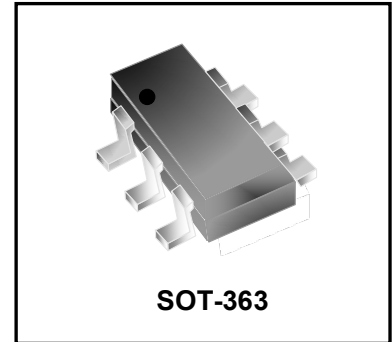


## Dual N-Channel Enhancement MOSFET

### Features

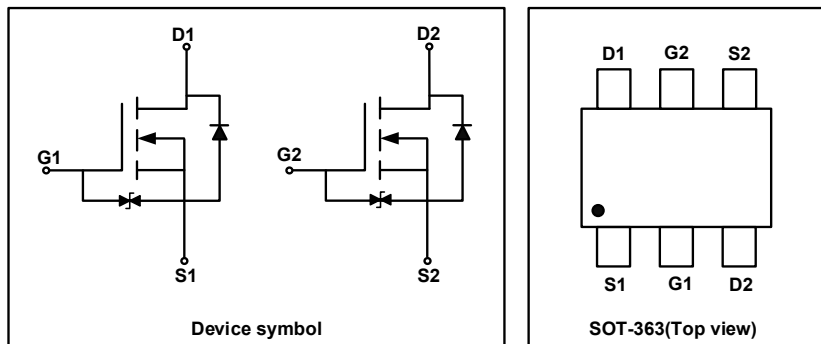
- Way-on Small Signal MOSFETs
- $V_{DS} = 30V$ ,  $I_D = 0.6A$   
 $R_{DS(on)} < 0.5\Omega @ V_{GS} = 4.5V$   
 $R_{DS(on)} < 0.68\Omega @ V_{GS} = 2.5V$
- Trench LV MOSFET Technology
- ESD Protected



### Mechanical Characteristics

- SOT-363 Package
- Marking : Making Code
- RoHS Compliant

### 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	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	0.6	A
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	1.8	A
Power Dissipation	$P_D$	300	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>	$R_{\theta JA}$	416.7	$^\circ C/W$

**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	<b>BV<sub>DSS</sub></b>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30	-	-	V
Gate-Body Leakage Current	<b>I<sub>GSS</sub></b>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±12V	-	-	±10	μA
Zero Gate Voltage Drain Current	<b>I<sub>DSS</sub></b>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V	-	-	1	μA
Gate Threshold Voltage	<b>V<sub>GS(th)</sub></b>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.7	-	1.1	V
Drain-Source on-State Resistance <sup>3</sup>	<b>R<sub>DS(on)</sub></b>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.6A	-	0.33	0.5	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 0.3A	-	0.42	0.68	
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	<b>C<sub>iss</sub></b>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz	-	40	-	pF
Output Capacitance	<b>C<sub>oss</sub></b>		-	8	-	
Reverse Transfer Capacitance	<b>C<sub>rss</sub></b>		-	3.5	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total Gate charge	<b>Q<sub>g</sub></b>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 15V, I <sub>D</sub> = 0.6A	-	0.45	-	nC
Gate-Source Charge	<b>Q<sub>gs</sub></b>		-	0.12	-	
Gate-Drain Charge	<b>Q<sub>gd</sub></b>		-	0.1	-	
Turn-on Delay Time	<b>t<sub>d(on)</sub></b>	V <sub>GS</sub> = 4.5V, V <sub>DD</sub> = 15V, I <sub>D</sub> = 0.6A, R <sub>G</sub> = 3Ω	-	1.5	-	ns
Turn-on Rise Time	<b>t<sub>r</sub></b>		-	15.5	-	
Turn-off Delay Time	<b>t<sub>d(off)</sub></b>		-	3.8	-	
Turn-off Fall Time	<b>t<sub>f</sub></b>		-	8	-	
<b>Source-Drain Diode Characteristics</b>						
Body Diode Voltage <sup>3</sup>	<b>V<sub>SD</sub></b>	I <sub>S</sub> = 0.6A, V <sub>GS</sub> = 0V	-	-	1.2	V
Continuous Source Current	<b>I<sub>S</sub></b>		-	-	0.6	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

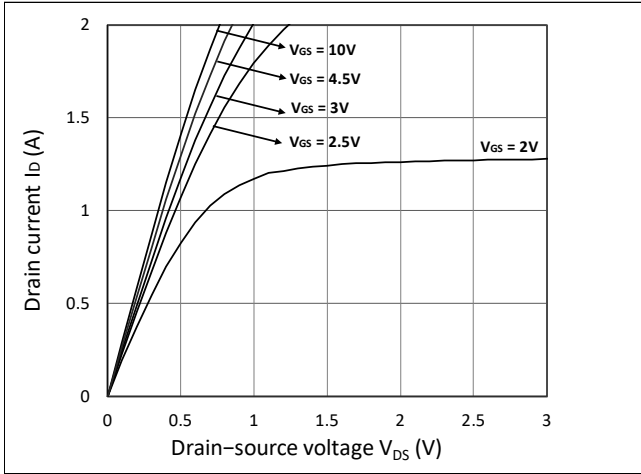


Figure 1. Output Characteristics

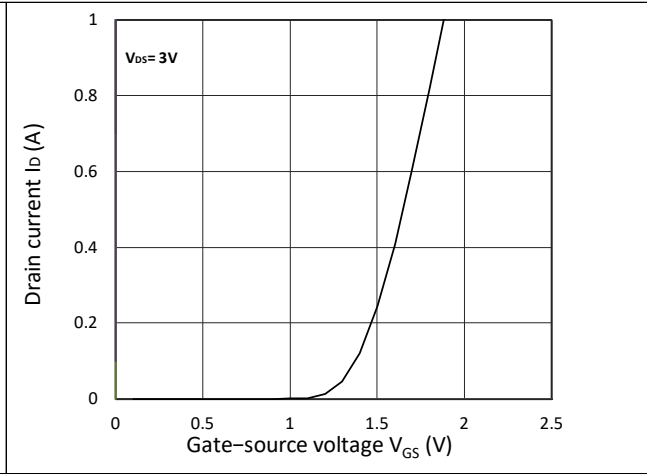


Figure 2. Transfer Characteristics

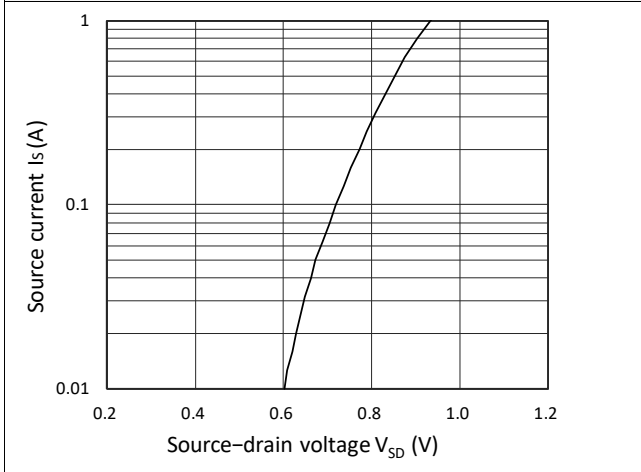


Figure 3. Forward Characteristics of Reverse

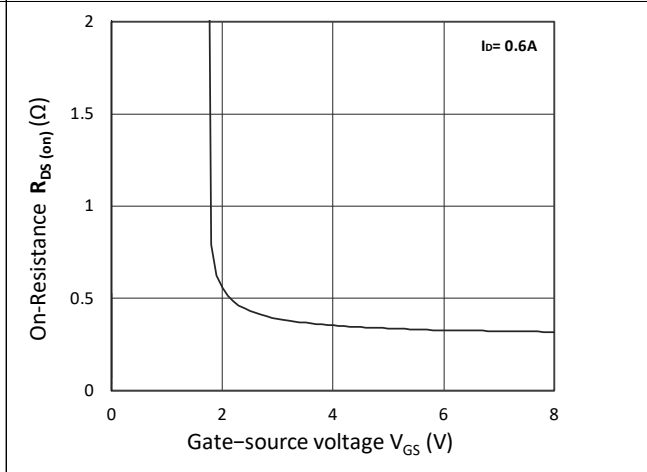


Figure 4.  $R_{DS(ON)}$  vs.  $V_{GS}$

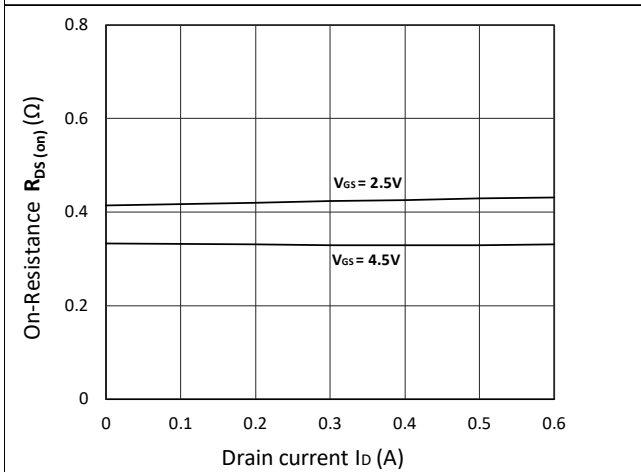


Figure 5.  $R_{DS(ON)}$  vs.  $I_D$

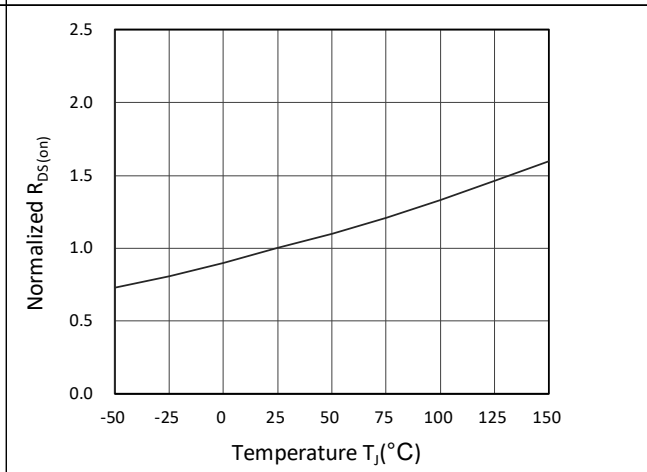
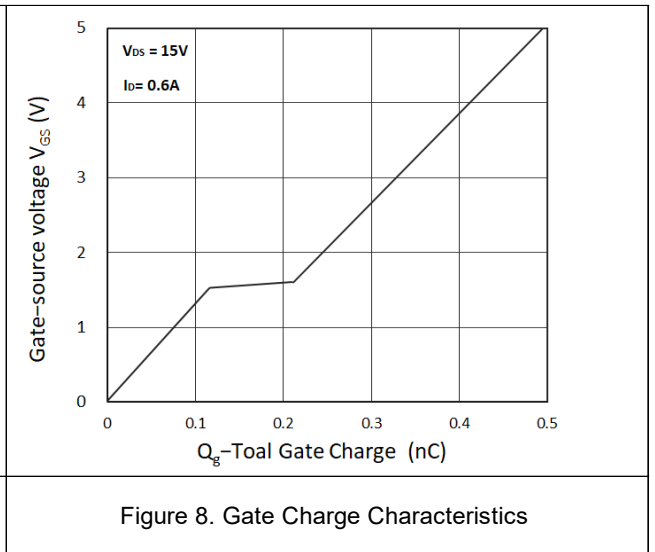
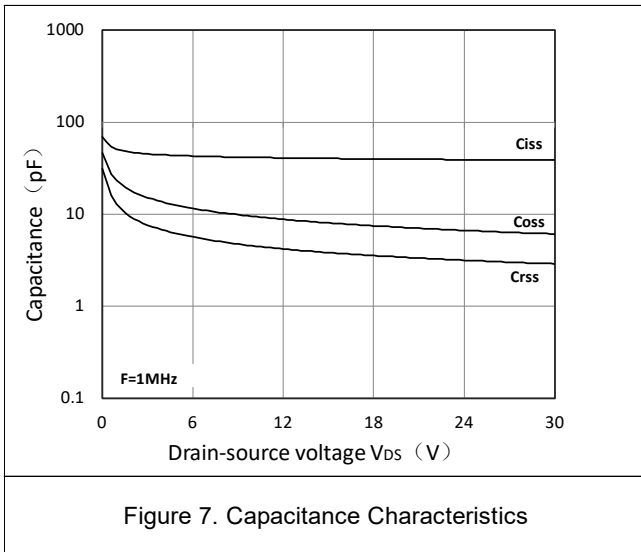


Figure 6. Normalized  $R_{DS(ON)}$  vs. Temperature



### Outline Drawing – SOT-363

#### PACKAGE OUTLINE

**SOT-363**

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.10	0.035	0.043
A1	0.00	0.10	0.000	0.004
b	0.15	0.35	0.006	0.014
c	0.10	0.15	0.004	0.006
D	2.00	2.20	0.079	0.087
E1	1.15	1.35	0.045	0.053
E	2.15	2.45	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.20	1.40	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.26	0.46	0.010	0.018
θ	0°	8°	0°	8°

DIMENSIONS		
DIM	INCHES	MILLIMETERS
Z	0.110	2.79
G	0.043	1.09
C	0.076	1.94
P	0.026 TYP	0.65 TYP
X	0.016	0.40
Y	0.033	0.85

**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	WM03DN06D
Marking Code	

### Package Information

Qty: 3k/Reel

### CONTACT INFORMATION

No.1001, Shiwan (7) Road, Pudong District, Shanghai, P.R.China.201207

Tel: 86-21-68969993 Fax: 86-21-50757680 Email: [market@way-on.com](mailto:market@way-on.com)

WAYON website: <http://www.way-on.com>

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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.

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