WM02DN095C

Dual N-Channel Enhancement Mode MOSFET

Description

WM02DN095C uses advanced power trench technology that has been especially tailored to minimize the on-state resistance This device is suitable for un-directional or bidirectional load switch, facilitated by its common-drain configuration

| $V_{(BR)DSS}(V)$	$I_D(A)$	$R_{DS(on)}$TYP (mΩ)
20	9.5	7.4 @VGS=4.5V
		7.8 @VGS=4.0V
		8.0 @VGS=3.7V
		8.8 @VGS=3.1V
		10.4 @VGS=2.5V

Features

- Super high dense cell for low $R_{DS(ON)}$
- RoHS Compliant and Halogen-Free
- ESD protected: Class 2

Applications

- Battery protection
- Load switch

Schematic & PIN Configuration

DFN2030-6L

Device symbol
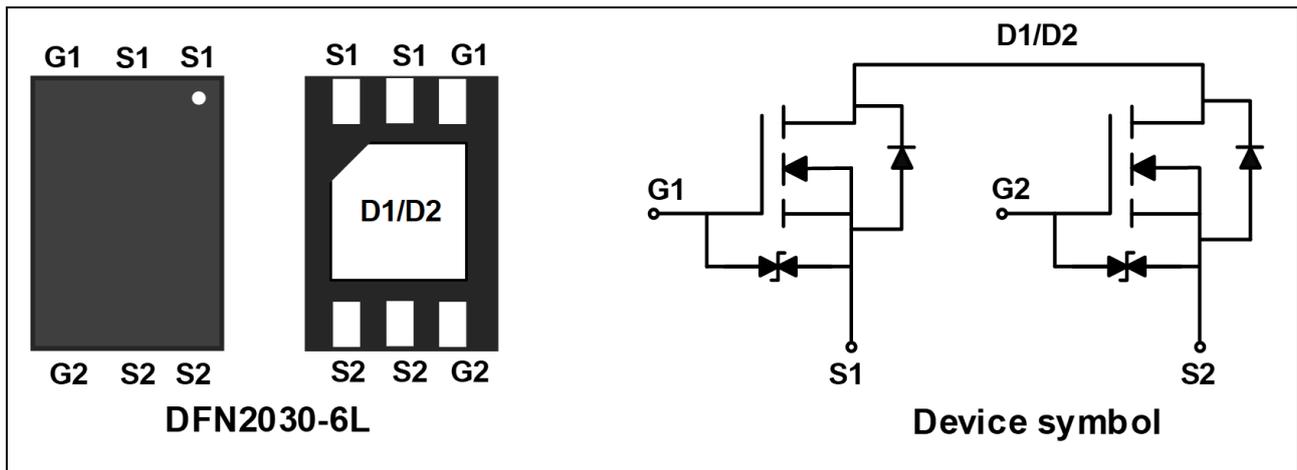
Absolute Maximum Rating

Parameter		Symbol	Value	Unit
Drain-Source voltage		V_{DS}	20	V
Gate-Source voltage		V_{GS}	±12	V
Continuous Drain Current	T_A=25℃	I_D	9.5	A
	T_A=70℃		7.6	
Pulsed Drain Current[1]		I_{DM}	60	A
Single Pulse Avalanche Energy[5]		EAS	31	mJ
Avalanche Current		I_{AS}	25	A
Total Power Dissipation	T_A=25℃	P_D	1.56	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	℃
Maximum Junction-to-Ambient[2]		$R_{θJA}$	80	℃/W

Electrical Characteristics (T$_{amb}$=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V$_{(BR)DSS}$	V$_{GS}$ = 0V, I$_D$ = 250µA	20	-	-	V
Gate-body Leakage Current	I$_{GSS}$	V$_{DS}$ = 0V, V$_{GS}$ = ±8V	-	-	±10	µA
Zero Gate Voltage Drain Current	I$_{DSS}$	V$_{DS}$ = 20V, V$_{GS}$ = 0V	-	-	1	µA
Gate-Threshold Voltage[3]	V$_{GS(th)}$	V$_{DS}$ = V$_{GS}$, I$_D$ = 250µA	0.45	-	1.5	V
Drain-Source on-Resistance[3]	R$_{DS(on)}$	V$_{GS}$ = 4.5V, I$_D$ = 5A	5.4	7.4	9.4	mΩ
		V$_{GS}$ = 4.0V, I$_D$ = 5A	5.8	7.8	9.8	
		V$_{GS}$ = 3.7V, I$_D$ = 5A	6	8	10	
		V$_{GS}$ = 3.1V, I$_D$ = 5A	6.4	8.8	11.2	
		V$_{GS}$ = 2.5 V, I$_D$ = 5A	8	10.4	12.8	
Forward Transconductance[3]	g$_{fs}$	V$_{DS}$ = 5V, I$_D$ = 5A	-	42	-	S
Dynamic Characteristics						
Input Capacitance	C$_{iss}$	V$_{DS}$ = 10V, V$_{GS}$ = 0V, f = 1MHz	-	1647	-	pF
Output Capacitance	C$_{oss}$		-	170	-	
Reverse Transfer Capacitance	C$_{rss}$		-	148	-	
Switching Characteristics						
Total Gate Charge[4]	Q$_g$	V$_{GS}$ = 4.5V, V$_{DS}$ = 15V, I$_D$= 5.5A	-	22	-	nC
Gate-Source Charge[4]	Q$_{gs}$		-	3.1	-	
Gate-Drain Charge[4]	Q$_{gd}$		-	8.2	-	
Turn-on Delay Time[4]	t$_{d(on)}$	V$_{GS}$ = 4.5V, V$_{DD}$ = 15V, R$_G$ = 6Ω, I$_D$= 5.5A	-	10	-	nS
Rise Time[4]	t$_r$		-	39.5	-	
Turn-off Delay Time[4]	t$_{d(off)}$		-	65	-	
Fall Time[4]	t$_f$		-	30	-	
Drain-Source Body Diode Characteristics						
Diode Forward Voltage	V$_{SD}$	I$_S$ = 9.5A, V$_{GS}$ = 0V	-	-	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.

3. Pulse Test: Pulse width≤300µs, duty cycle≤2%.

4. Guaranteed by design, not subject to product

5. The EAS data shows Max. rating . The test condition is V$_{DD}$=25V, V$_{GS}$=10V, L=0.1mH, I$_{AS}$=25A.

## Typical Characteristics

Figure 1. Output Characteristics
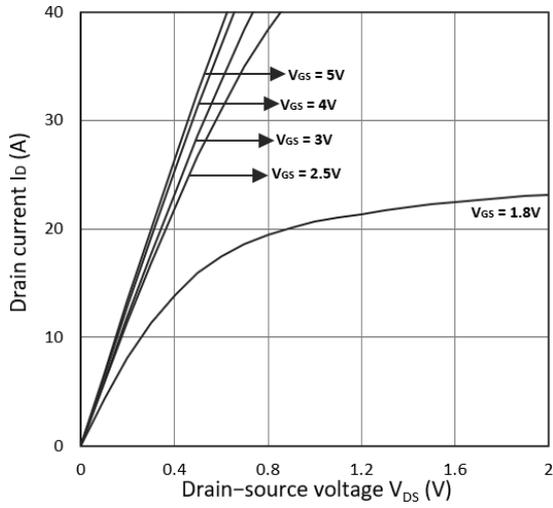
Figure 2. Transfer Characteristics
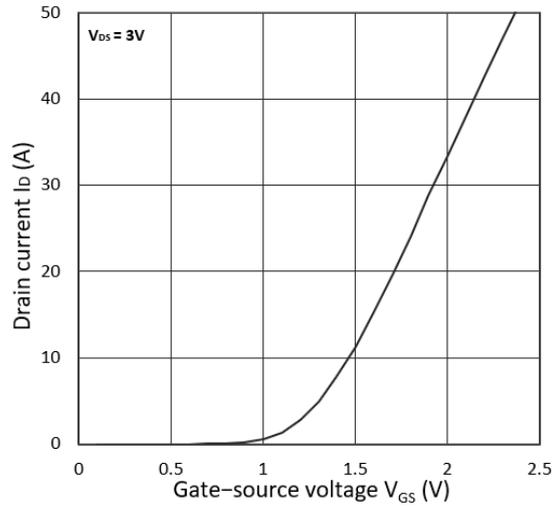
Figure 3. $R_{DS(ON)}$ vs. I_D
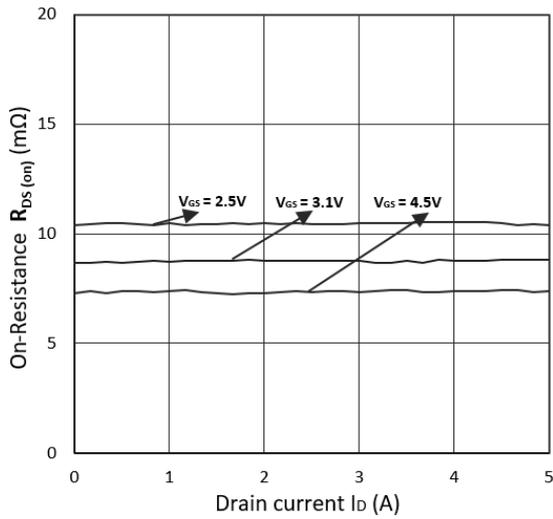
Figure 4. $R_{DS(ON)}$ vs. V_{GS}
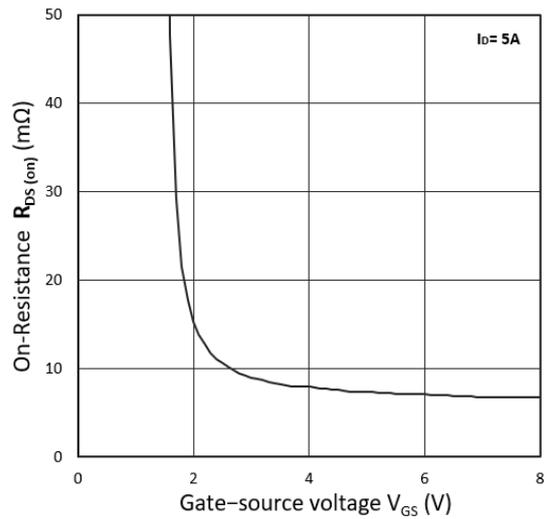
Figure 5. I_S vs. V_{SD}
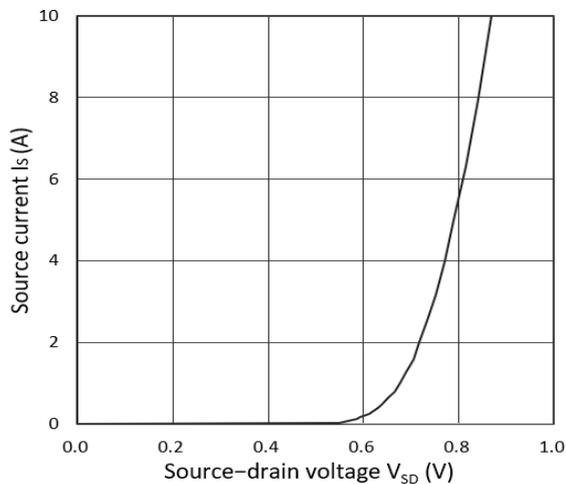
Figure 6. Capacitance Characteristics
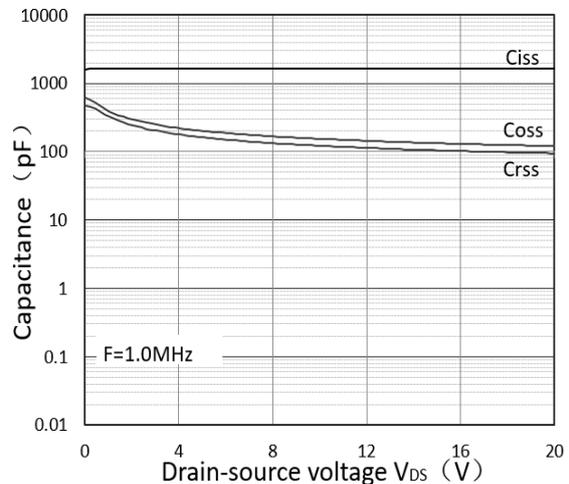
Outline Drawing –DFN2030-6L

PACKAGE OUTLINE

DFN2030-6L

DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.80	0.028	0.031
A1	0.00	0.05	0.000	0.002
A2	0.203		0.008	
D	1.95	2.05	0.077	0.081
E	2.95	3.05	0.116	0.120
k	1.65	1.75	0.057	0.061
D1	1.45	1.55	0.065	0.069
b	0.20	0.30	0.008	0.012
e	0.50 BSC		0.020BSC	
L	0.30	0.40	0.012	0.016

TOP VIEW

BOTTOM VIEW

SIDE VIEW
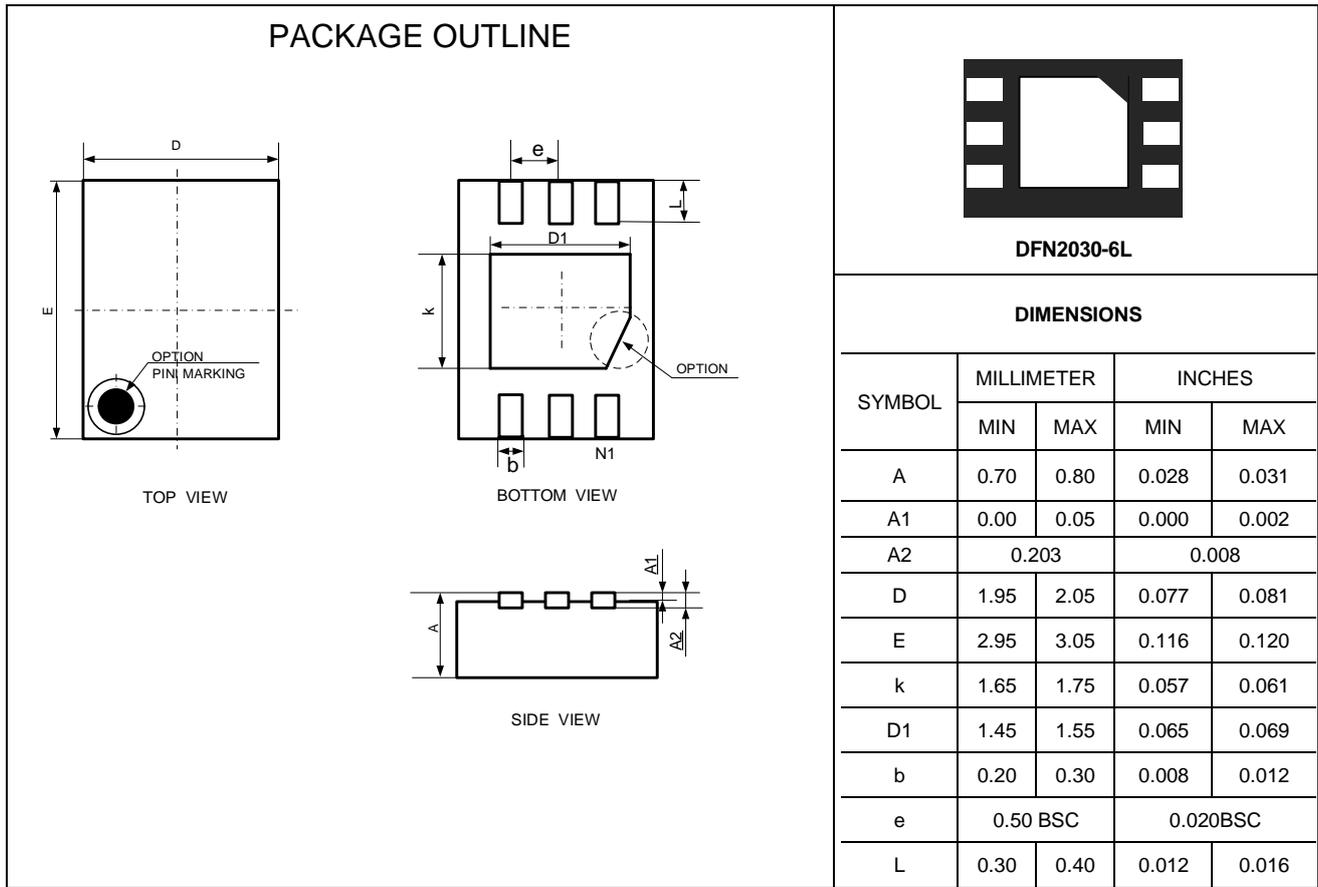
Marking Codes

Part Number	WM02DN095C
Marking Code	● C095N02 WWXX XXX C095N02 = Device Code WWXX XXX= Date Code

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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