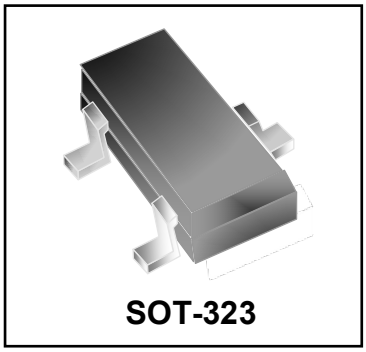
WM05P02G

P-Channel Enhancement MOSFET

Features

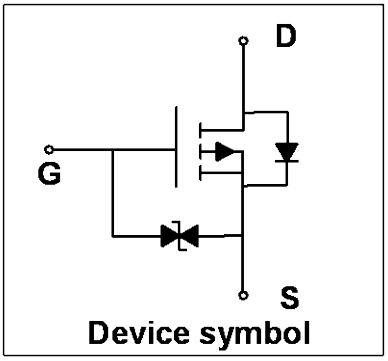
- Way-on Small Signal MOSFETs
- V_{DS}= -50V, I_D = -0.2A
  $R_{DS(on)}$ < 3Ω @ V_{GS} = -10V
  $R_{DS(on)}$ < 4Ω @ V_{GS} = -4.5V
- Trench LV MOSFET Technology
- ESD Protected

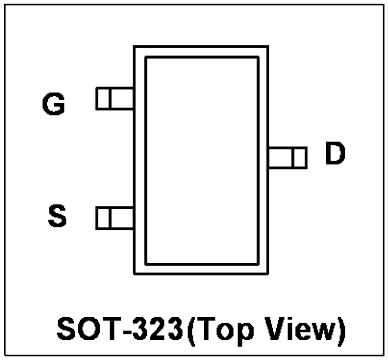


Mechanical Characteristics

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

Schematic & PIN Configuration





Absolute Maximum Rating (T_A=25°C unless otherwise noted)

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-50	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	-0.2	A
Pulsed Drain Current[1]		I_{DM}	-0.8	A
Power Dissipation	T_A=25°C	P_D	300	mW
Operating Junction and Storage Temperature Range		T_J ,T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Units
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	416.6	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D= -250μA	-50	-	-	V
Gate-Source Leakage	I_{GSS}	V_{DS}= 0V, V_{GS}= ±20V	-	-	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= -50V, V_{GS}= 0V	-	-	-1	μA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D= -250μA	-1	-1.5	-2	V
Drain-Source on-State Resistance[3]	$R_{DS(on)}$	V_{GS}= -10V, I_D= -0.2A	-	1.8	3	Ω
		V_{GS}= -4.5V, I_D= -0.1A	-	2.2	4	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -25V, f=1MHz	-	26.5	-	pF
Output Capacitance	C_{oss}		-	5.5	-	
Reverse Transfer Capacitance	C_{rss}		-	4	-	
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{GS} = -10V, V_{DS} = -25V, I_D = -0.2A	-	1.5	-	nC
Gate−Source Charge	Q_{gs}		-	0.35	-	
Gate−Drain Charge	Q_{gd}		-	0.6	-	
Turn-on Delay time	$t_{d(on)}$	V_{GS} = -10V,V_{DD}= -25V , R_G= 3Ω, I_D= -0.2A	-	1.7	-	ns
Rise Time	t_r		-	0.6	-	
Turn-off Delay Time	$t_{d(off)}$		-	10	-	
Fall Time	t_f		-	5.5	-	
Source-Drain Diode Characteristics						
Body Diode Voltage[3]	V_{SD}	I_S= -0.2A, V_{GS}= 0V	-	-	-1.2	V
Continuous Source Current	I_S	-	-	-	-0.2	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.
2. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

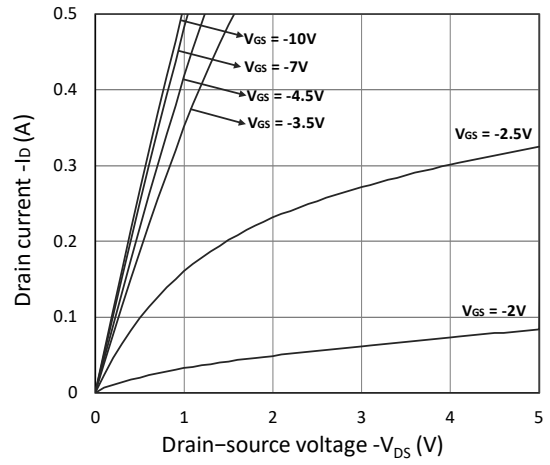


Figure 1. Output Characteristics

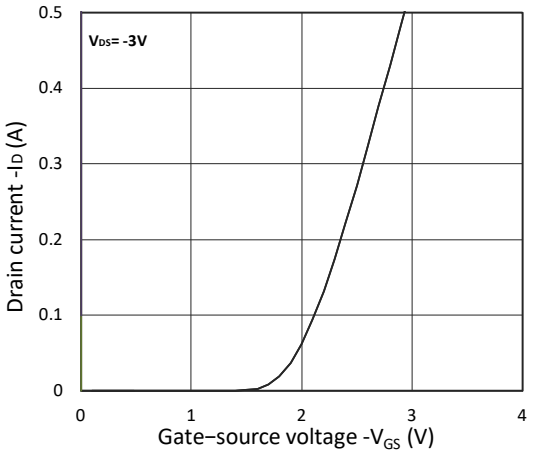


Figure 2. Transfer Characteristics

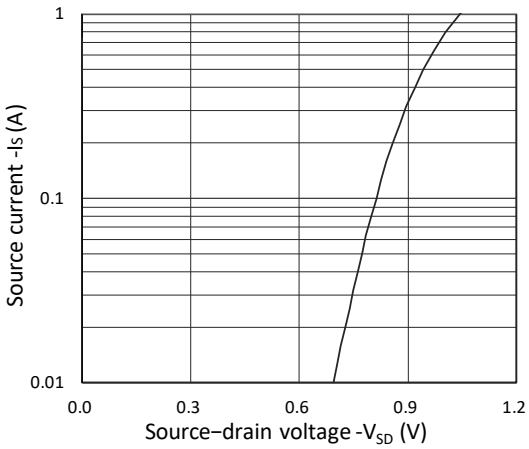


Figure 3. Forward Characteristics of Reverse

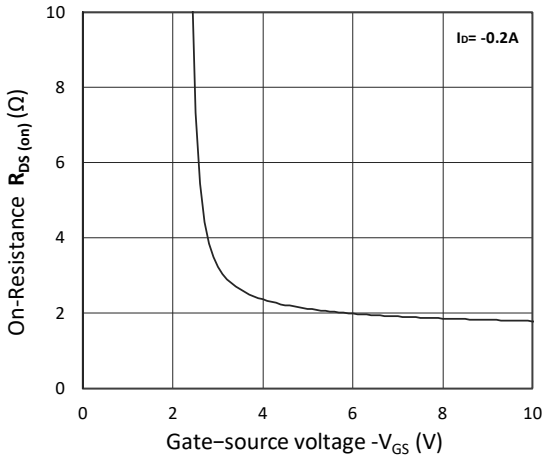


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

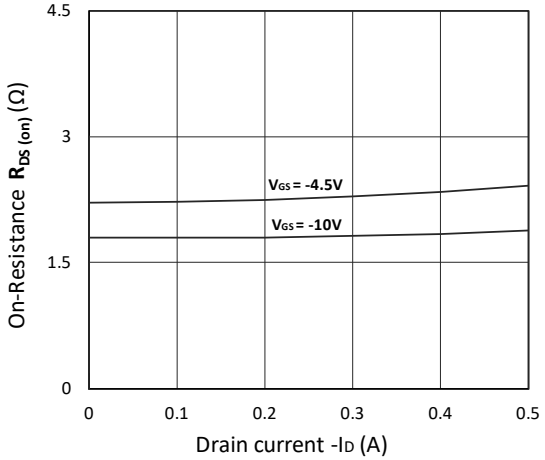


Figure 5. $R_{DS(ON)}$ vs. I_D

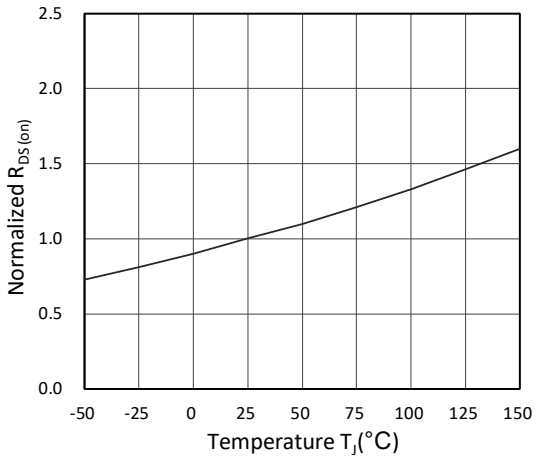


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

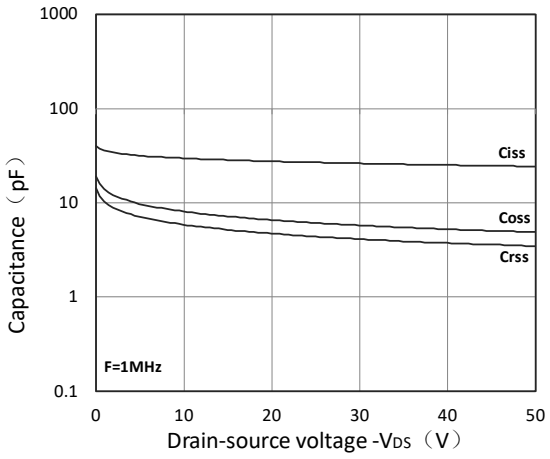


Figure 7. Capacitance Characteristics

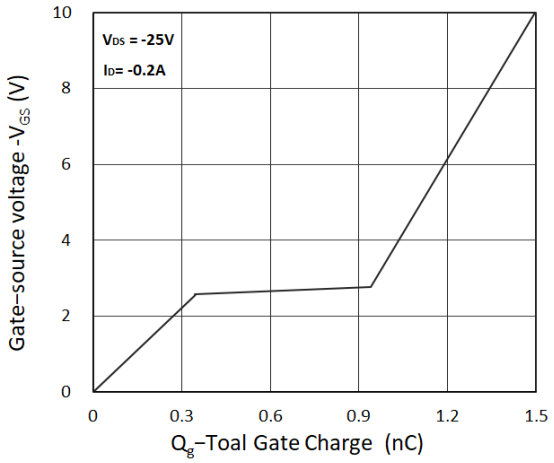
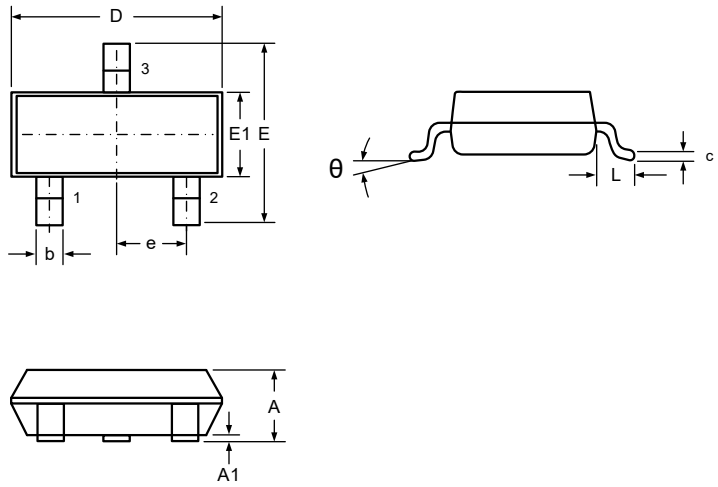
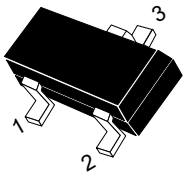


Figure 8. Gate Charge Characteristics

Outline Drawing – SOT-323

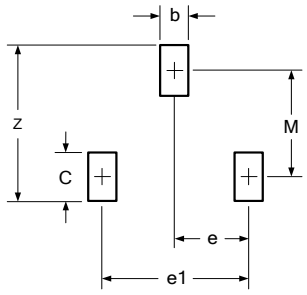
PACKAGE OUTLINE





SOT-323

DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.10	0.035	0.043
A1	0.00	0.10	0.000	0.004
D	2.00	2.20	0.079	0.087
b	0.20	0.40	0.008	0.016
c	0.08	0.15	0.003	0.006
E	2.15	2.45	0.085	0.096
E1	1.15	1.35	0.045	0.053
e	0.65TYP		0.026TYP	
L	0.525 REF		0.021 REF	
θ	0	8°	0	8°

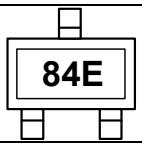


DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.076	1.90
C	0.036	0.9
Z	0.110	2.8
e	0.026	0.65
e1	0.052	1.30
b	0.028	0.7

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	WM05P02G
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.