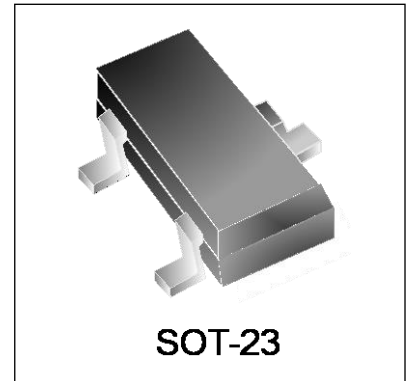


## N-Channel Enhancement MOSFET

### Features

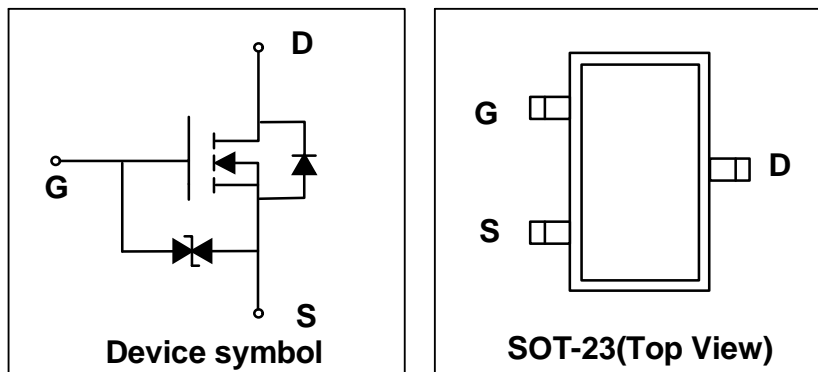
- Way-on Small Signal MOSFETs
- $V_{DS} = 60V$ ,  $I_D = 0.34A$   
 $R_{DS(on)} < 2\Omega @ V_{GS} = 10V$   
 $R_{DS(on)} < 2.5\Omega @ V_{GS} = 4.5V$
- Trench LV MOSFET Technology
- ESD Protected



### 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	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	0.34	A
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	1.36	A
Power Dissipation	$P_D$	350	mW
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 <sup>2</sup>	$R_{\theta JA}$	357	$^\circ C/W$

**Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	60	-	-	V
Gate leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V	-	-	±10	μA
Drain Cut-off Current	I <sub>DSS</sub>	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V	-	-	1	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1	1.4	2	V
Drain-Source On-state Resistance <sup>3</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.3A	-	1.3	2	Ω
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.2A	-	1.4	2.5	Ω
<b>Dynamic characteristics<sup>4</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, f = 1MHz	-	25	-	pF
Output Capacitance	C <sub>oss</sub>		-	5.6	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	2.2	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 30V, I <sub>D</sub> = 0.3A	-	0.61	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	0.27	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	0.23	-	
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 30V, I <sub>D</sub> = 0.3A, R <sub>G</sub> = 3Ω	-	4.3	-	ns
Turn-on Rise Time	t <sub>r</sub>		-	2.4	-	
Turn-off Delay Time	t <sub>d(off)</sub>		-	21	-	
Turn- off Fall Time	t <sub>f</sub>		-	14.5	-	
<b>Source-Drain Diode characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	I <sub>S</sub> = 0.3A , V <sub>GS</sub> =0V,	-	-	1.5	V
Continuous Source Current	I <sub>S</sub>	-	-	-	0.34	A

**Notes:**

1. Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°C.
2. The data tested by surface mounted on a 1 inch<sup>2</sup> 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

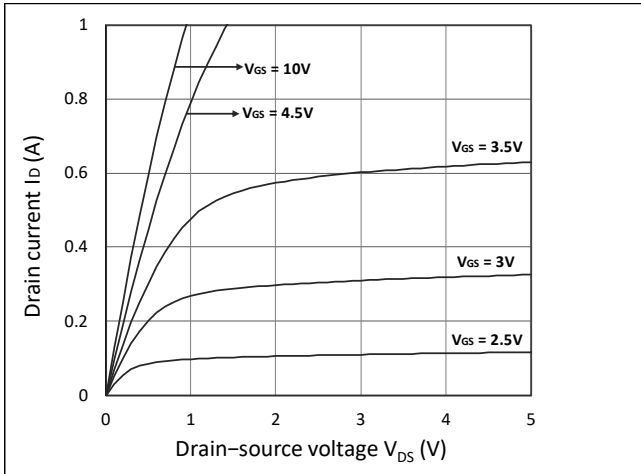


Figure 1. Output Characteristics

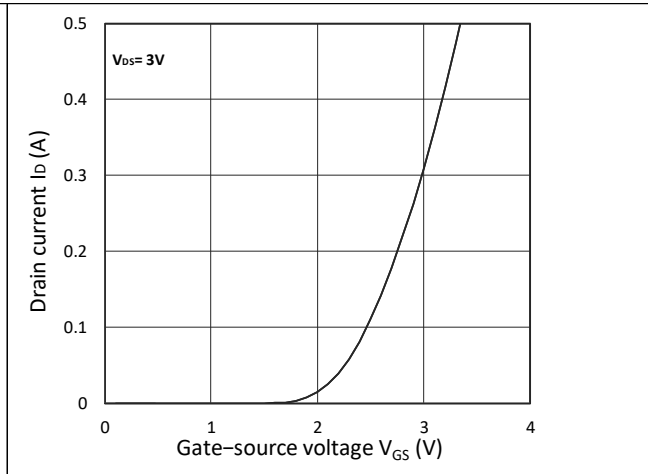


Figure 2. Transfer Characteristics

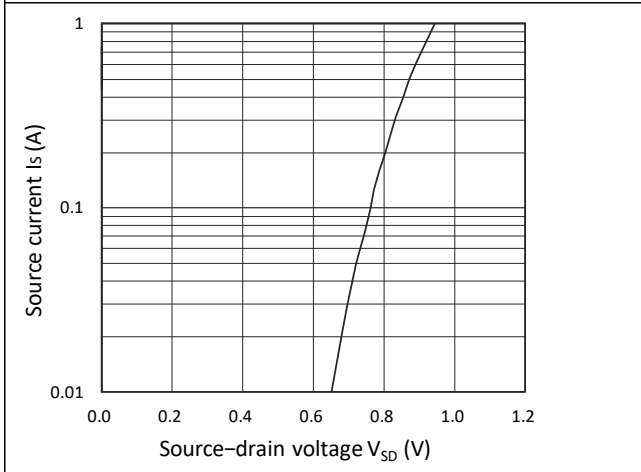


Figure 3. Forward Characteristics of Reverse

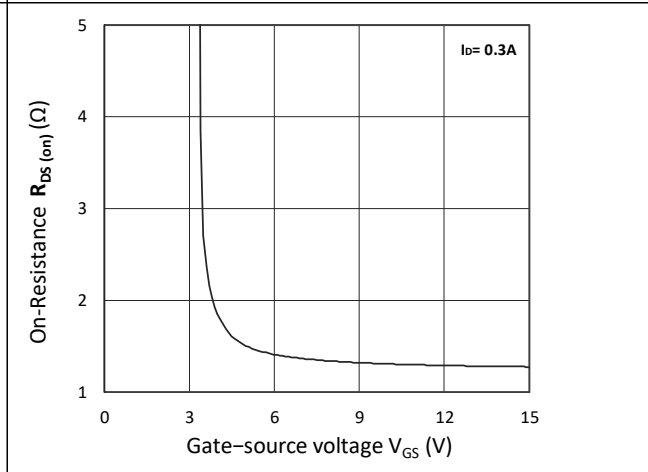


Figure 4.  $R_{DS(ON)}$  vs.  $V_{GS}$

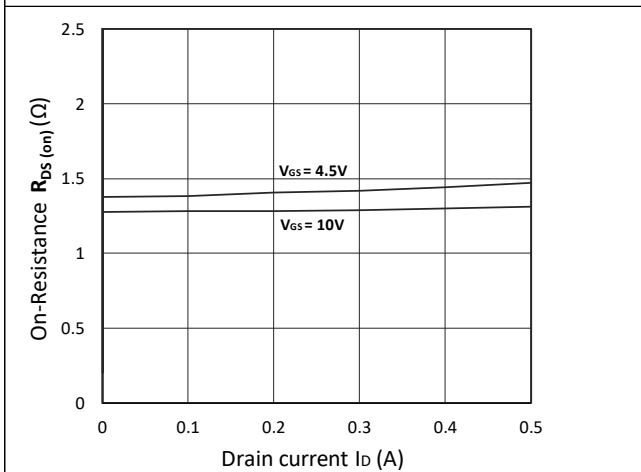


Figure 5.  $R_{DS(ON)}$  vs.  $I_D$

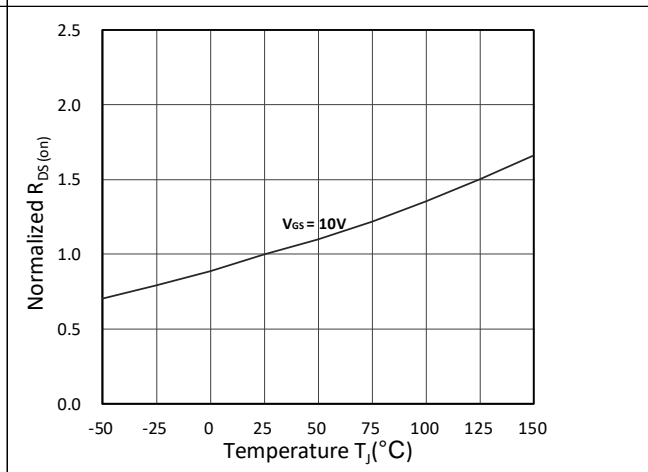


Figure 6. Normalized  $R_{DS(ON)}$  vs. Temperature

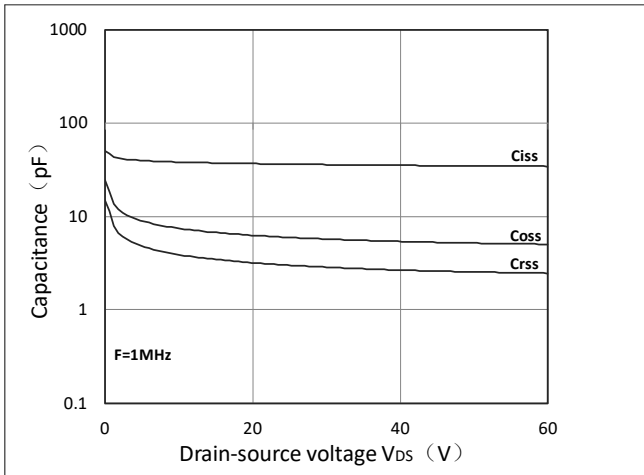


Figure 7. Capacitance Characteristics

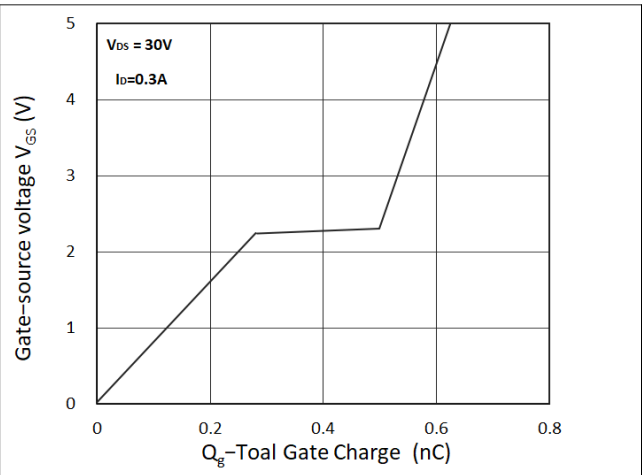
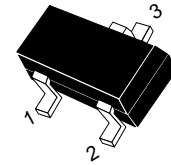
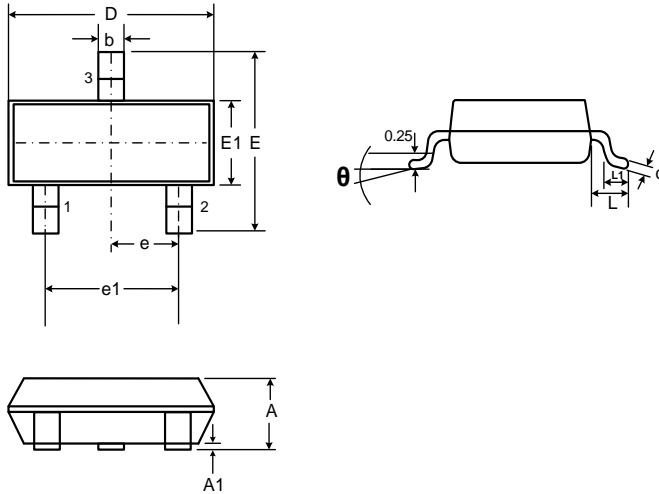


Figure 8. Gate Charge Characteristics

### Outline Drawing – SOT-23

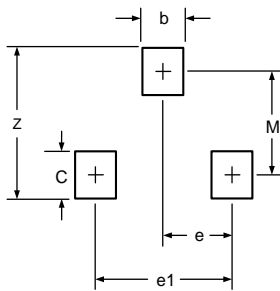
#### PACKAGE OUTLINE



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	WM06N03ME
Marking Code	

### Package Information

Qty: 3k/Reel

### CONTACT INFORMATION

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