

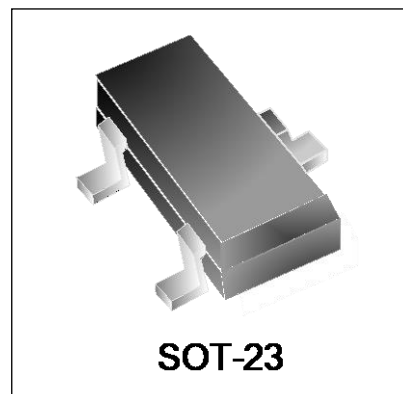
N-Channel Trench MOSFET

Features

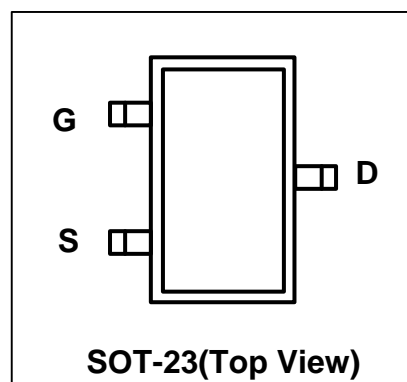
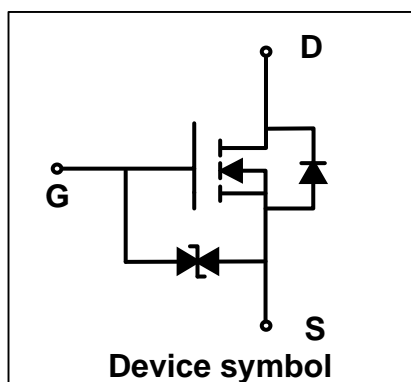
- $V_{DS} = 30\text{ V}$, $I_D = 0.6\text{ A}$
 $R_{DS(on)} < 0.50\ \Omega @ V_{GS} = 4.5\text{ V}$
 $R_{DS(on)} < 0.68\ \Omega @ V_{GS} = 2.5\text{ V}$
- Very Fast Switching
- Trench MOSFET Technology
- Pb Free Device
- ESD Protected

Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant



Schematic & PIN Configuration



Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Continuous Drain Current	I_D	600	mA
Gate-Source Voltage	V_{GS}	± 12	V
Power Dissipation ¹	P_D	350	mW
Pulsed Drain Current ²	I_{DM}	1.8	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$
Junction-to-Ambient – Steady State ²	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$

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	30	-	-	V
Gate Threshold Voltage ³	V_{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7	-	1.1	V
Drain Cut-off Current	I_{DSS}	V _{DS} =30 V, V _{GS} =0 V	-	-	1	μA
Gate leakage Current	I_{GSS}	V _{GS} =±12 V, V _{DS} =0 V	-	-	±10	μA
Drain-Source On-state Resistance ³	R_{DS(on)}	V _{GS} =4.5 V, I _D =600mA	-	0.31	0.50	Ω
		V _{GS} =2.5 V, I _D =300mA	-	0.40	0.68	Ω
Diode Forward Voltage ³	V_{SD}	I _S =600mA, V _{GS} =0V	-	-	1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	-	47	-	pF
Output Capacitance	C_{OSS}		-	11	-	
Reverse Transfer Capacitance	C_{rss}		-	7.4	-	
Switching Characteristics						
Total Gate Charge	Q_g	V _{DS} = 15V, V _{GS} = 4.5V, I _D = 1.0A	-	1.2	-	nC
Gate-Source Charge	Q_{gs}		-	0.3	-	
Gate-Drain Charge	Q_{gd}		-	0.28	-	
Turn-On Delay Time	t_{d(on)}	V _{DS} = 15V, V _{GEN} =4.5V, I _D = 6Ω, R _L = 15Ω	-	6.5	-	ns
Rise Time	t_r		-	9.5	-	
Turn-Off Delay Time	t_{d(off)}		-	24	-	
Fall Time	t_f		-	35	-	

Note 1. This test is performed with no heat sink at Ta=25°C.

Note 2. Repetitive Rating: Pulse width limited by maximum junction temperature.

Note 3. Pulse Test : Pulse Width≤380μs, Duty Cycle≤0.5%.

Typical Characteristics

Figure 1. Output Characteristics

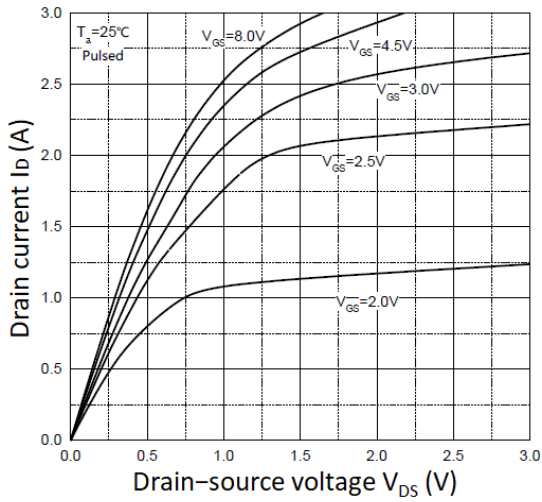


Figure 2. Transfer Characteristics

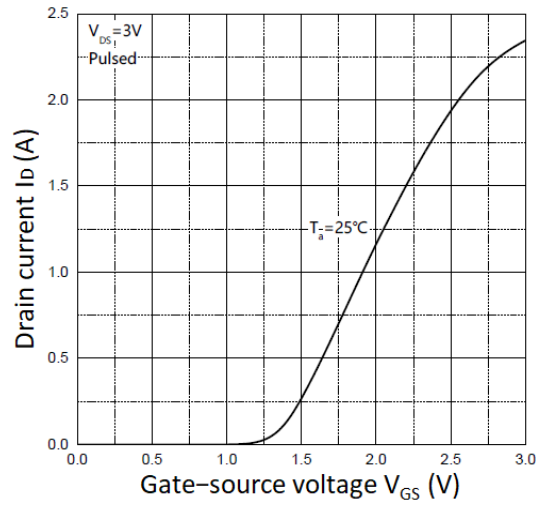


Figure 3. $R_{DS(on)}$ vs. I_D

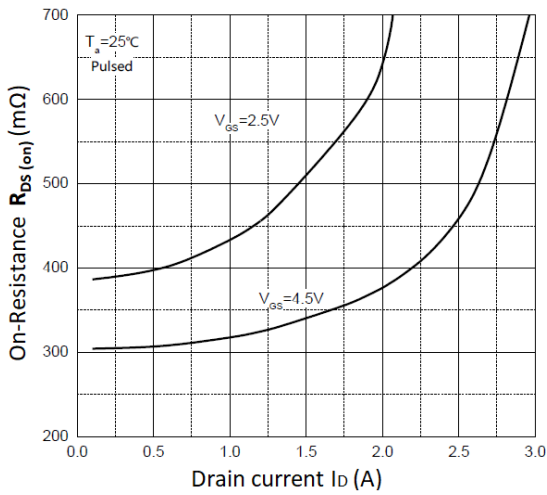


Figure 4. $R_{DS(on)}$ vs. V_{GS}

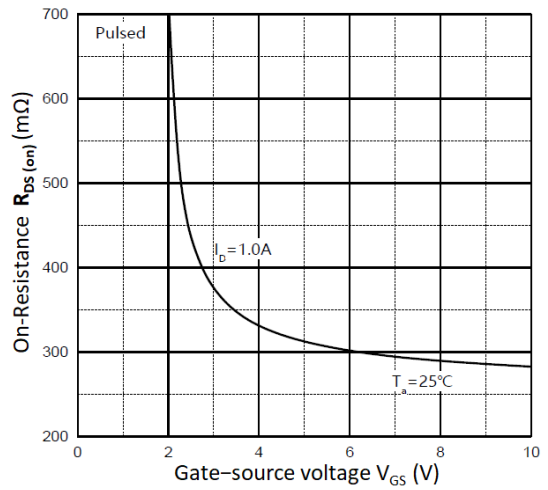


Figure 5. I_S vs. V_{SD}

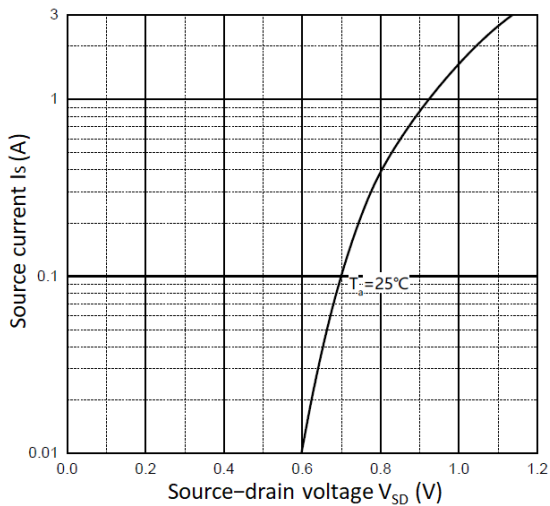
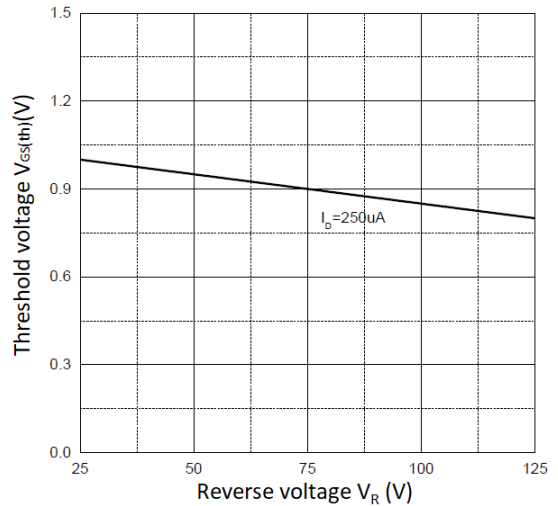
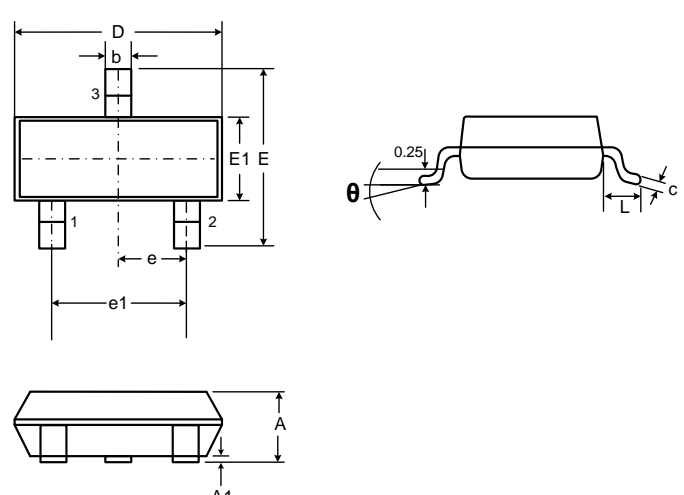


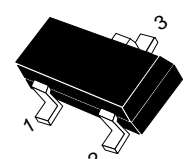
Figure 6. $V_{GS(th)}$ vs. T_J



Outline Drawing – SOT-23

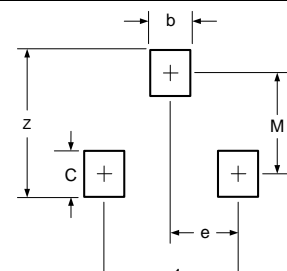
PACKAGE OUTLINE





SOT-23

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		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
θ	0°	8°	0°	8°

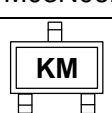


DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.032	0.80

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	WM03N06M
Marking Code	

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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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.