

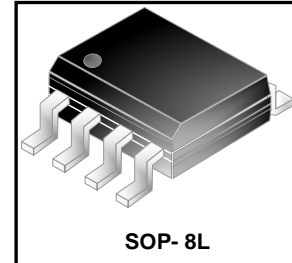


WM03N105A

N-Channel MOSFET

Features

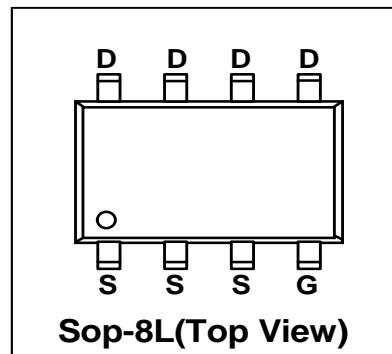
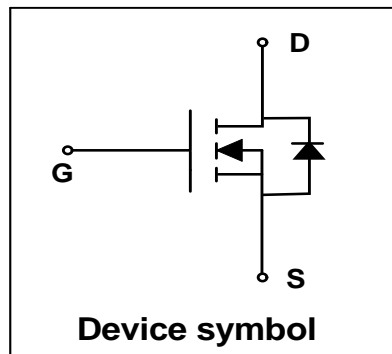
- $V_{DS} = 30V$, $I_D = 10.5A$
 $R_{DS(on)} < 23m\Omega @ V_{GS} = 10V$
 $R_{DS(on)} < 32m\Omega @ V_{GS} = 4.5V$
- Surface Mount Package
- Fast Switching Speed



Mechanical Characteristics

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

Schematic & PIN Configuration



Absolute Maximum Rating

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current	I_D	$T_C = 25^\circ C$	10.5	A
		$T_C = 70^\circ C$	6.4	A
Pulsed Drain Current ¹	I_{DM}	55	A	
Power Dissipation	P_D	2.9	W	
Operating Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$	
Maximum Junction-to-Ambient	$R_{\theta JA}$	43	$^\circ C/W$	

Electrical Characteristics ($T_{amb}=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
Gate-Threshold Voltage ³	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.75	2.5	V
Drain-Source On-Resistance ³	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$	-	13.5	23	m Ω
		$V_{GS} = 4.5V, I_D = 5A$	-	20.5	32	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V,$ $f = 1MHz$	-	511	-	pF
Output Capacitance	C_{oss}		-	77	-	
Reverse Transfer Capacitance	C_{rss}		-	55	-	
Switching Characteristics						
Total Gate Charge ⁴	Q_g	$V_{GS} = 4.5V, I_D = 10A,$ $V_{DS} = 15V$	-	2.9	-	nC
Total Gate Charge ⁴	Q_g	$V_{GS} = 10V, I_D = 10A,$ $V_{DS} = 15V$	-	7.7	-	
Gate-Source Charge ⁴	Q_{gs}		-	1.4	-	
Gate-Drain Charge ⁴	Q_{gd}		-	1.8	-	
Turn-On Delay Time ⁴	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 1.5\Omega, R_{GEN} = 3\Omega$	-	4.5	-	nS
Rise Time ⁴	t_r		-	3.0	-	
Turn-Off Delay Time ⁴	$t_{d(off)}$		-	16.2	-	
Fall Time ⁴	t_f		-	4.2	-	
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	$I_S = 1A, V_{GS} = 0V$	-	-	1.0	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 $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to product

Typical Characteristics

Figure 1. Output Characteristics

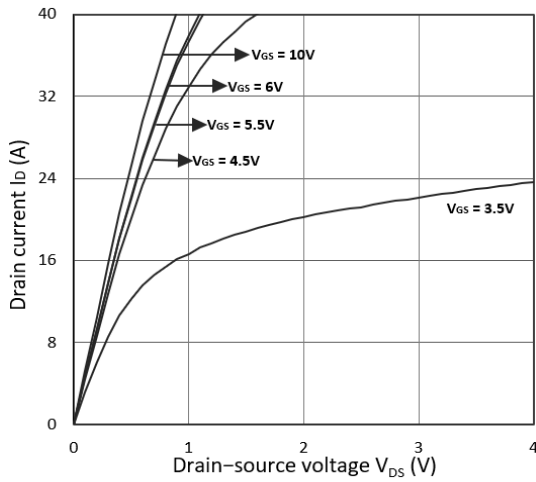


Figure 2. Transfer Characteristics

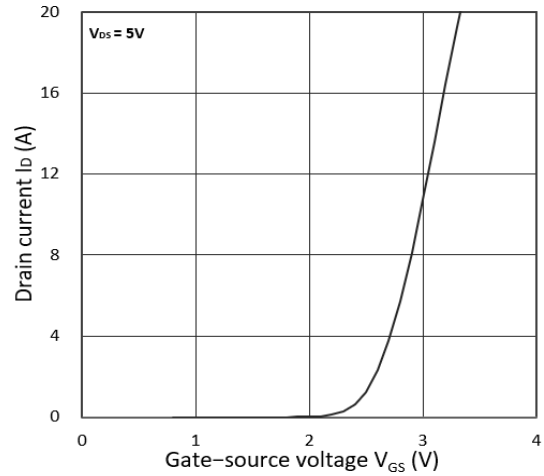


Figure 3. $R_{DS(on)}$ vs. I_D

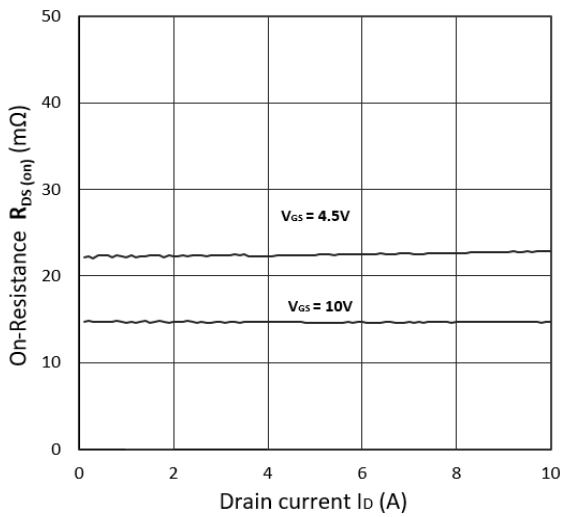


Figure 4. $R_{DS(on)}$ vs. T_J

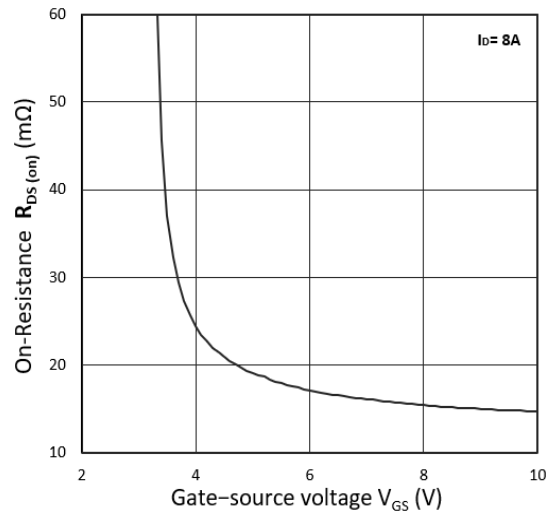


Figure 5. I_S vs. V_{SD}

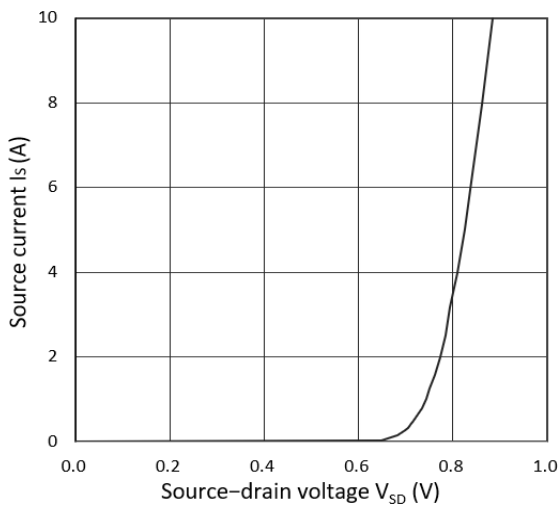
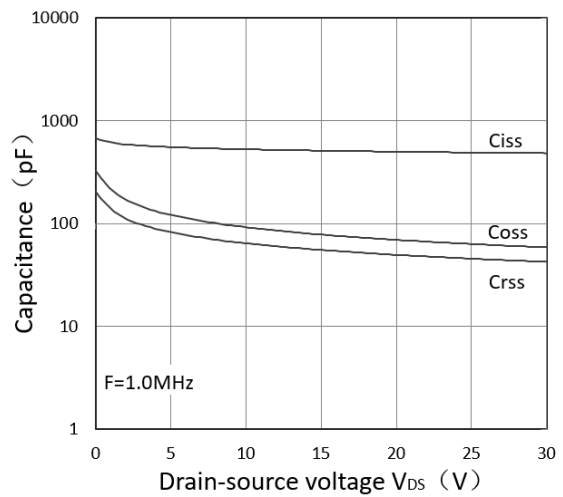


Figure 6. Capacitance Characteristic



Outline Drawing – SOP-8L

PACKAGE OUTLINE

SOP-8L

DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
L				
A	1.23	1.75	0.048	0.069
a1	0.05	0.25	0.002	0.010
b	0.31	0.51	0.012	0.020
b1	0.16	0.25	0.006	0.010
D	4.70	5.15	0.185	0.203
E	5.75	6.25	0.226	0.246
e	1.07	1.47	0.042	0.058
F	3.70	4.10	0.146	0.161
L	0.40	1.27	0.016	0.050

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	WM03N105A
Marking Code	

Package Information

Qty: 4k/Reel

CONTACT INFORMATION

No.1001, Shiwan (7) Road, Pudong District, Shanghai, P.R.China.201207
 Tel: 86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com
 WAYON website: <http://www.way-on.com>
 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.