

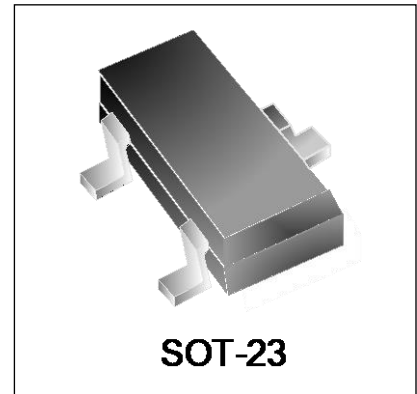
N-Channel Enhancement MOSFET

Features

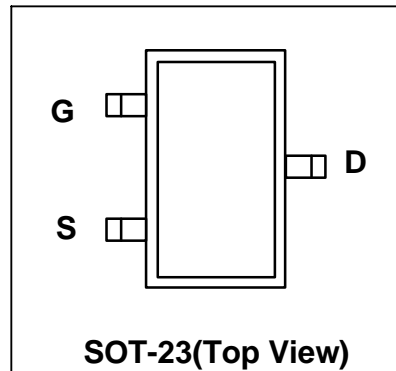
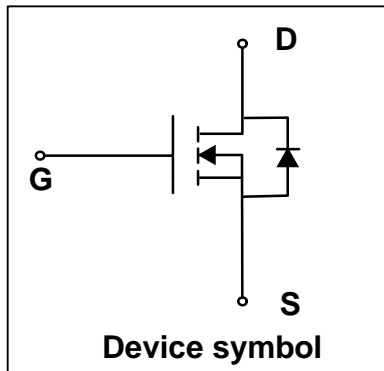
- Way-on Small Signal MOSFETs
- $V_{DS} = 30V$, $I_D = 5.8A$
 $R_{DS(on)} < 27m\Omega @ V_{GS} = 10V$
 $R_{DS(on)} < 38m\Omega @ V_{GS} = 4.5V$
- Trench LV MOSFET Technology

Mechanical Characteristics

- SOT-23 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}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A=25^\circ C$	I_D	5.8	A
Pulsed Drain Current ¹		I_{DM}	30	A
Power Dissipation	$T_A=25^\circ C$	P_D	1.2	W
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	$R_{\theta JA}$	104	$^\circ C/W$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250μA	1	1.5	2.5	V
Drain-Source on-State Resistance ³	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A	-	20	27	mΩ
		V _{GS} = 4.5V, I _D = 4.8A	-	29	38	
Dynamic Characteristics⁴						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	-	500	-	pF
Output Capacitance	C _{oss}		-	72	-	
Reverse Transfer Capacitance	C _{rss}		-	58	-	
Switching Characteristics⁴						
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 15V, I _D = 5.8A	-	9.8	-	nC
Gate-Source Charge	Q _{gs}		-	1.5	-	
Gate-Drain Charge	Q _{gd}		-	1.6	-	
Turn-on Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DD} = 15V, I _D = 5.8A, R _G = 3Ω	-	4.7	-	ns
Turn-on Rise Time	t _r		-	1.3	-	
Turn-off Delay Time	t _{d(off)}		-	13	-	
Turn-off Fall Time	t _f		-	3	-	
Source-Drain Diode Characteristics						
Body Diode Voltage ³	V _{SD}	I _S = 1A, V _{GS} = 0V	-	-	1	V
Continuous Source Current	I _S	-	-	-	5.8	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

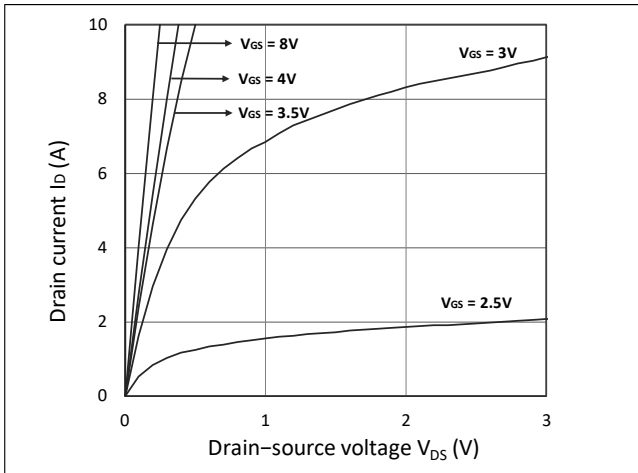


Figure 1. Output Characteristics

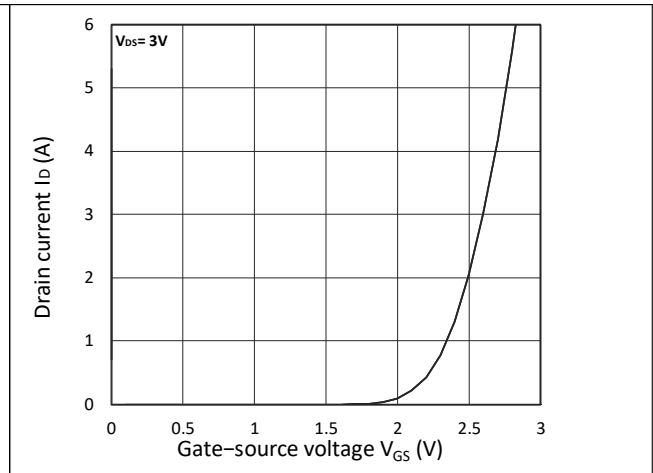


Figure 2. Transfer Characteristics

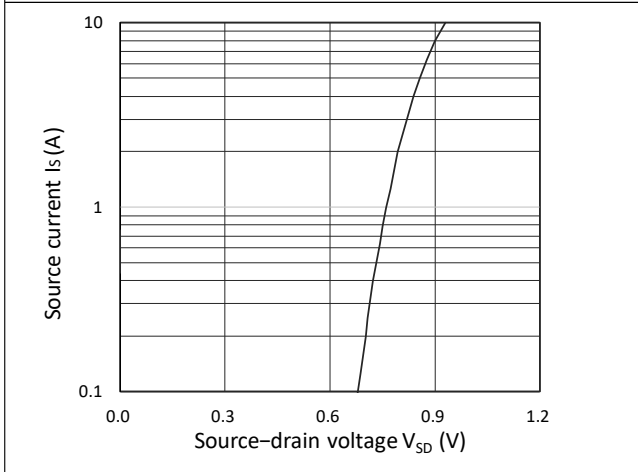


Figure 3. Forward Characteristics of Reverse

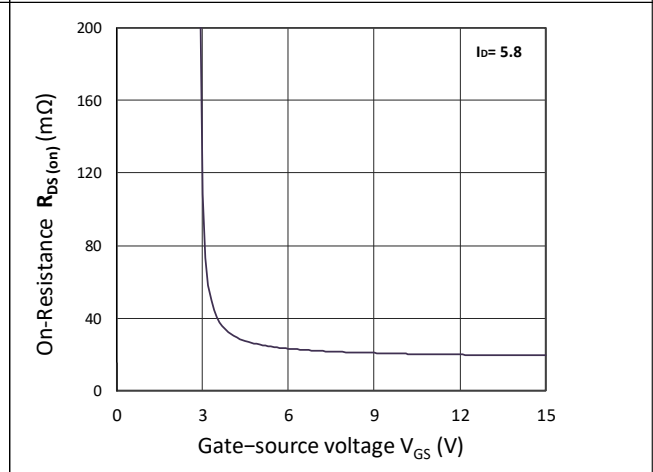


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

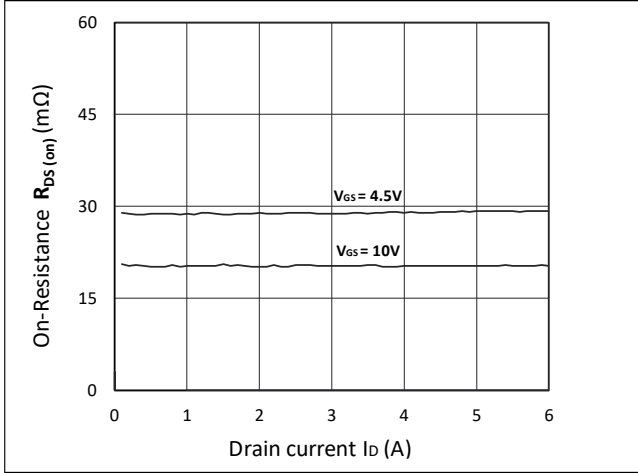


Figure 5. $R_{DS(ON)}$ vs. I_D

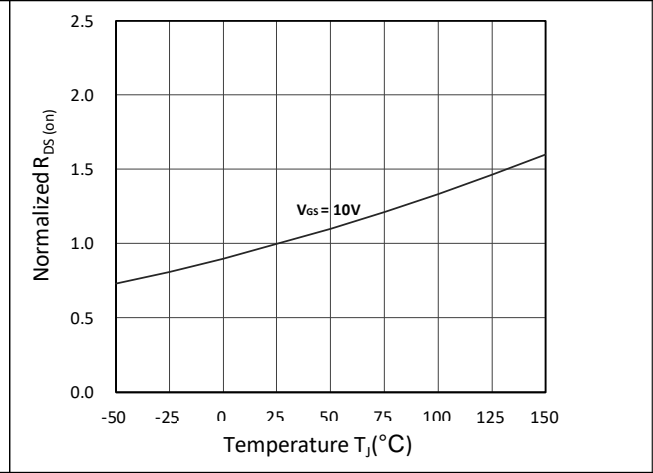
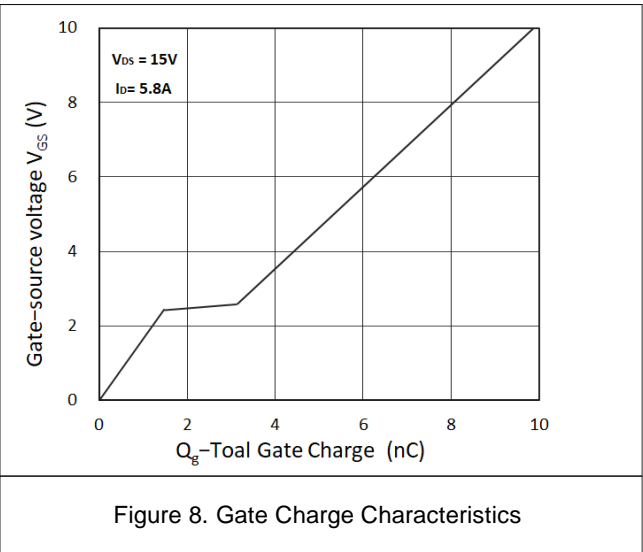
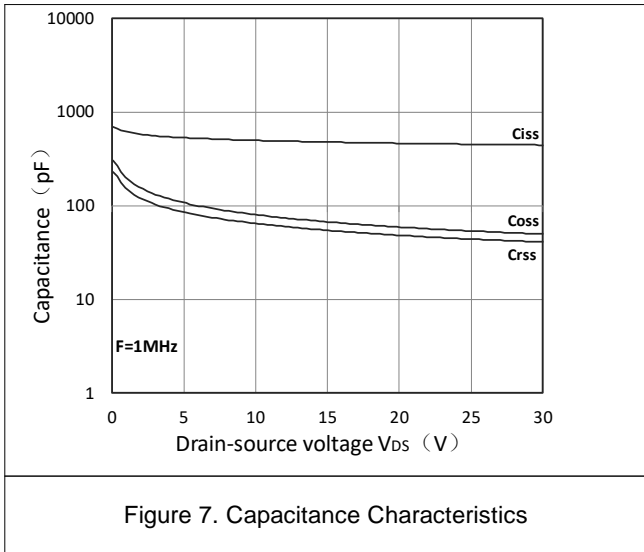


Figure 6. Normalized $R_{DS(ON)}$ vs. Temperature



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		0.037BSC	
e1	1.80	2.00	0.071	0.079
L	0.55REF		0.022REF	
L1	0.30	0.50	0.012	0.020
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	1.90 BSC
b	0.032	0.80

Marking Codes

Part Number	WM03N57M
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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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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