



WM05N02G

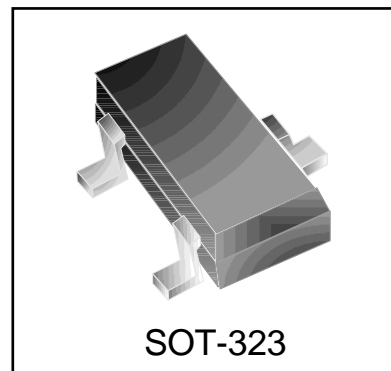
N-Channel MOSFET

Features

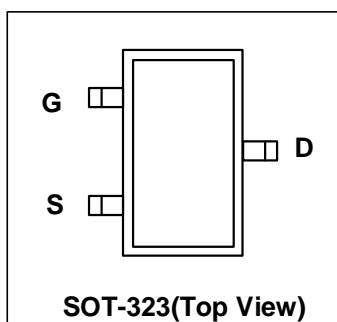
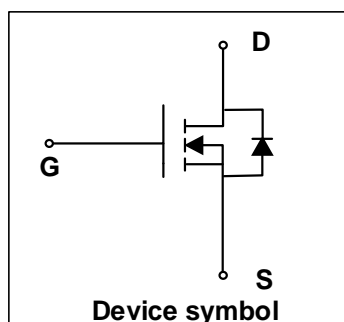
- $V_{DS} = 50V$, $I_D = 0.22A$
 $R_{DS(on)} < 3\Omega @ V_{GS} = 10V$
 $R_{DS(on)} < 4\Omega @ V_{GS} = 4.5V$
- Battery Operated Systems
- Solid-State Relays

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}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.22	A
Power Dissipation	P_D	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Characteristics (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	50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V _{DS} = 48V, V _{GS} = 0 V	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	V _{DS} = 0 V, V _{GS} = ±20V	-	-	±5	μA
Drain-Source On-state Resistance ¹	R_{DS(on)}	V _{GS} = 10V, I _D = 0.2A	-	1.1	3	Ω
		V _{GS} = 4.5V, I _D = 0.2A	-	1.3	4	
Gate Threshold Voltage	V_{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.8	1.1	1.5	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz	-	30	-	pF
Output Capacitance	C_{oss}		-	6	-	
Reverse Transfer Capacitance	C_{rss}		-	2.5	-	
Switching Characteristics²						
Turn-On Delay Time	t_{d(on)}	V _{DD} = 30V, V _{GS} = 10V, I _D = 0.29A, R _G = 6Ω	-	5	-	ns
Rise time	t_r		-	18	-	
Turn-Off Delay Time	t_{d(off)}		-	36	-	
Rise time	t_r		-	14	-	
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I _S = 0.2A, V _{GS} = 0V	-	-	1.4	V

Notes:

1. Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%.
2. These parameters have no way to verify.

Typical Characteristics

Figure 1. Output Characteristics

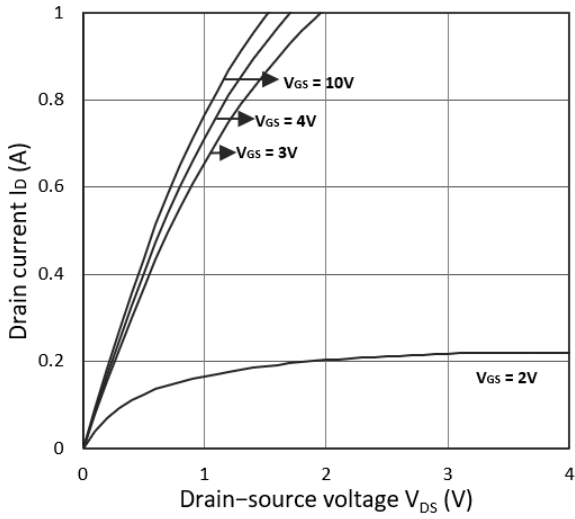


Figure 3. $R_{DS(ON)}$ vs. I_D

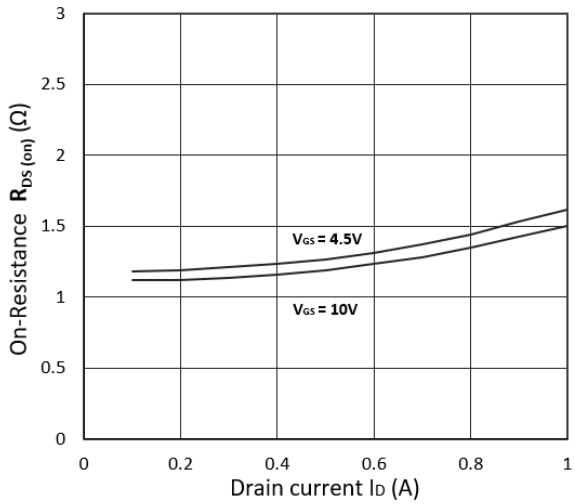


Figure 5. I_S vs. V_{SD}

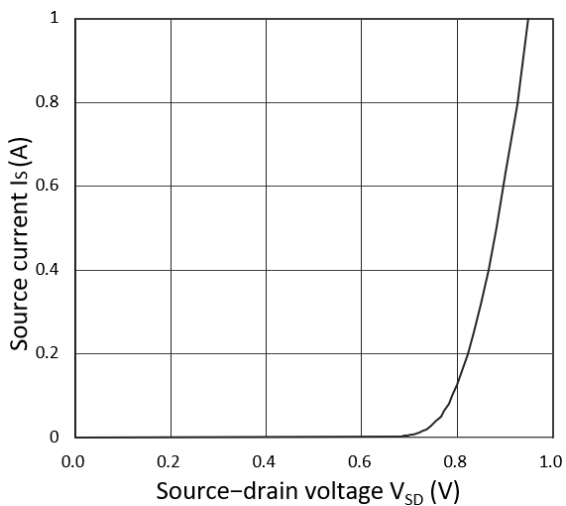


Figure 2. Transfer Characteristic

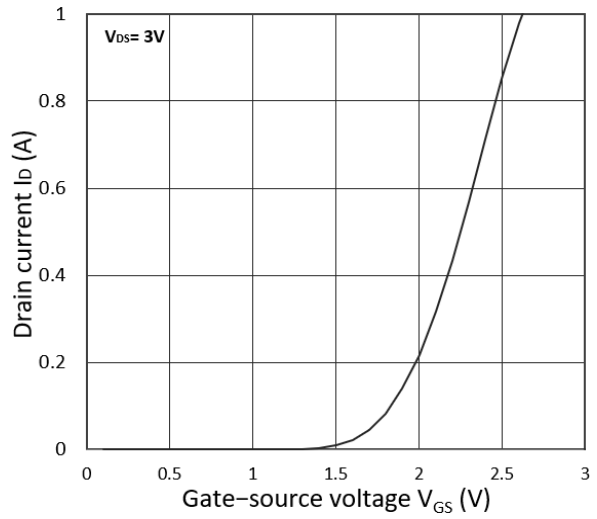


Figure 4. $R_{DS(ON)}$ vs. I_D

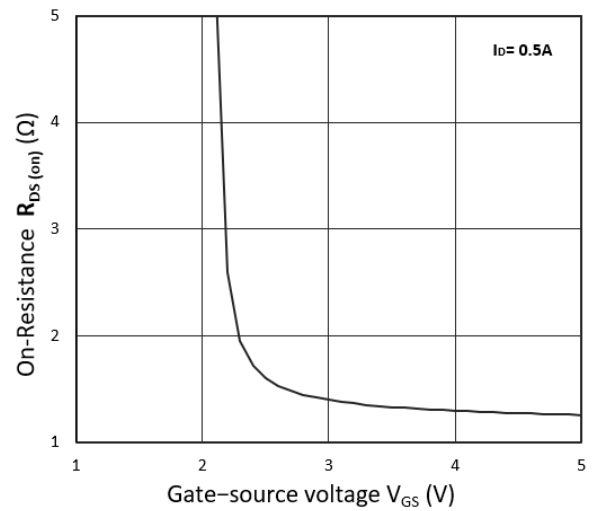
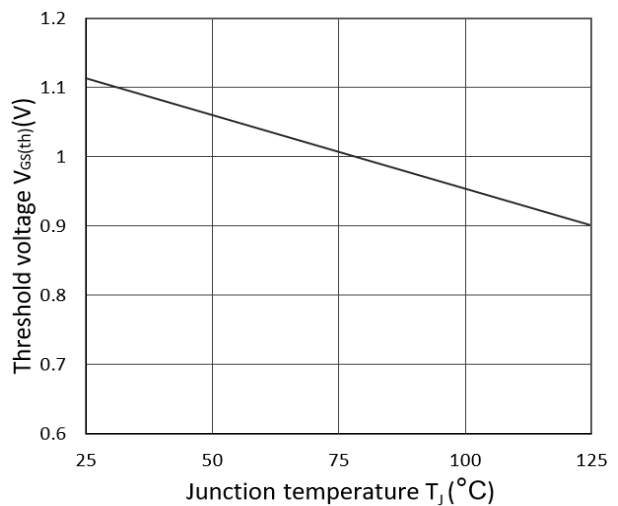


Figure 6. Threshold Voltage vs. T_J



Outline Drawing – SOT-323

PACKAGE OUTLINE

SOT-323

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
A2	0.900	1.000	0.035	0.039
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	
θ	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	WM05N02G
Marking Code	

Package Information

Qty: 3k/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.