

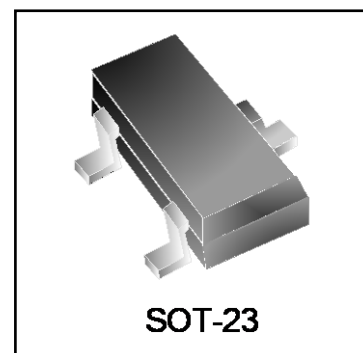
**WD3400****N-Channel Enhancement MOSFET**

Features

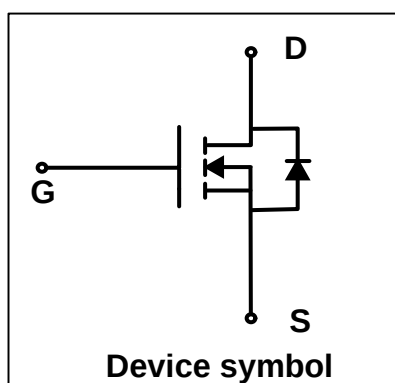
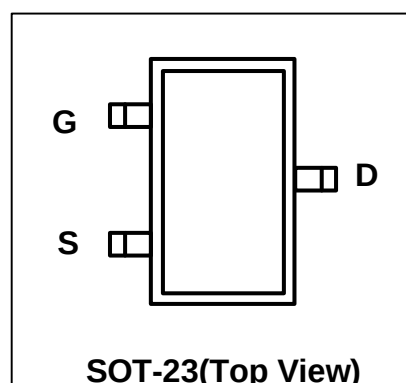
- Small Single MOSFETs
- $V_{DS} = 30V$, $I_D = 5.8A$
 $R_{DS(on)} < 35m\Omega$ @ $V_{GS} = 10V$
 $R_{DS(on)} < 40m\Omega$ @ $V_{GS} = 4.5V$
 $R_{DS(on)} < 52m\Omega$ @ $V_{GS} = 2.5V$
- Trench Power LV MOSFET Technology

Mechanical Characteristics

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



Schematic & PIN Configuration

**Device symbol****SOT-23(Top View)**

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}	± 12	V
Continuous Drain Current	$T_C = 25^\circ C$	I_D	5.8	A
Pulsed Drain Current ¹		I_{DM}	22	A
Power Dissipation		P_D	1.2	W
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 noted)**

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{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} = ±12V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = 0V, I _D = 250μA	0.7	-	1.4	V
Drain-Source on-state Resistance ³	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A	-	23	35	mΩ
		V _{GS} = 4.5V, I _D = 5A	-	26	40	
		V _{GS} = 2.5V, I _D = 4A	-	40	52	
Dynamic Characteristics ⁴						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	-	560	-	pF
Output Capacitance	C _{oss}		-	70	-	
Reverse Transfer Capacitance	C _{rss}		-	50	-	
Switching Characteristics ⁴						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 4.5V, I _D = 5.8A	-	7.5	-	nC
Gate-Source Charge	Q _{gs}		-	1.6	-	
Gate-Drain Charge	Q _{gd}		-	2.1	-	
Turn-on Delay Time	t _{d(on)}	V _{DS} = 15V, V _{GS} = 10V, R _{GEN} =3Ω, R _L =2.7Ω	-	5	-	ns
Turn-on Rise Time	t _r			7		
Turn-off Delay Time	t _{d(off)}		-	40	-	
Turn- off Fall Time	t _f		-	6	-	
Source-Drain Body Diode Characteristics						
Body Diode Voltage ³	V _{SD}	I _S =1A, V _{GS} = 0V	-	-	1.3	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 20Z 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

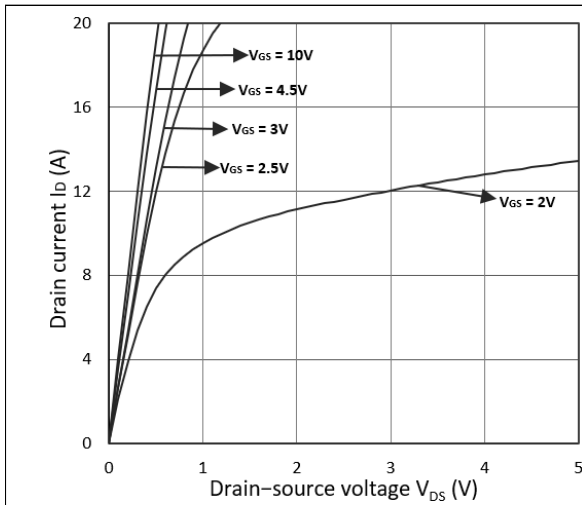


Figure 1. Output Characteristics

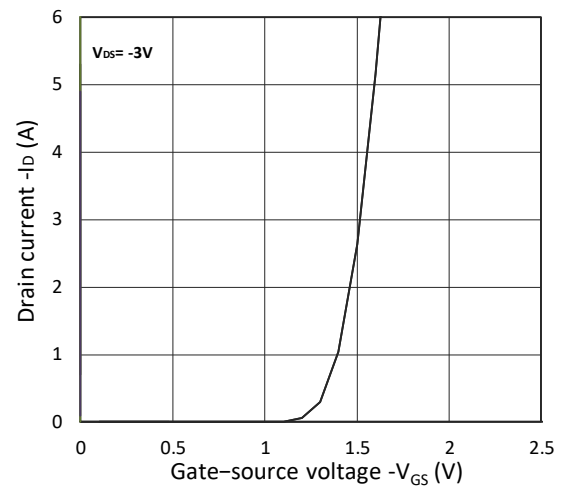


Figure 2. Transfer Characteristics

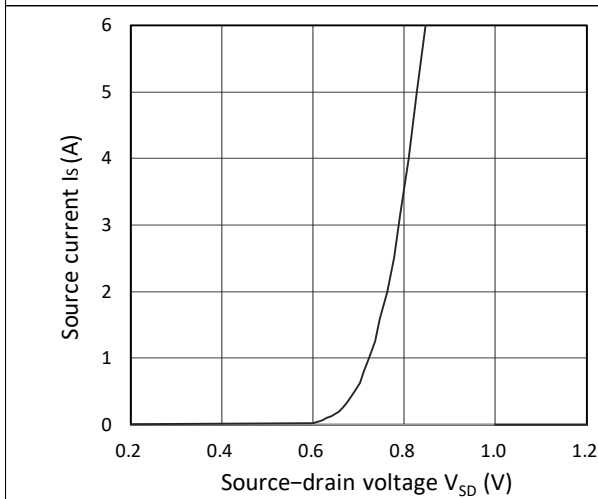


Figure 3. Forward Characteristics of Reverse

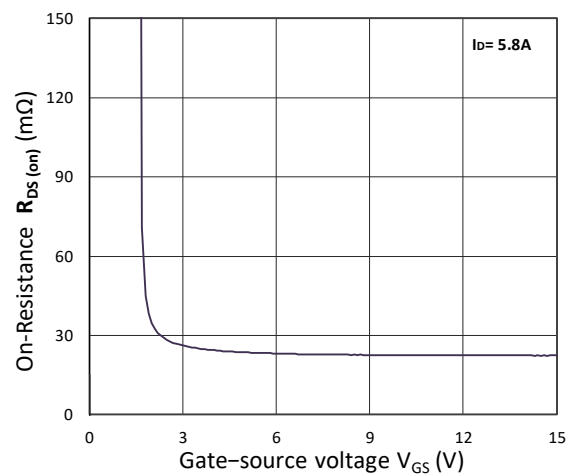


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

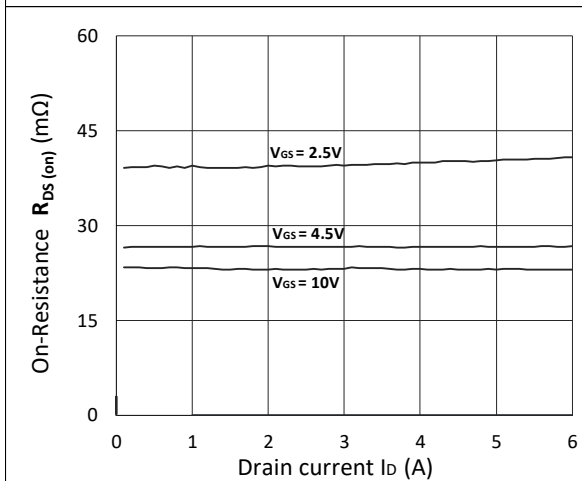


Figure 5. $R_{DS(ON)}$ vs. I_D

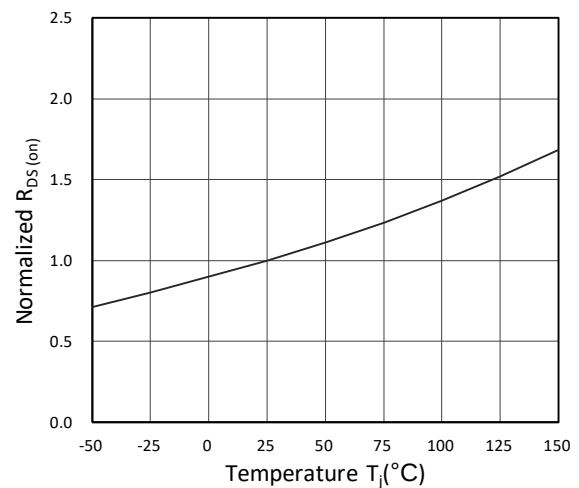
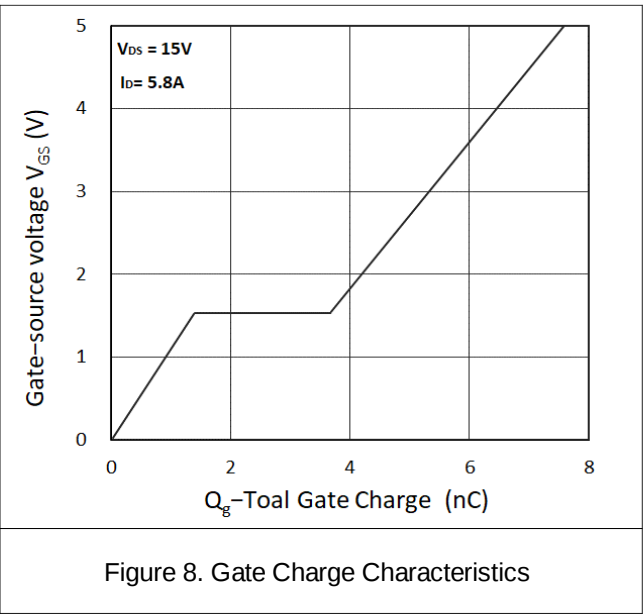
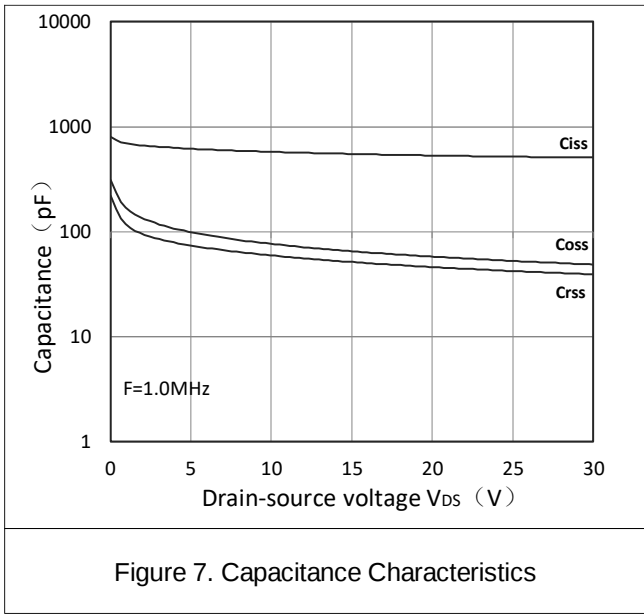
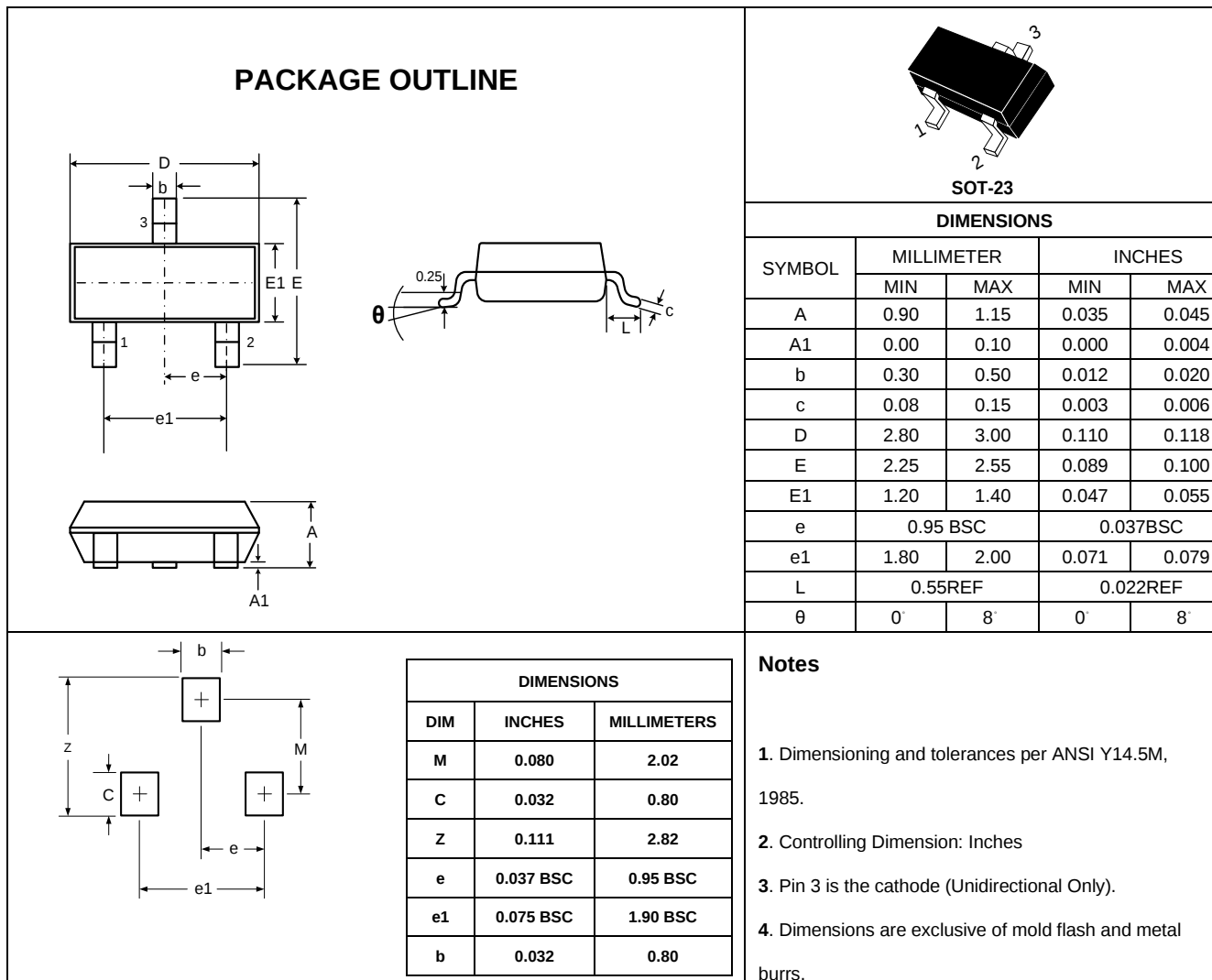


Figure 6. Normalized $R_{DS(ON)}$ vs. Temperature



**Outline Drawing – SOT-23****Marking Codes**

Part Number	WD3400
Marking Code	

Package Information

Qty: 3k/Reel