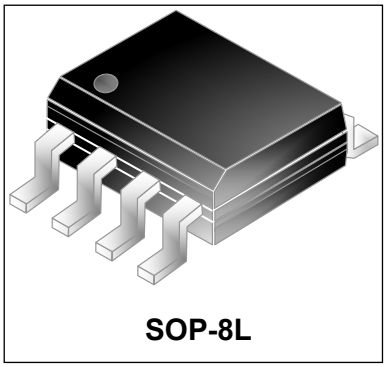
WM03DH60A

N+P Dual Channel MOSFET

Features

- N - Channel:
  V_{DS}= 30V, I_D = 5.8A
  $R_{DS(on)}$ < 36 mΩ @ V_{GS} = 10V
  $R_{DS(on)}$ < 45 mΩ @ V_{GS} = 4.5V
- P - Channel:
  V_{DS}= -30V, I_D = -6A
  $R_{DS(on)}$ < 24 mΩ @ V_{GS} = -10V
  $R_{DS(on)}$ < 35 mΩ @ V_{GS} = -4.5V
- Low Gate Voltage
- Pb Free Device

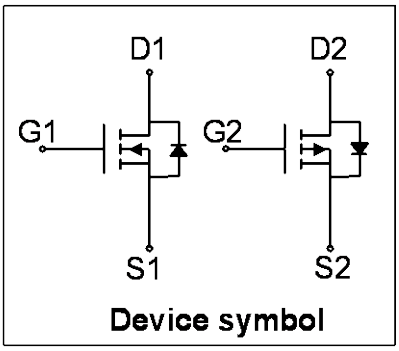


SOP-8L

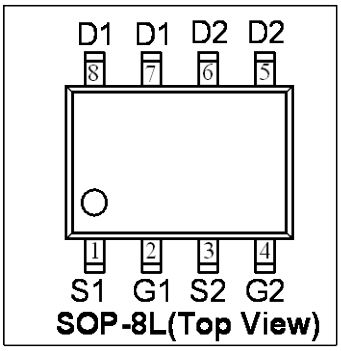
Mechanical Characteristics

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

Schematic & PIN Configuration



Device symbol



SOP-8L(Top View)

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	5.8	-6	A
Pulsed Drain Current	I_{DM}	30	-30	
Power Dissipation	P_D	2.1		W
Thermal Resistance from Junction to Ambient [1]	$R_{\theta JA}$	59.5		°C/W
Junction Temperature	T_J	150		°C
Storage Temperature Range	T_{STG}	-55 to+150		°C

Electrical Characteristics N-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} = ±20V	-	-	±100	nA
Gate threshold voltage [2]	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.0	1.5	2.5	V
Drain-Source On-state Resistance [2]	$R_{DS(on)}$	V_{GS} = 10V, I_D = 5.8A	-	25	36	mΩ
		V_{GS} = 4.5V, I_D = 4.8A	-	35	45	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1MHz	-	500	-	pF
Output Capacitance	C_{oss}		-	72	-	
Reverse Transfer Capacitance	C_{rss}		-	58	-	
Switching Characteristics[3]						
Turn-On Delay Time	$t_{d(on)}$	V_{GS} =10V, V_{DS} = 15V, R_L = 2.6Ω, R_{GEN} =6Ω	-	6.4	-	nS
Turn-On Rise Time	t_r		-	3.1	-	
Turn-Off Delay Time	$t_{d(off)}$		-	15	-	
Turn- Off Fall Time	t_f		-	2.6	-	
Source-Drain Diode characteristics						
Body Diode Voltage	V_{SD}	I_S= 1A, V_{GS} = 0V	-	-	1	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} = ±20V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0	-1.5	-3.0	V
Drain-Source On-state Resistance[1]	$R_{DS(on)}$	V_{GS} = -10V, I_D = -6A	-	17	24	mΩ
		V_{GS} = -4.5V, I_D = -5A	-	23	35	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -15V, f = 1MHz	-	1400	-	pF
Output Capacitance	C_{oss}		-	200	-	
Reverse Transfer Capacitance	C_{rss}		-	150	-	
Switching Characteristics[2]						
Total Ggate Charge	Q_g	V_{GS}= -10V, I_D = -6A, V_{DS} = -15V	-	30	-	nC
Gate-Source Charge	Q_{gs}		-	5.5	-	
Gate-Drain Charge	Q_{gd}		-	8	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DS}= -15V, V_{GS} = -10V, R_{GEN} = 6Ω, I_D = -1A	-	10	-	ns
Turn-On Rise Time	t_r		-	15	-	
Turn-Off Delay Time	$t_{d(off)}$		-	110	-	
Turn- Off Fall Time	t_f		-	70	-	
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

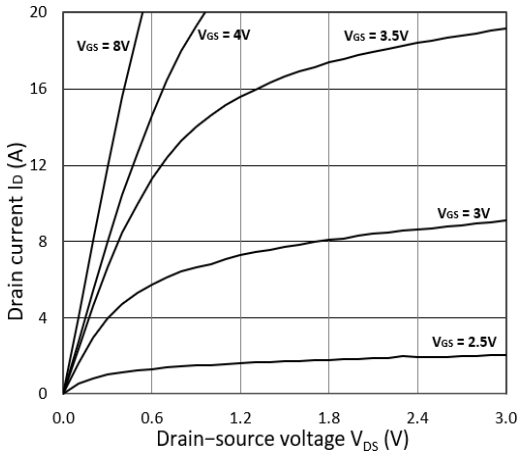


Figure 2. Transfer Characteristics

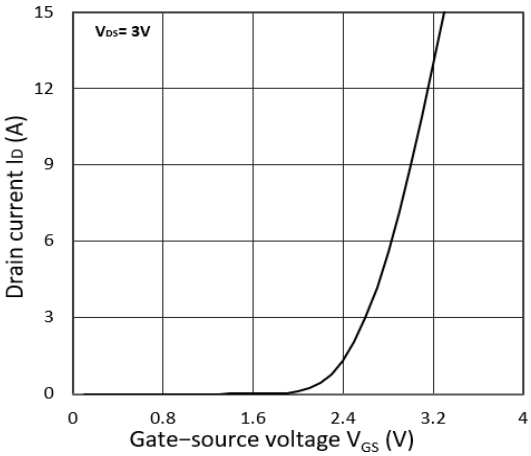


Figure 3. $R_{DS(on)}$ vs. I_D

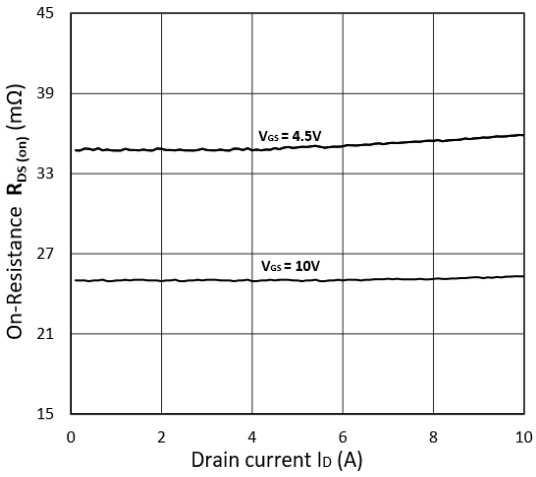


Figure 4. $R_{DS(on)}$ vs. V_{GS}

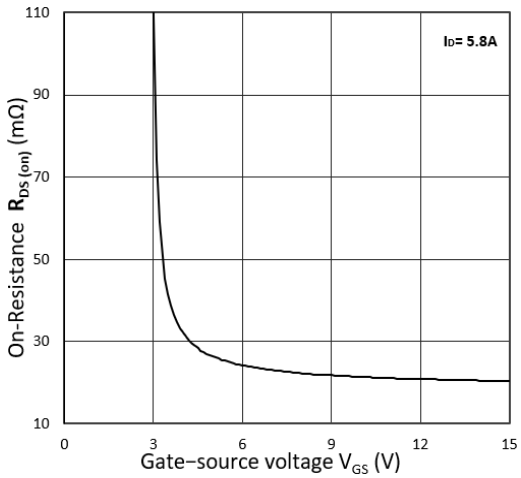


Figure 5. I_S vs. V_{SD}

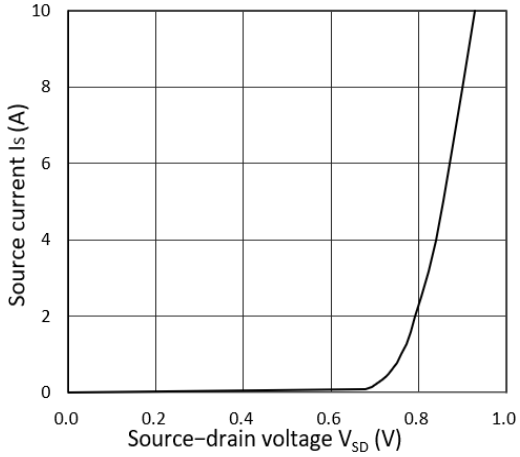
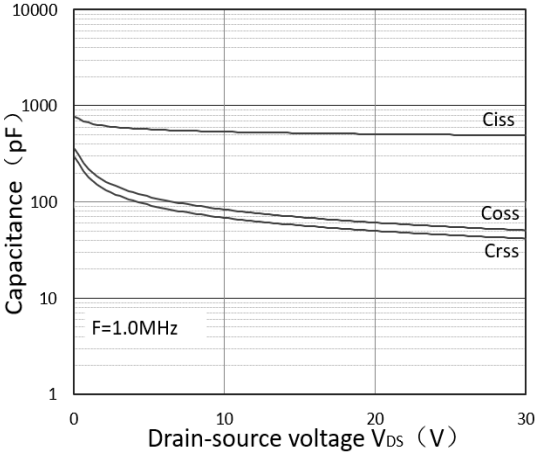


Figure 6. Capacitance Characteristics



Typical Characteristics: P-CHANNEL

Figure 1. Output Characteristics

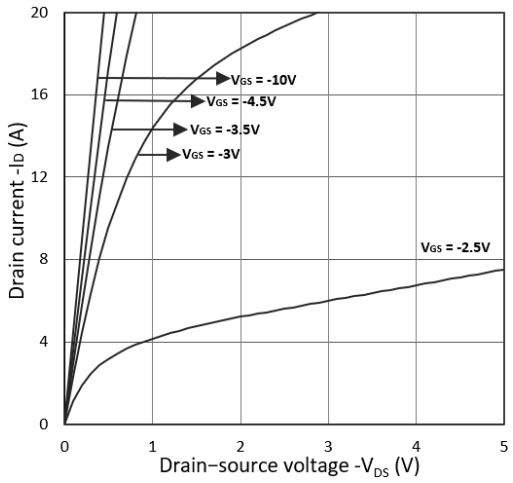


Figure 2. Transfer Characteristics

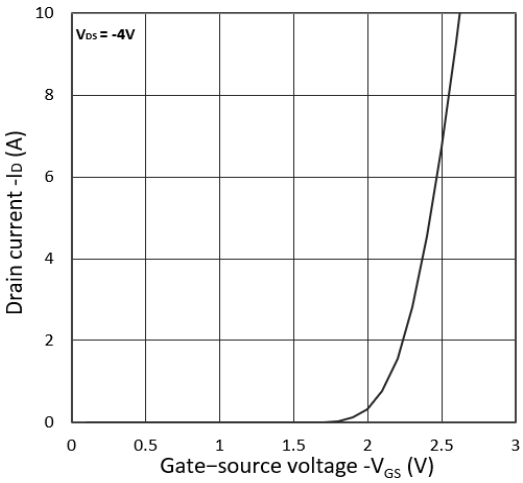


Figure 3. $R_{DS(ON)}$ vs. I_D

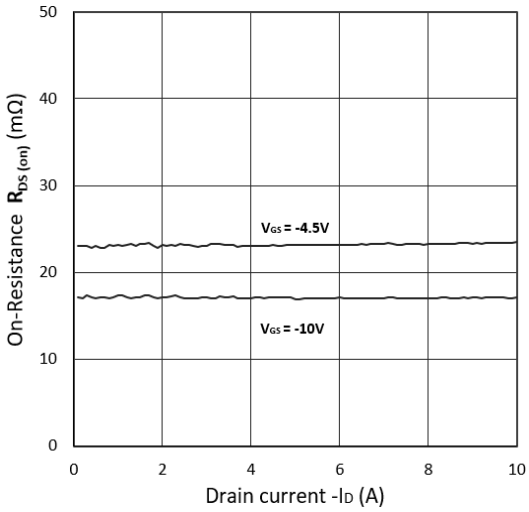


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

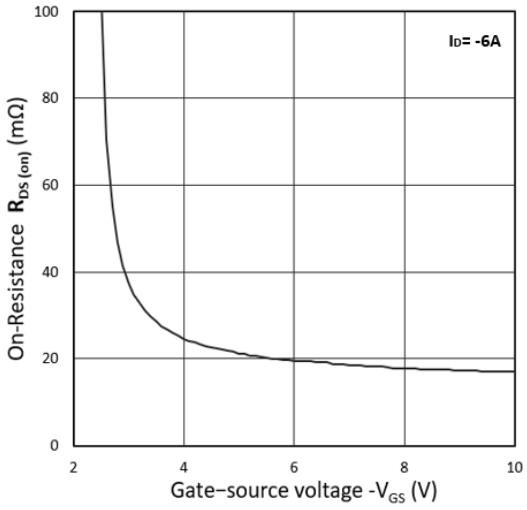


Figure 5. I_S vs. V_{SD}

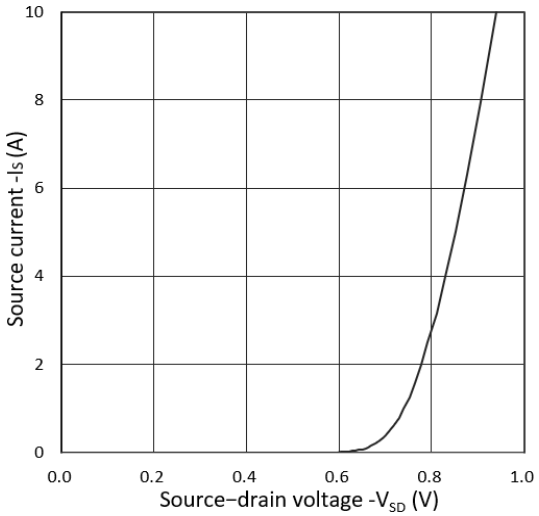
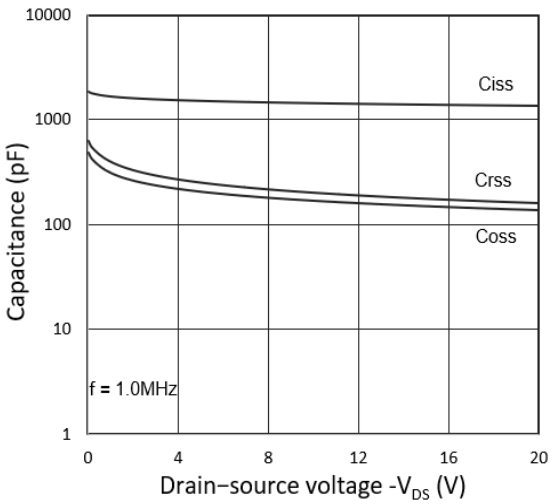
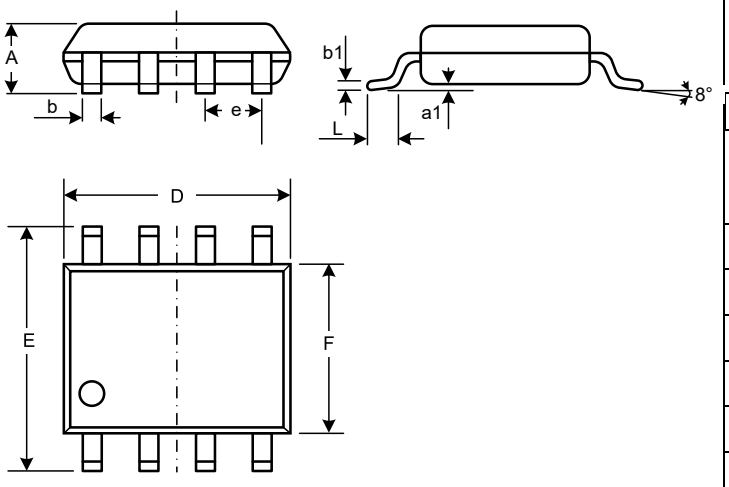


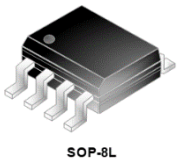
Figure 6. Capacitance Characteristics



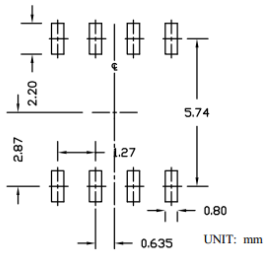
Outline Drawing – SOP-8L

PACKAGE OUTLINE





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



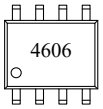
Notes:

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	WM03DH60A
Marking Code	

Package Information

Qty：4k/Reel

CONTACT INFORMATION

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