

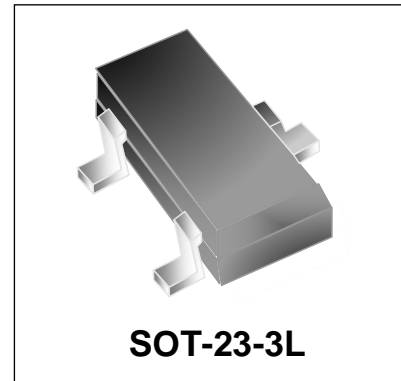
N-Channel Enhancement MOSFET

Features

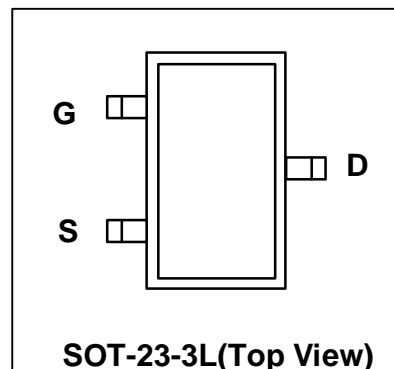
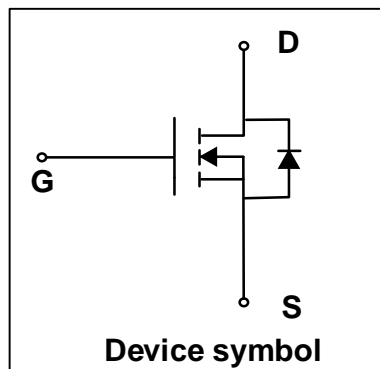
- Way-on Small Signal MOSFETs
- $V_{DS} = 20V$, $I_D = 7.5A$
 $R_{DS(on)} < 13m\Omega @ V_{GS} = 4.5V$
 $R_{DS(on)} < 18m\Omega @ V_{GS} = 2.5V$
- Trench LV MOSFET Technology

Mechanical Characteristics

- SOT-23-3L Package
- Marking : Making Code
- RoHS Compliant & Halogen-Free



Schematic & PIN Configuration



Absolute Maximum Rating ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	7.5	A
$T_A = 25^\circ C$			
Pulsed Drain Current ¹	I_{DM}	30	A
Power Dissipation	P_D	2	W
$T_A = 25^\circ C$			
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	62.5	$^\circ C/W$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V _{GS} = 0 V, I _D = 250μA	20	-	-	V
Drain Cut-off Current	I_{DSS}	V _{DS} = 20V, V _{GS} = 0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	V _{GS} = ±12V, V _{DS} = 0V	-	-	±100	nA
Gate Threshold Voltage	V_{GS(th)}	V _{GS} = V _{DS} , I _D = 250μA	0.3	0.65	1	V
Drain-Source on-state Resistance ³	R_{DS(on)}	V _{GS} = 4.5V, I _D = 7A	-	9	13	mΩ
		V _{GS} = 2.5V, I _D = 6A	-	11	18	
		V _{GS} = 1.8V, I _D = 4A	-	16.5	27	
Dynamic Characteristics⁴						
Input Capacitance	C_{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz	-	1890	-	pF
Output Capacitance	C_{oss}		-	305	-	
Reverse Transfer Capacitance	C_{rss}		-	278	-	
Switching Characteristics⁴						
Total gate charge	Q_g	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 7A	-	24	-	nC
Gate-source charge	Q_{gs}		-	3	-	
Gate-drain charge	Q_{gd}		-	6.2	-	
Turn-on Time	t_{d(on)}	V _{GS} = 4.5V, V _{DD} = 10V, R _G = 3Ω, I _D = 7A	-	6.6	-	ns
Rise time	t_r		-	13.8	-	
Turn-off Time	t_{d(off)}		-	35.6	-	
Fall time	t_f		-	26.8	-	
Source-Drain Diode Characteristics						
Body Diode Voltage ³	V_{SD}	I _S = 1A, V _{GS} = 0V	-	-	1.2	V
Continuous Source Current	I_S	-	-	-	7.5	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

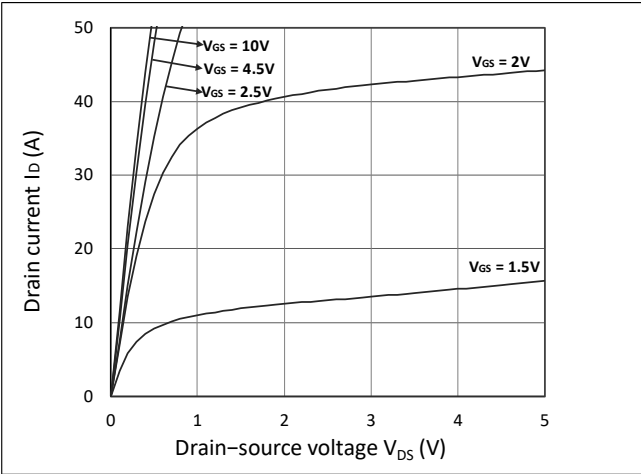


Figure 1. Output Characteristics

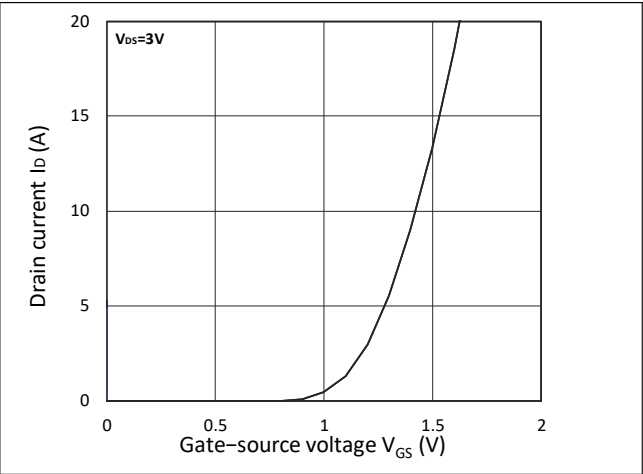


Figure 2. Transfer Characteristics

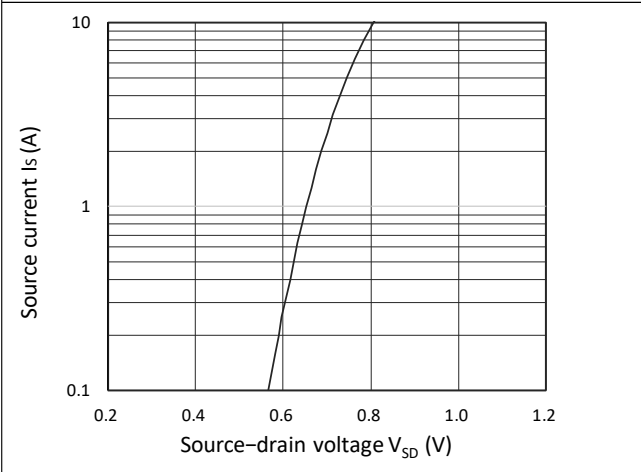


Figure 3. Forward Characteristics of Reverse

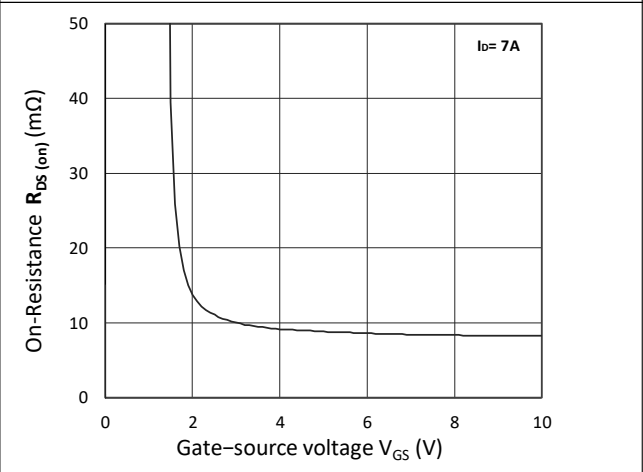


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

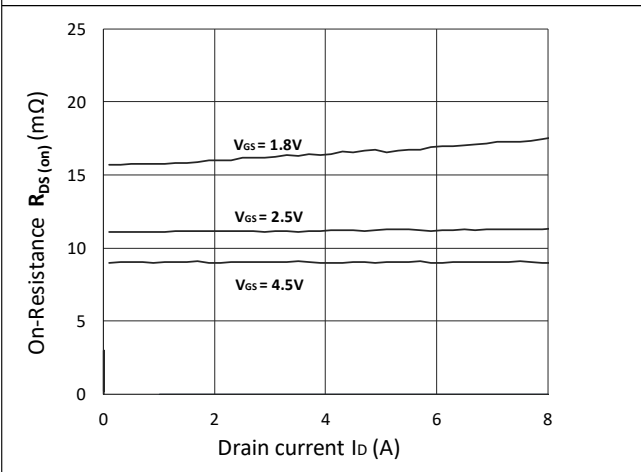


Figure 5. $R_{DS(ON)}$ vs. I_D

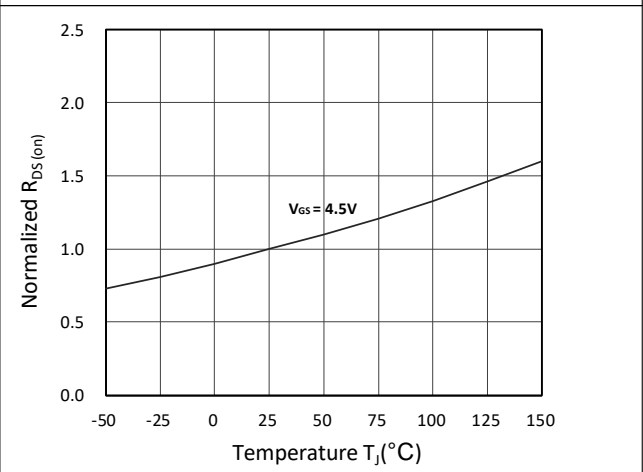


Figure 6. Normalized $R_{DS(ON)}$ vs. Temperature

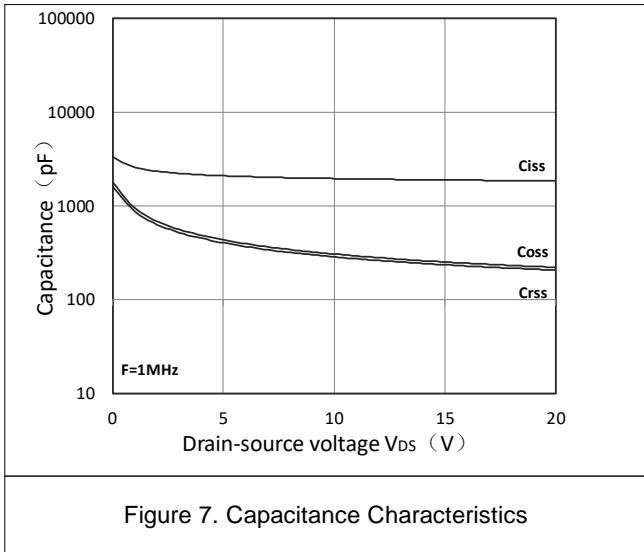


Figure 7. Capacitance Characteristics

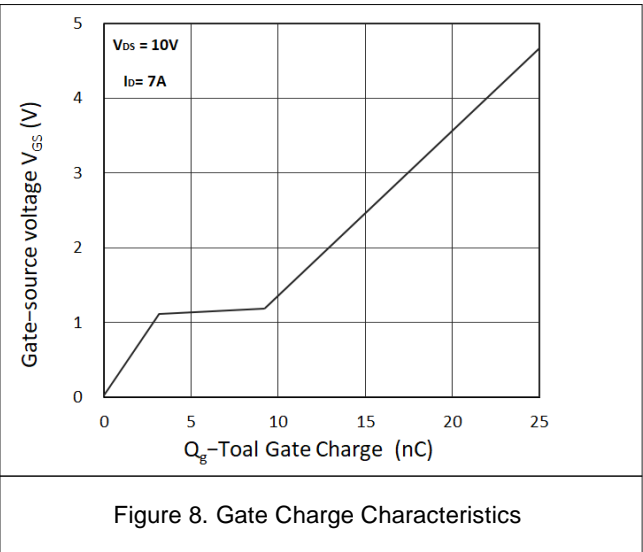
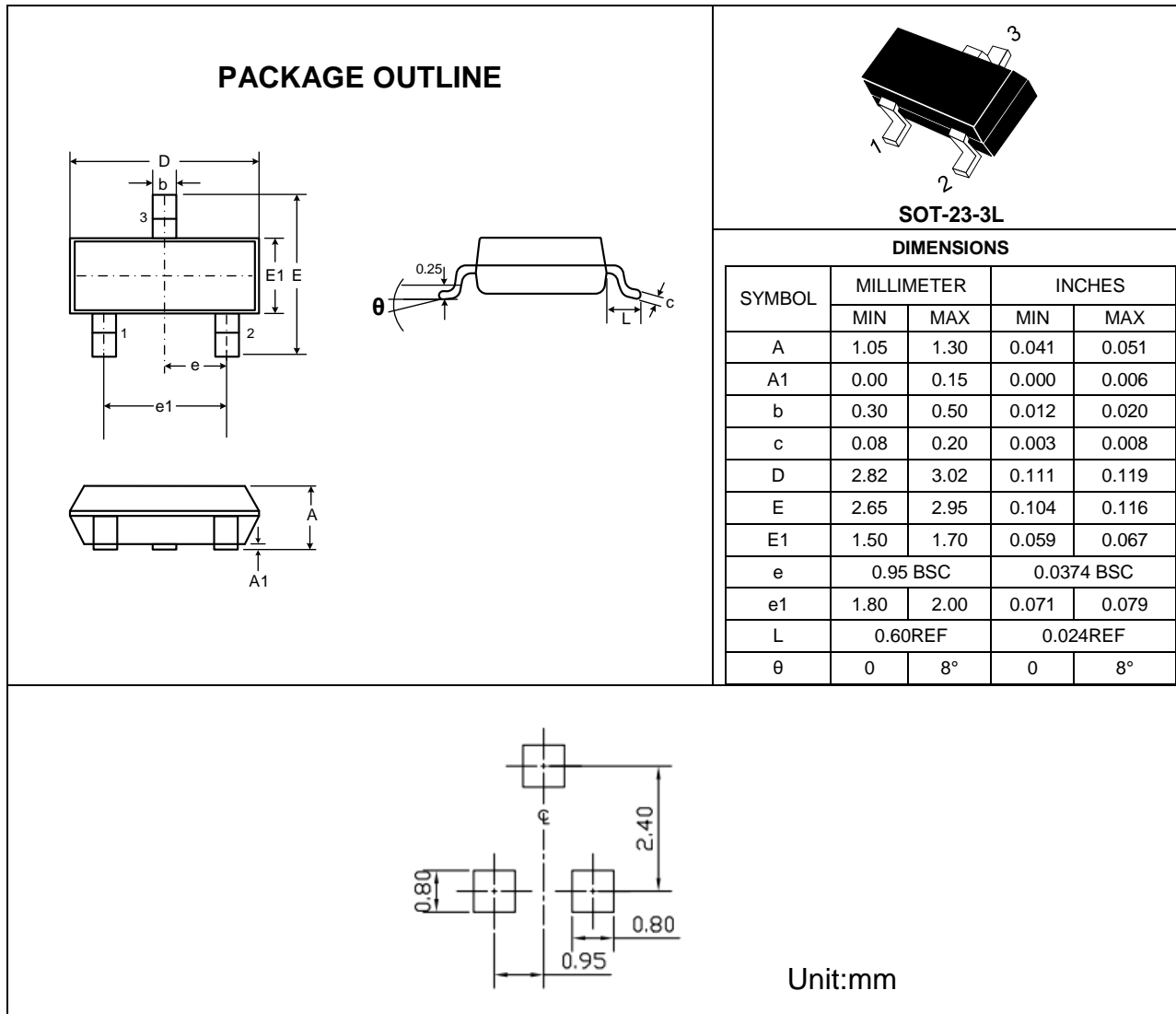



Figure 8. Gate Charge Characteristics

Outline Drawing – SOT-23-3L



Marking Codes

Part Number	WM02N75M2
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.
2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.
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