

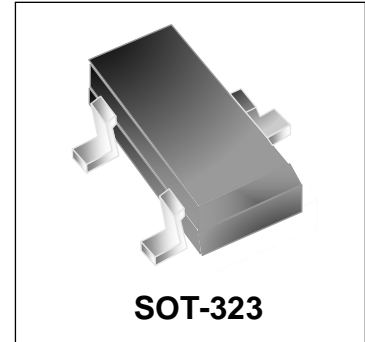
N-Channel MOSFET

Features

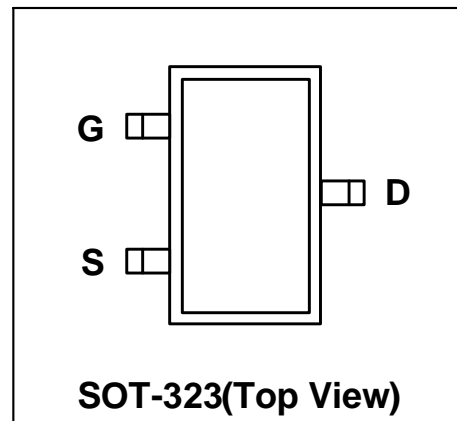
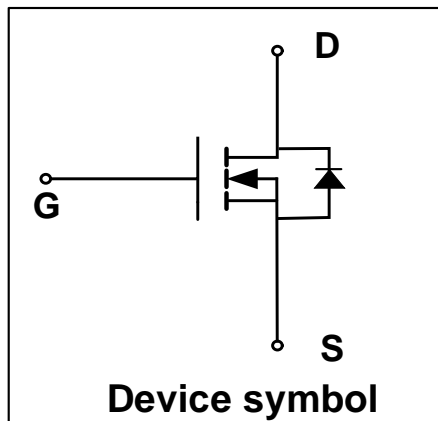
- $V_{DS} = 20V$, $I_D = 2A$
 $R_{DS(on)} < 60m\Omega @ V_{GS} = 4.5V$
 $R_{DS(on)} < 100m\Omega @ V_{GS} = 2.5V$
- Low Gate Charge
- Trench Power LV MOSFET Technology

Mechanical Characteristics

- SOT-323 Package
- Marking : Making Code
- RoHS Compliant



Schematic & PIN Configuration



Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 10	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current ¹	I_{DM}	6.5	A
Power Dissipation	P_D	0.25	W
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}C$
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	625	$^{\circ}C/W$

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 = 2.0A	-	40	60	mΩ
		V _{GS} = 2.5V, I _D = 1.5A	-	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 _r		-	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

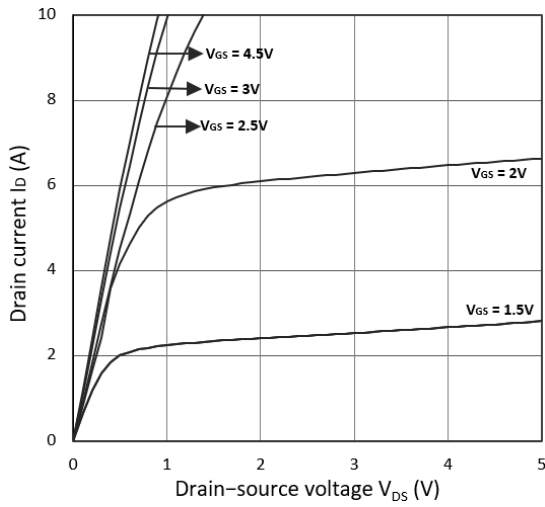


Figure 2. Transfer Characteristics

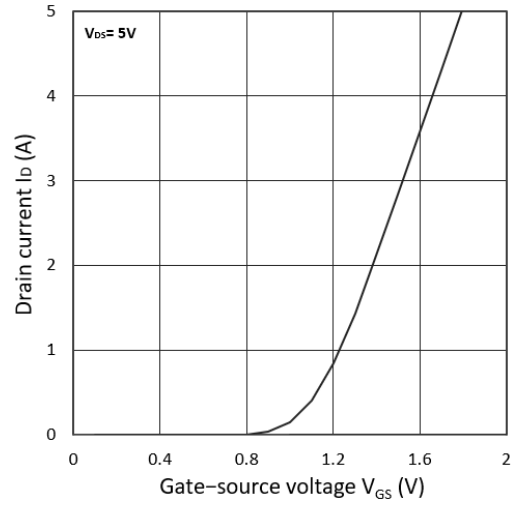


Figure 3. $R_{DS(on)}$ vs. I_D

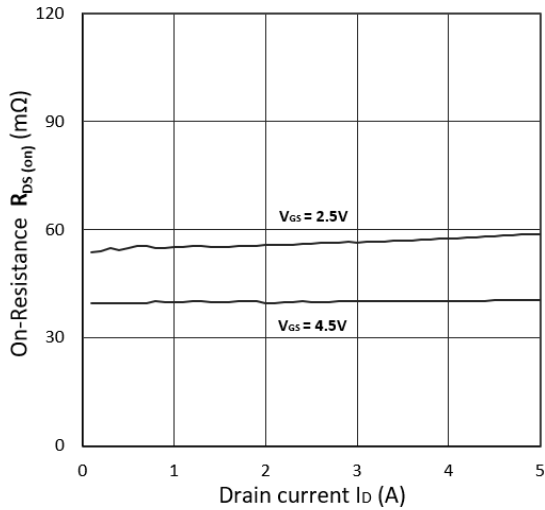


Figure 4. $R_{DS(on)}$ vs. V_{GS}

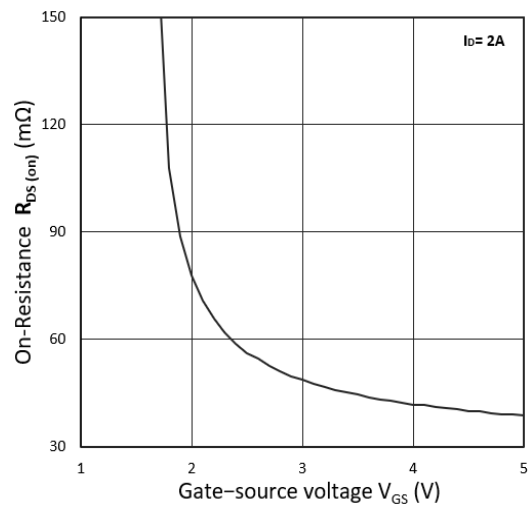


Figure 5. I_S vs. I_D

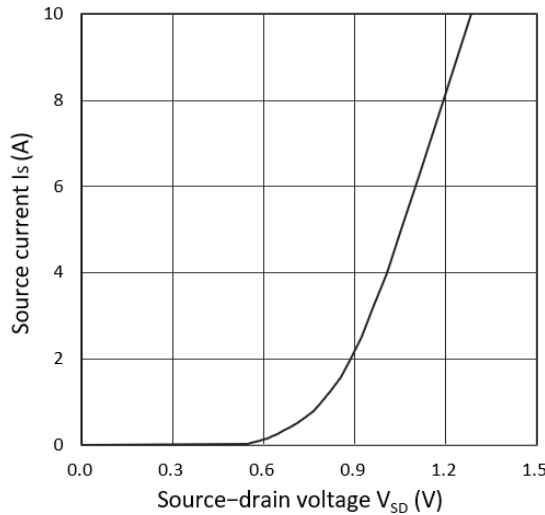
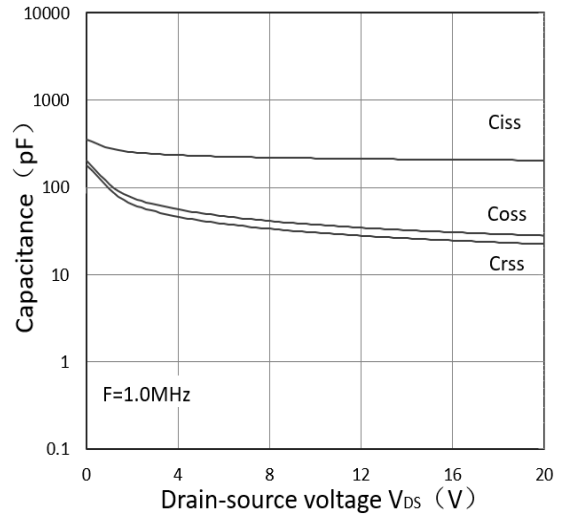


Figure 6. Capacitance Characteristics



Outline Drawing – SOT-323

PACKAGE OUTLINE

SOT-323

DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
D	2.000	2.200	0.079	0.087
b	0.300	0.500	0.012	0.020
c	0.100	0.150	0.004	0.006
E	2.150	2.450	0.085	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP		0.026TYP	
L	0.525 REF		0.021 REF	
theta	0	8°	0	8°

DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.076	1.90
C	0.036	0.9
Z	0.108	2.7
e	0.026	0.65
e1	0.052	1.30
b	0.028	0.7

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	WM02N20G
Marking Code	

Package Information

Qty: 3k/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.