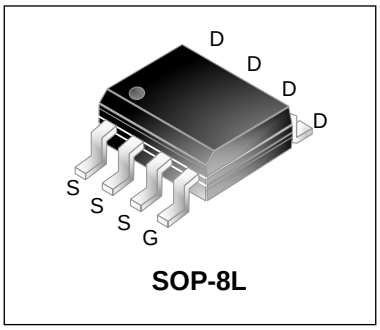
WM03P51A

P-Channel MOSFET

Features



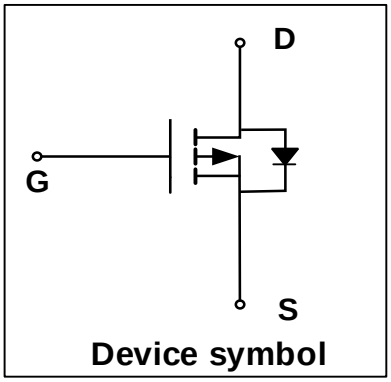
SOP-8L

- V_{DS}= -30 V, I_D = -5.1 A
  $R_{DS(on)}$ < 60mΩ @ V_{GS} = -10V
  $R_{DS(on)}$ < 70mΩ @ V_{GS} = - 6V
  $R_{DS(on)}$ < 82mΩ @ V_{GS} = - 4.5V
- Low Gate Charge
- Fast Switching Speed
- Extremely Low $R_{DS(ON)}$
- High Power and Current Handling Capability

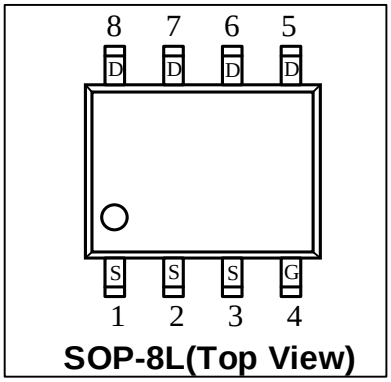
Mechanical Characteristics

- SOP-8L Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration



Device symbol



SOP-8L(Top View)

Absolute Maximum Rating (T_{amb}=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source voltage	V_{DS}	-30	V
Gate-Source voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-5.1	A
Pulsed Drain Current[1]	I_{DM}	-20	A
Power Dissipation[1]	P_D	2.5	W
Operating Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	–55 to 150	°C
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	50	°C/W

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

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
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V	-	-	-1	μA
Gate-body Leakage current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0	-1.5	-2.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -4.6A	-	42	60	mΩ
		V_{GS} = -6V, I_D = -4.1A	-	50	70	
		V_{GS} = -4.5V, I_D = -2A	-	60	82	
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} = -15V, V_{GS} =0V, f =1MHz	-	450	-	pF
Output Capacitance	C_{oss}		-	76	-	
Reverse Transfer Capacitance	C_{rss}		-	60	-	
Switching characteristics [2]						
Total Gate Charge	Q_g	V_{GS} = -10V,I_D = -5.4A, V_{DS} = -15V	-	13	-	nC
Gate-Source Charge	Q_{gs}		-	1.3	-	
Gate-Drain Charge	Q_{gd}		-	3.1	-	
Turn-On Delay Time	$t_{d(on)}$	V_{GS} = -10V, V_{DD} = -15V, R_{GEN} = 6Ω, R_L = 15Ω	-	8	-	ns
Rise Time	t_r		-	13	-	
Turn-Off Delay Time	$t_{d(off)}$		-	26	-	
Fall Time	t_f		-	7	-	
Drain-source diode characteristics and maximum ratings						
Diode Forward Voltage [1]	V_{SD}	I_S = -2.6A, 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

Figure 1. Output Characteristics

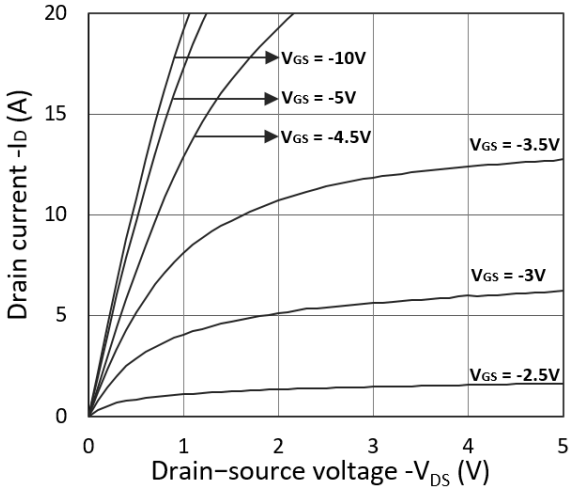


Figure 2. Transfer Characteristics

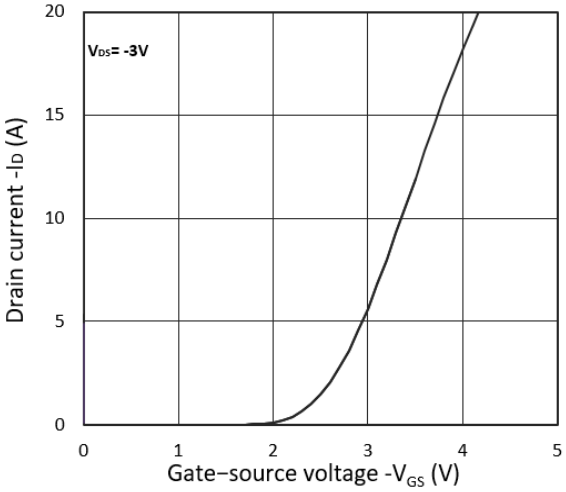


Figure 3. $R_{DS(on)}$ vs. I_D

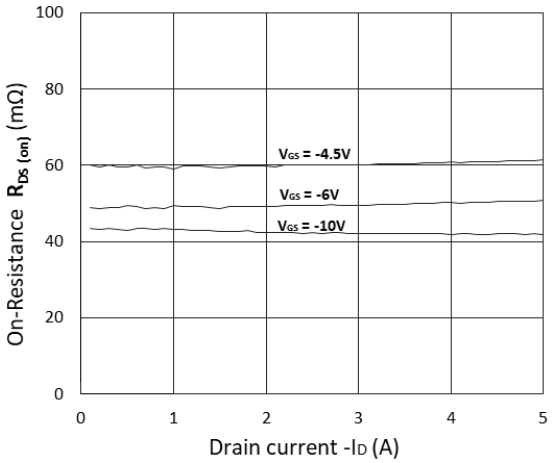


Figure 4. $R_{DS(on)}$ vs. V_{GS}

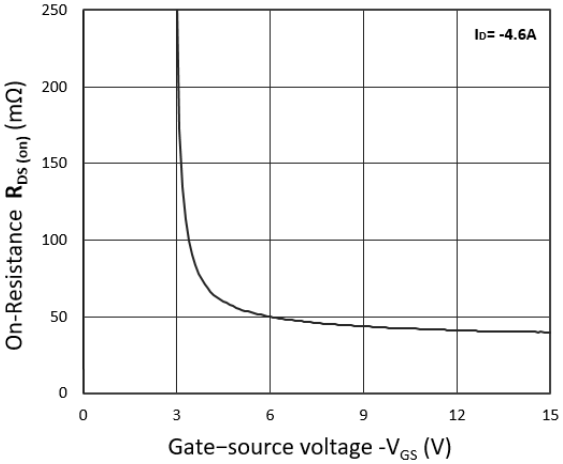


Figure 5. I_S vs. V_{SD}

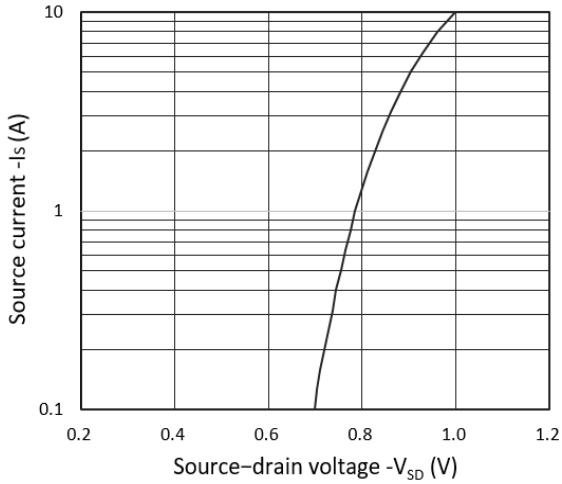
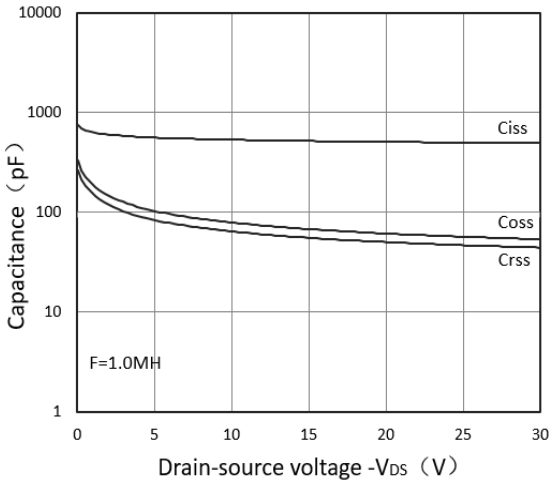
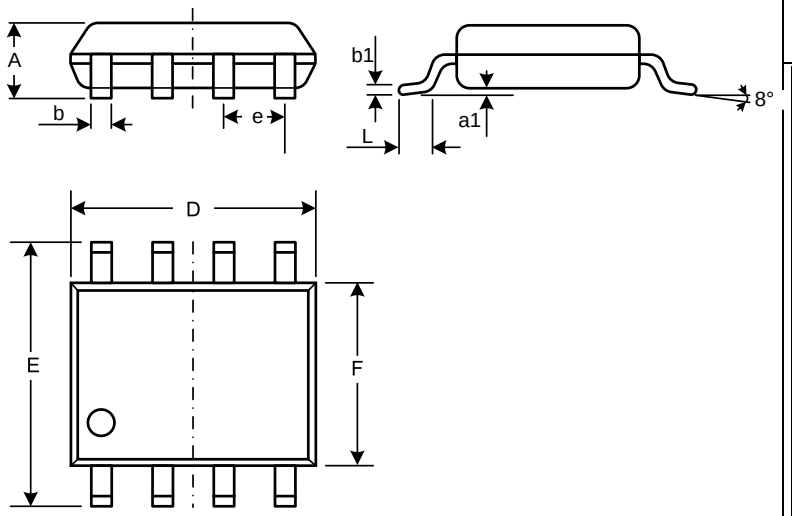


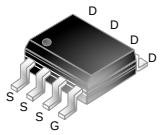
Figure 6. Capacitance Characteristics



Outline Drawing – SOP-8L

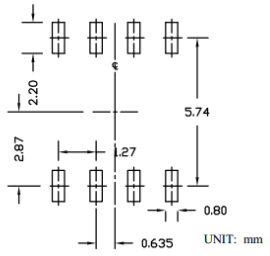
PACKAGE OUTLINE





SOP-8L

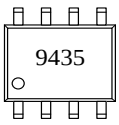
SYMBOL	MM	
	MIN	MAX
A	1.23	1.75
a1	0.05	0.25
b	0.31	0.51
b1	0.16	0.25
D	4.70	5.15
E	5.75	6.25
e	1.07	1.47
F	3.70	4.10
L	0.40	1.27



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	WM03P51A
Marking Code	

Package Information

Qty： 4k/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.