nC
Gate-Source Charge	Q_{gs}		-	1.2	-	
Gate-Drain Charge	Q_{gd}		-	1.7	-	
Turn-On Delay Time	t_{d(on)}	V _{DS} = -15V, V _{GS} = -10V, R _L = 6Ω, R _{GEN} =10Ω	-	13	-	ns
Turn-On Rise Time	t_r		-	10	-	
Turn-Off Delay Time	t_{d(off)}		-	28	-	
Turn- Off Fall Time	t_f		-	13	-	
Source-Drain Diode characteristics						
Body Diode Voltage	V_{DS}	I _S = -1A, 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: N-CHANNEL

Figure 1. Output Characteristics

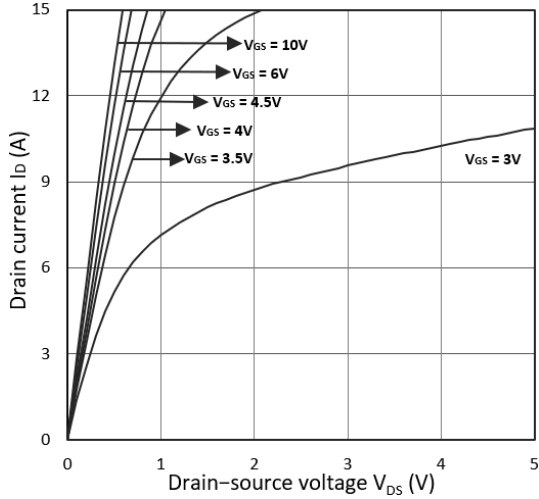


Figure 2. Transfer Characteristics

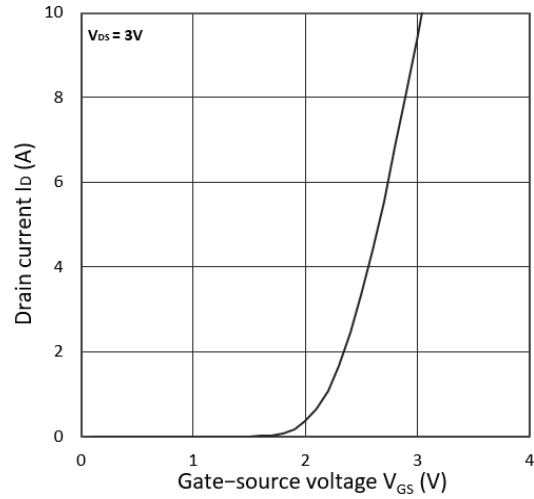


Figure 3. $R_{DS(on)}$ vs. I_D

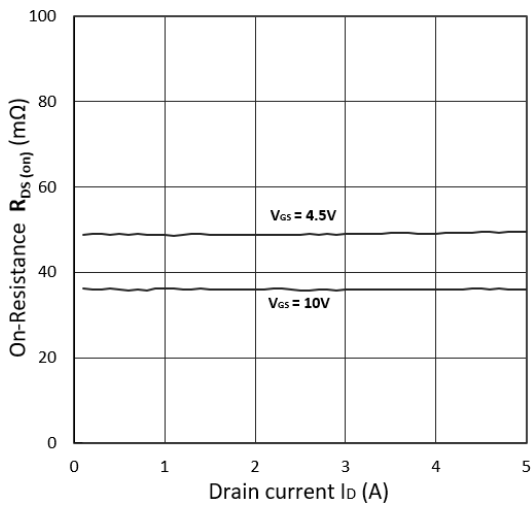


Figure 4. $R_{DS(on)}$ vs. V_{GS}

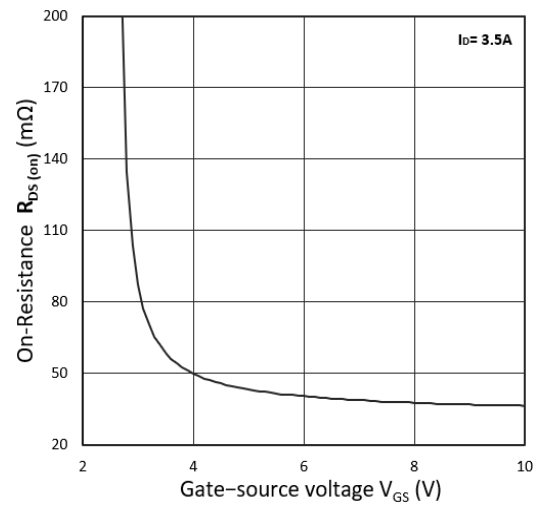


Figure 5. I_S vs. V_{SD}

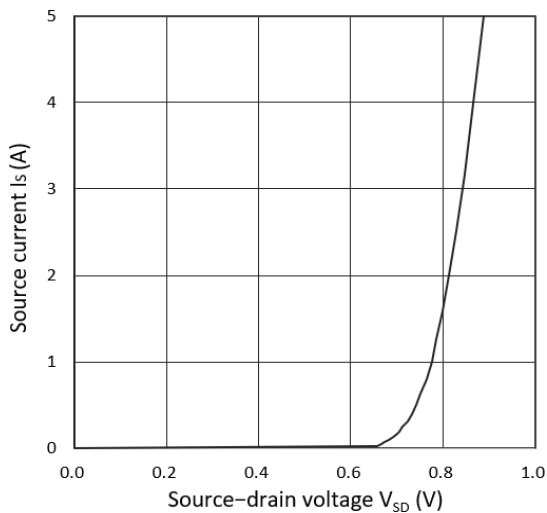
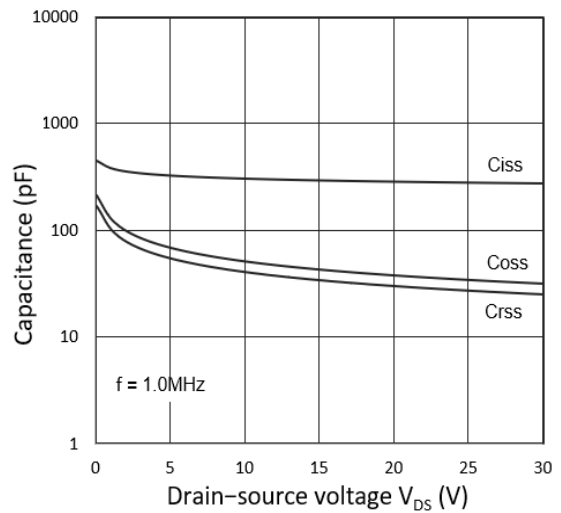


Figure 6. Capacitance Characteristics



Typical Characteristics: P-CHANNEL

Figure 1. Output Characteristics

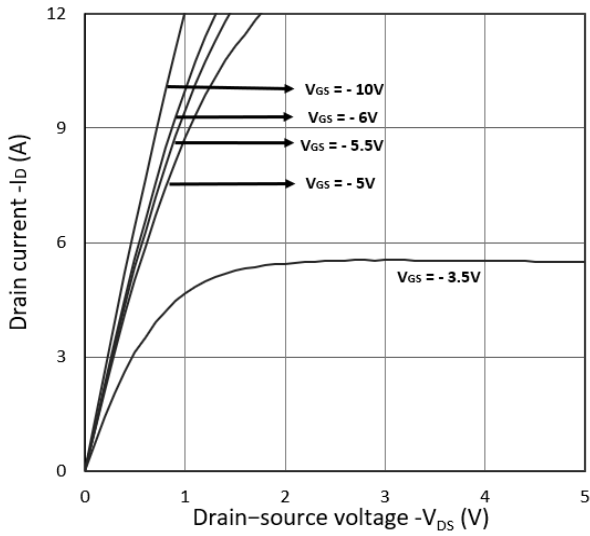


Figure 2. Transfer Characteristics

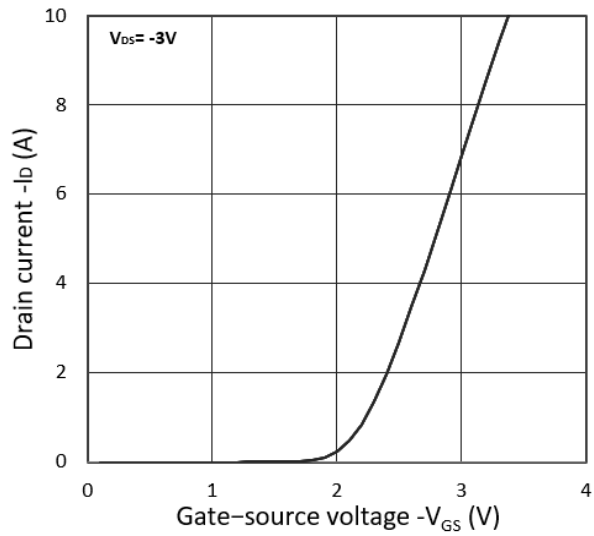


Figure 3. $R_{DS(ON)}$ vs. I_D

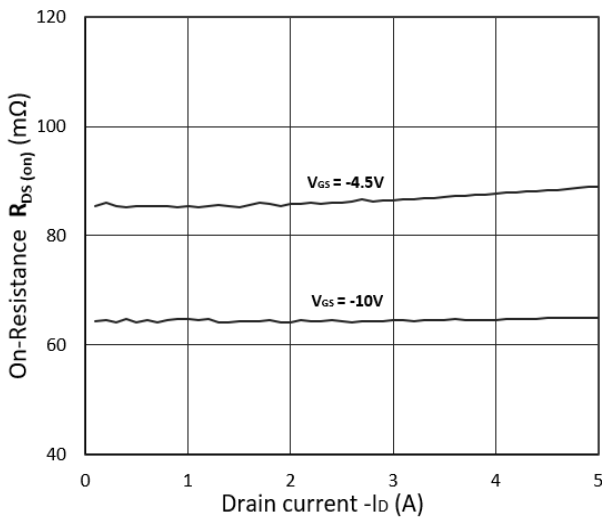


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

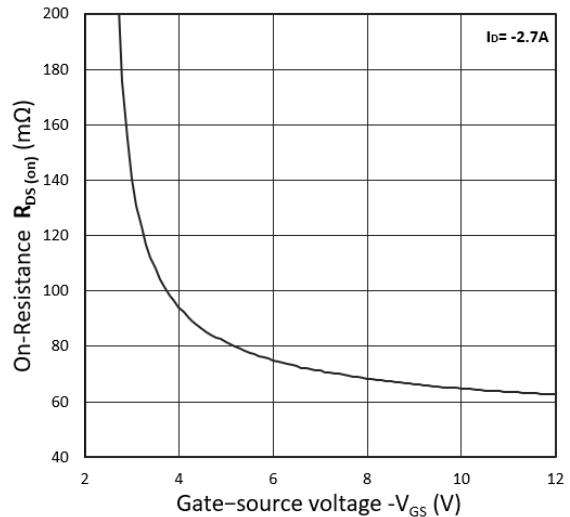


Figure 5. I_S vs. V_{SD}

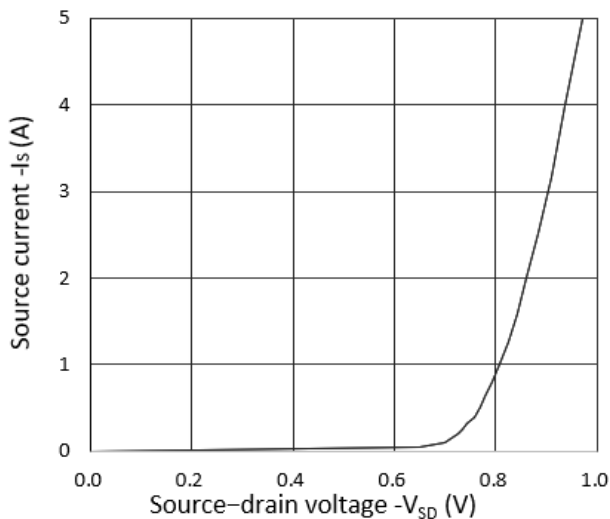
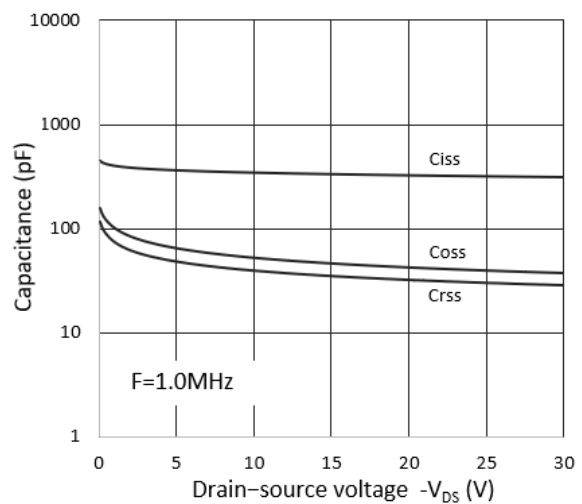


Figure 6. Capacitance Characteristics



Outline Drawing – SOT-23-6L

PACKAGE OUTLINE

SOT-23-6L

DIMENSIONS

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.057	0.90	1.45
A1	0.000	0.006	0.00	0.15
b	0.010	0.021	0.25	0.55
c	0.003	0.008	0.08	0.22
D	0.110	0.122	2.80	3.10
E1	0.060	0.069	1.50	1.75
E	0.102	0.118	2.60	3.00
e	0.037 BSC		0.95 BSC	
e1	0.075 BSC		1.90 BSC	
L	0.012	0.024	0.30	0.60
L1	0.022	0.030	0.55	0.75
θ 1	0°	8°	0°	8°

DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	0.098	2.50
G	0.055	1.40
P	0.037	0.95
X	0.024	0.60
Y	0.043	1.10
Z	0.141	3.60

Notes:
Controlling Dimension: Millimeter.

Marking Codes

Part Number	WM03DH34M3
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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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.