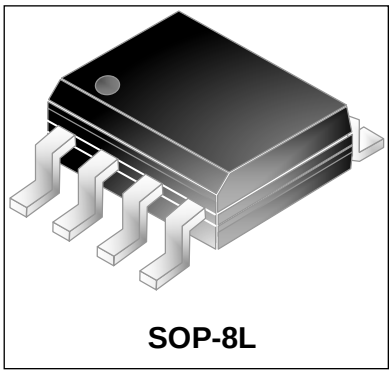
WM02DN48A

Dual N-Channel MOSFET

Features

- V_{DS}= 20V, I_D = 4.8A
  $R_{DS(on)}$ < 30mΩ @ V_{GS} = 4.5V
  $R_{DS(on)}$ < 40mΩ @ V_{GS} = 2.5V
- Trench Power MOSFET
- Fast Switching Speed
- Low On-Resistance
- Green Device Available

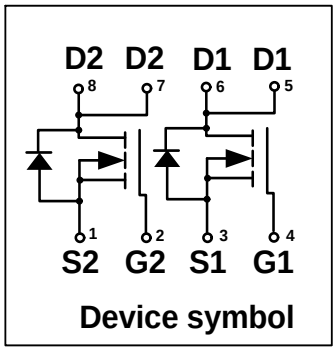


SOP-8L

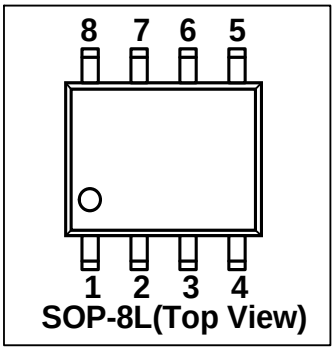
Mechanical Characteristics

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

Schematic & PIN Configuration



Device symbol



SOP-8L(Top View)

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	4.8	A
Pulsed Drain Current[2]	I_{DM}	30	
Power Dissipation	P_D	1.25	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to+150	
Thermal Resistance from Junction-to-Ambient [1]	$R_{\theta JA}$	100	°C/W

Electrical Characteristics (T_{amb}=25°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 = 250μA	20	-	-	V
Gate-body Leakage current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±12V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V	-	-	1	μA
Gate-Threshold Voltage[3]	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.5	0.7	1.2	V
Drain-Source On-Resistance[3]	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 4.8A	-	20	30	mΩ
		V_{GS} = 2.5V, I_D = 4A	-	25	40	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} =10V, V_{GS} =0V, f =1MHz	-	515	-	pF
Output Capacitance	C_{oss}		-	73	-	
Reverse Transfer Capacitance	C_{rss}		-	65	-	
Switching Characteristics						
Total Gate Charge[4]	Q_g	V_{GS} = 4.5V, I_D = 3A, V_{DS} = 10V	-	10	-	nC
Gate-Source Charge[4]	Q_{gs}		-	1.5	-	
Gate-Drain Charge[4]	Q_{gd}		-	1.6	-	
Turn-On Delay Time[4]	$t_{d(on)}$	V_{GEN} =4.5V, V_{DD}= 10V, I_D = 1A, R_{GEN} = 6Ω	-	8	-	nS
Turn-On Rise Time[4]	t_r			9	-	
Turn-Off Delay Time[4]	$t_{d(off)}$		-	15	-	
Turn-Off Fall Time[4]	t_f		-	4	-	
Source-Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	I_S = 1.7A, V_{GS} = 0V	-	-	1.2	V

Notes

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, t≤10s.
3. Pulse Test: Pulse Width≤80μs, Duty Cycle≤0.5%.
4. Guaranteed by design, not subject to production.

Typical Characteristics

Figure 1. Output Characteristics

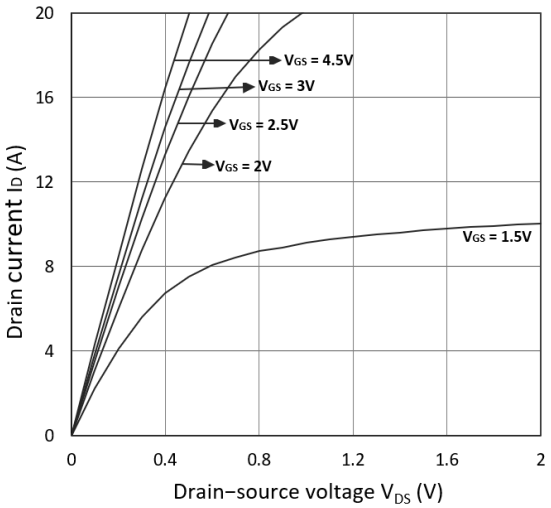


Figure 2. Transfer Characteristics

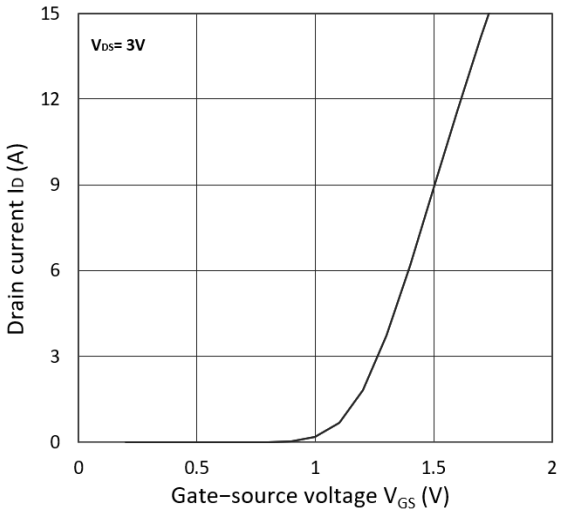


Figure 3. $R_{DS(on)}$ vs. I_D

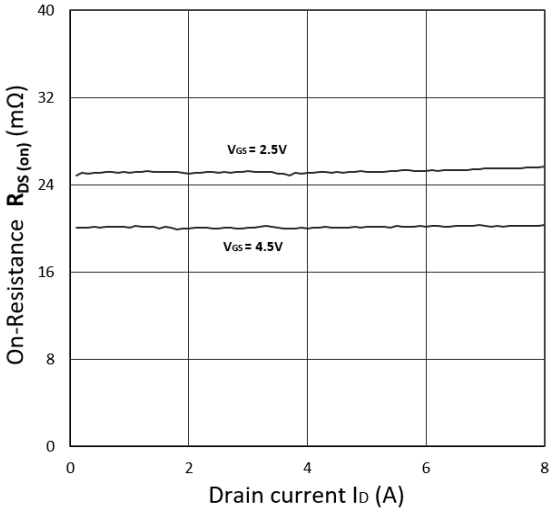


Figure 4. $R_{DS(on)}$ vs. V_{GS}

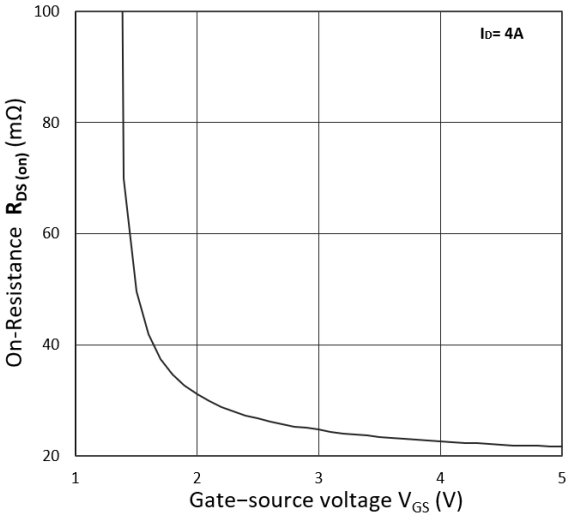


Figure 5. I_S vs. V_{SD}

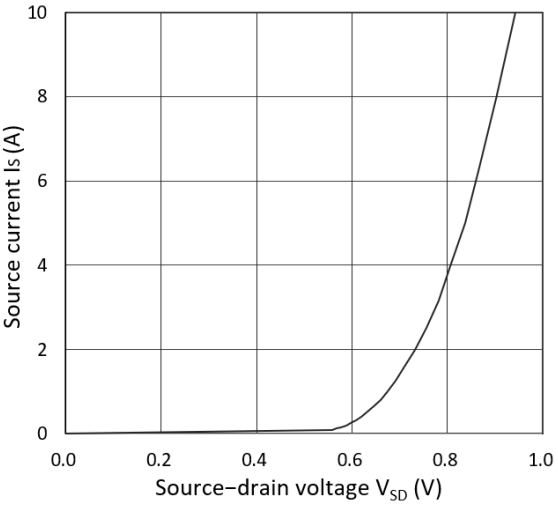
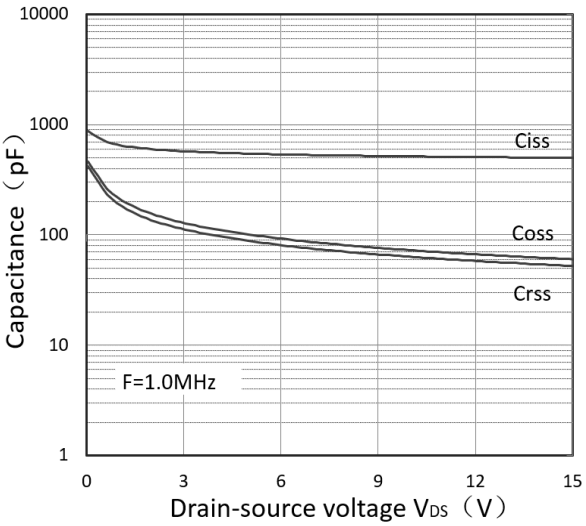
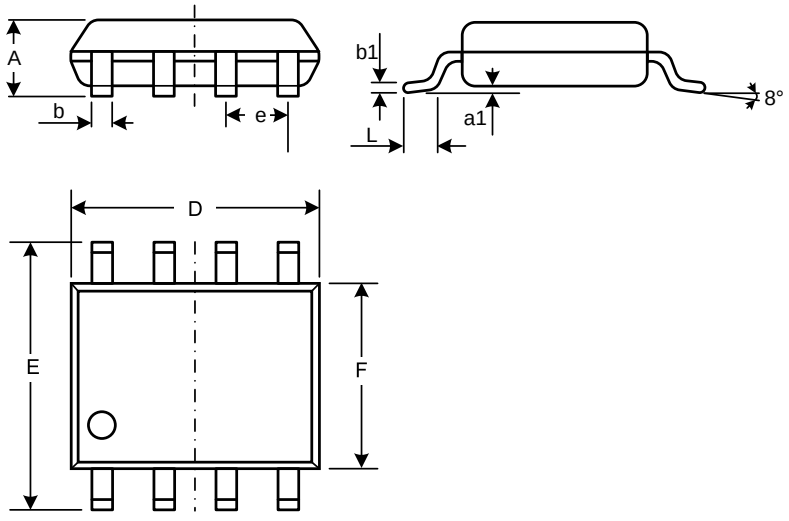


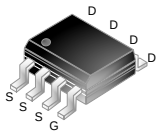
Figure 6. Capacitance Characteristics



Outline Drawing – SOP-8L

PACKAGE OUTLINE

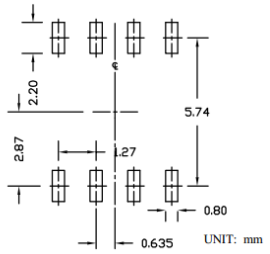




SOP-8L

DIMENSIONS

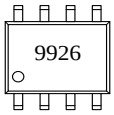
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.23	1.75	0.048	0.069
a1	0.05	0.25	0.002	0.010
b	0.31	0.51	0.012	0.020
b1	0.16	0.25	0.006	0.010
D	4.70	5.15	0.185	0.203
E	5.75	6.25	0.226	0.246
e	1.07	1.47	0.042	0.058
F	3.70	4.10	0.146	0.161
L	0.40	1.27	0.016	0.050



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	WM02DN48A
Marking Code	

Package Information

Qty： 4k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.