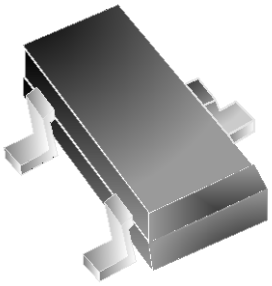
WM02N28M

N-Channel MOSFET

Features

- V_{DS}= 20V, I_D = 2.8A
  $R_{DS(on)}$ < 60mΩ @ V_{GS} = 4.5V
  $R_{DS(on)}$ <100mΩ @ V_{GS} = 2.5V
- Low Gate Charge
- Trench Power LV MOSFET Technology

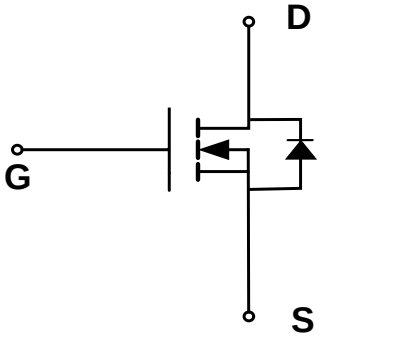


SOT-23

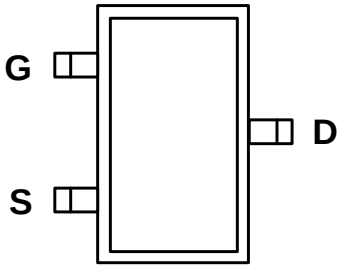
Mechanical Characteristics

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

Schematic & PIN Configuration



Device symbol



SOT-23(Top View)

Absolute Maximum Rating

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	V
Continuous Drain Current	T_A = 25°C	I_D	2.8	A
	T_A = 100°C		2.2	A
Pulsed Drain Current[1]		I_{DM}	10	A
Power Dissipation		P_D	0.7	W
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55 to 150	°C
Thermal Resistance from Junction to Ambient[2]		$R_{\theta JA}$	178	°C/W

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250μA	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V	-	-	1	μA
Gate-Source Leakage	I_{GSS}	V_{GS} = ±10V, V_{DS} = 0V	-	-	±100	nA
Gate-Source Threshold Voltage[3]	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	0.4	0.85	1.2	V
Drain-Source on-State Resistance[3]	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 2.8A	-	40	60	mΩ
		V_{GS} = 2.5V, I_D = 2.0A	-	55	100	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1 MHz	-	220	-	pF
Output Capacitance	C_{oss}		-	37	-	
Reverse Transfer Capacitance	C_{rss}		-	30	-	
Switching Characteristics						
Total gate charge[4]	Q_g	V_{GS}= 4.5V, V_{DS}= 10V, I_D= 2.5A	-	2.6	-	nC
Gate-source charge[4]	Q_{gs}		-	0.5	-	
Gate-drain charge[4]	Q_{gd}		-	0.7	-	
Turn-on Time[4]	$t_{d(on)}$	V_{GS} = 4.5V, V_{DD} = 10V, R_L = 1.5Ω, R_{GEN} = 3Ω	-	12.5	-	nS
Rise Time[4]	t_f		-	9.8	-	
Turn-off Time[4]	$t_{d(off)}$		-	17.5	-	
Fall Time[4]	t_f		-	5	-	
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	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

Figure 1. Output Characteristics

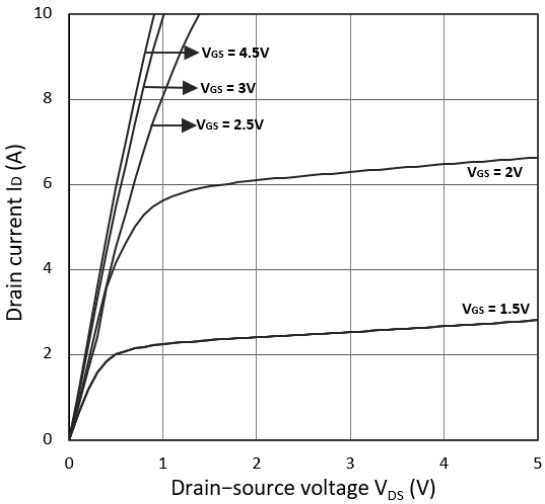


Figure 2. Transfer Characteristics

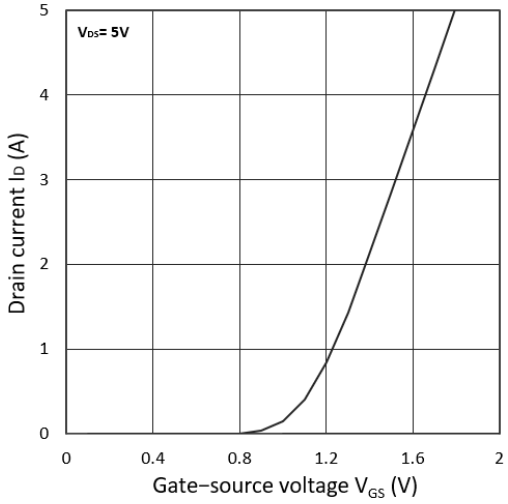


Figure 3. $R_{DS(on)}$ vs. I_D

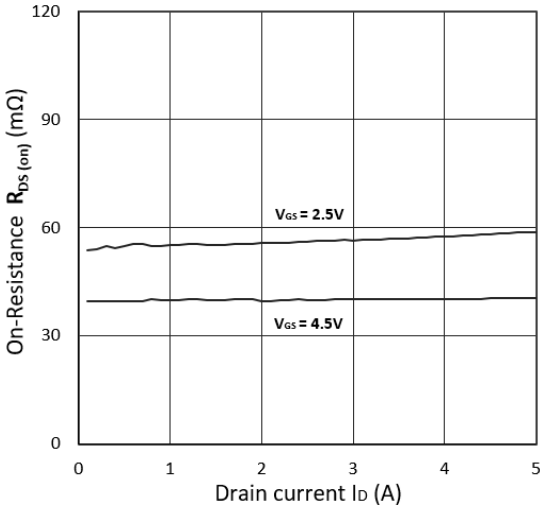


Figure 4. $R_{DS(on)}$ vs. V_{GS}

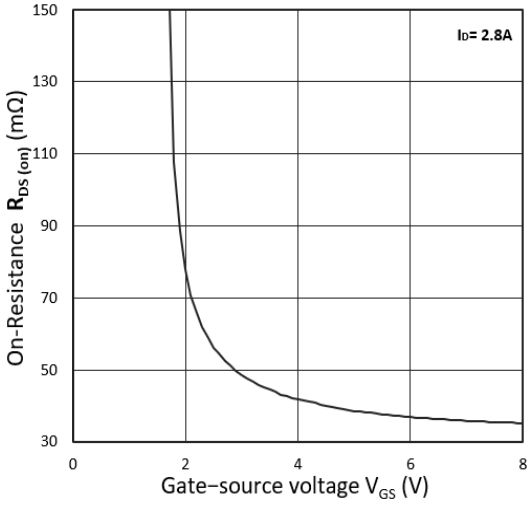


Figure 5. I_S vs.I_D

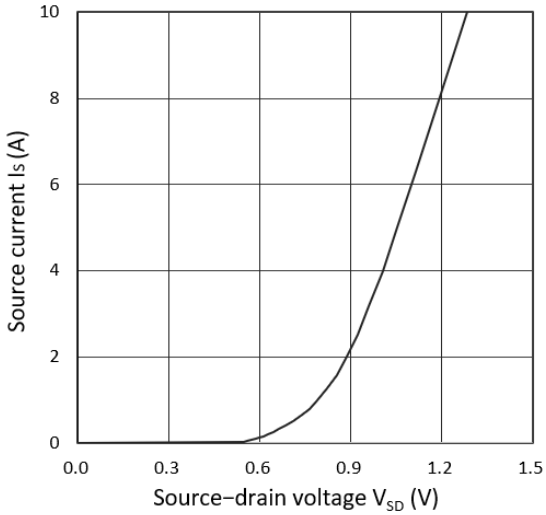
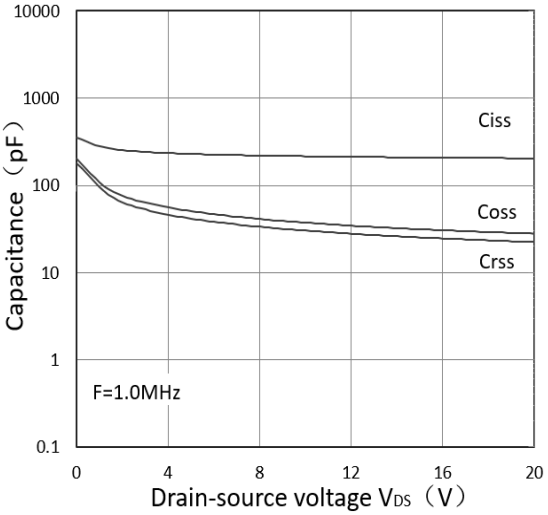
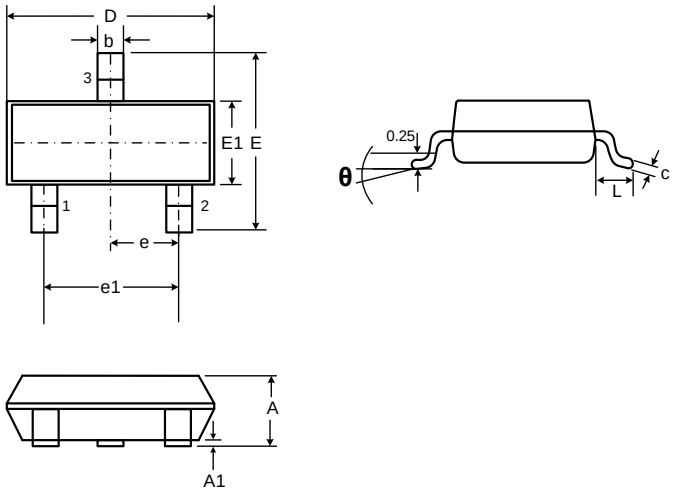


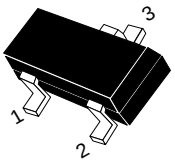
Figure 6. Capacitance Characteristics



Outline Drawing – SOT-23

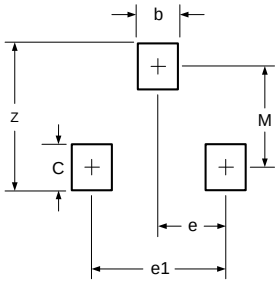
PACKAGE OUTLINE





SOT-23

DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
θ	0°	8°	0°	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	WM02N28M
Marking Code	2302B

Package Information

Qty：3k/Reel