



WM05P02F

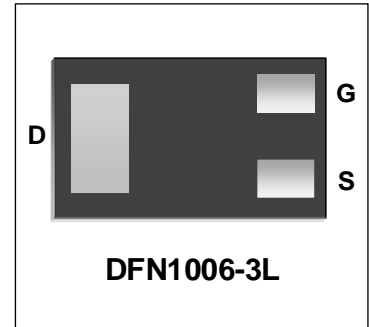
P-Channel MOSFET

Features

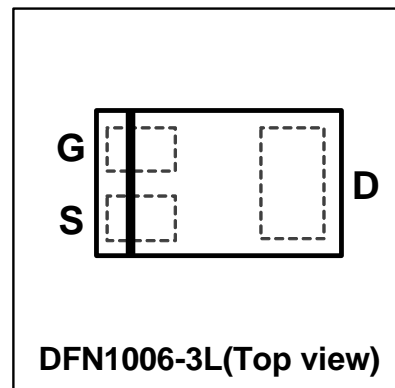
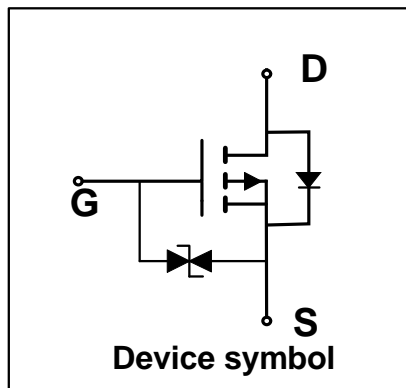
- $V_{DS} = -50V$, $I_D = -0.25A$
 $R_{DS(on)} < 7\Omega @ V_{GS} = -10V$
 $R_{DS(on)} < 8\Omega @ V_{GS} = -4.5V$
- Trench Power LV MOSFET Technology
- ESD Protected

Mechanical Characteristics

- DFN1006-3L Package
- Marking : Making Code
- RoHS Compliant



Schematic & PIN Configuration



Absolute Maximum Rating

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-0.25	A
Pulsed Drain Current ¹ @ $t_p < 10\mu s$	I_{DM}	-0.7	A
Power Dissipation	P_D	350	mW
Operating Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}C$
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	357	$^{\circ}C/W$

Electrical Characteristics ($T_{amb}=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 10	μA
Gate-Source Threshold Voltage ³	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.5	-2.0	V
Drain-Source on-State Resistance ³	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.25A$	-	3	7	Ω
		$V_{GS}=-4.5V, I_D=-0.1A$	-	4	8	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=-25V,$ $f=1.0MHz$	-	30	-	pF
Output Capacitance	C_{oss}		-	5	-	
Reverse Transfer Capacitance	C_{rss}		-	2	-	
Switching Characteristics						
Total Gate Charge ⁴	Q_g	$V_{GS}=-4.5V, V_{DS}=-25V,$ $I_D=-0.2A$	-	0.32	-	nC
Gate-Source Charge ⁴	Q_{gs}		-	0.19	-	
Gate-Drain Charge ⁴	Q_{gd}		-	0.11	-	
Turn-on Delay time ⁴	$t_{d(on)}$	$V_{GS}=-4.5V, V_{DD}=-15V,$ $R_L=150\Omega, R_{GEN}=3\Omega$	-	9	-	nS
Rise Time ⁴	t_r		-	11	-	
Turn-off Delay Time ⁴	$t_{d(off)}$		-	25	-	
Fall Time ⁴	t_f		-	16	-	
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	$I_S=-0.25A, V_{GS}=0V$	-	-	-1.3	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 $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production.

Typical Characteristics

Figure 1. Output Characteristics

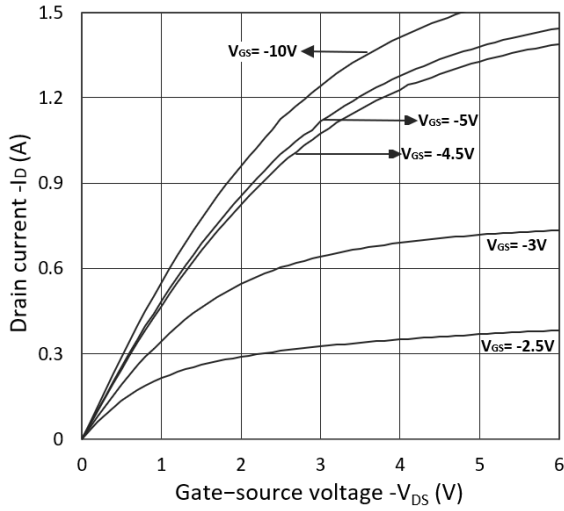


Figure 2. Transfer Characteristics

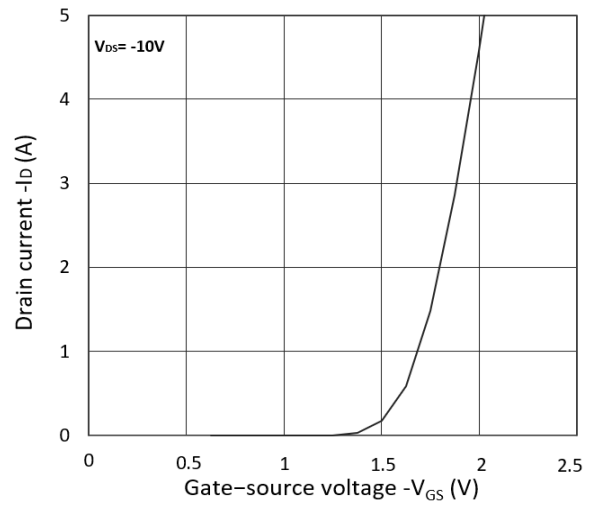


Figure 3. $R_{DS(ON)}$ vs. I_D

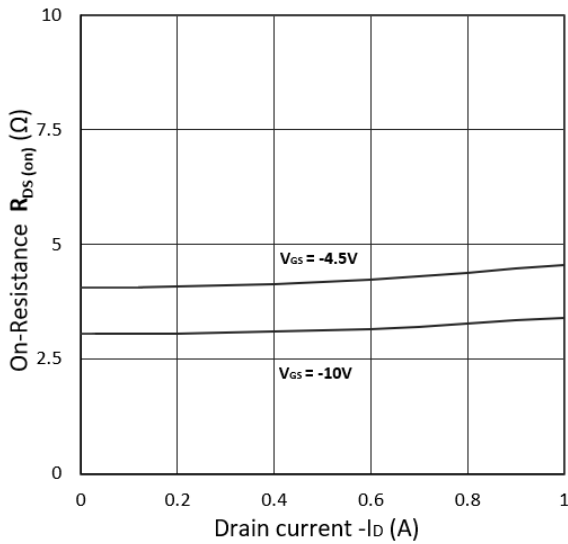


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

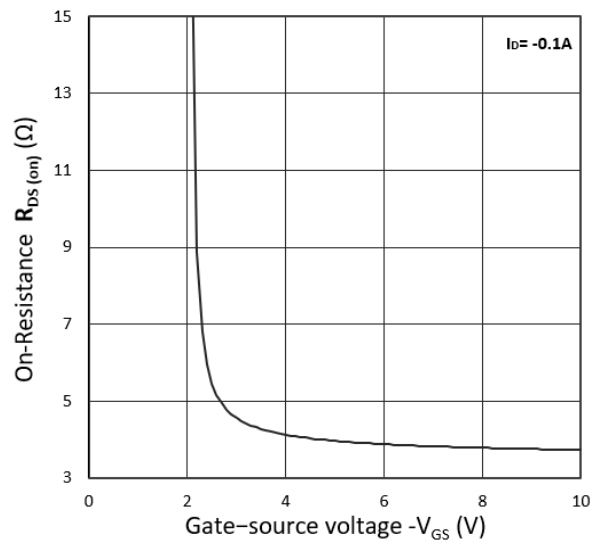


Figure 5. I_S vs. V_{SD}

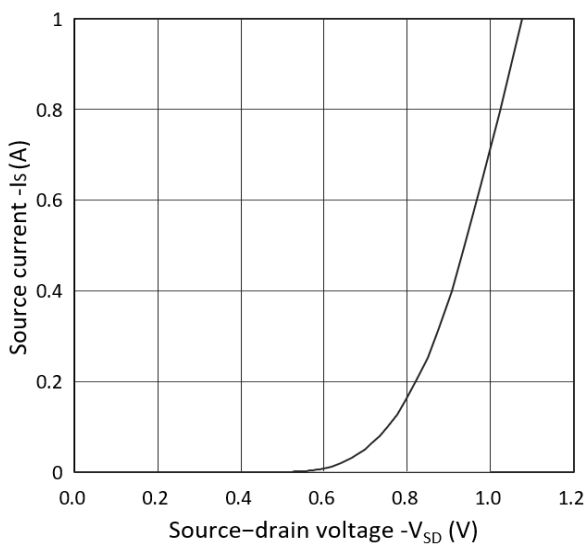
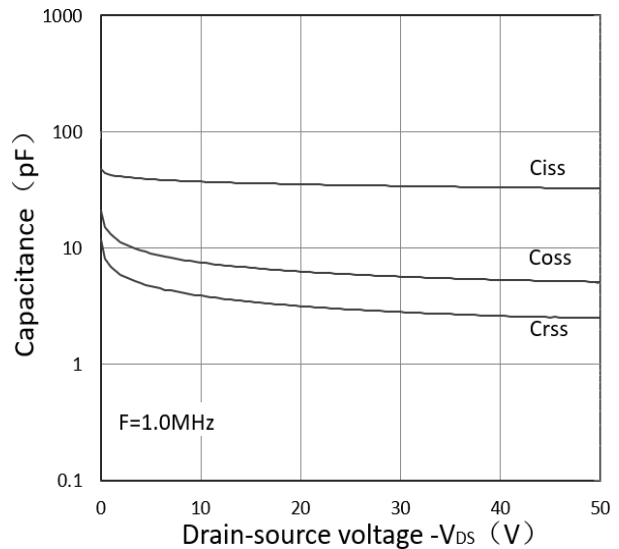


Figure 6. Capacitance Characteristics



Outline Drawing – DFN1006-3L

PACKAGE OUTLINE

TOP VIEW

BOTTOM VIEW

DFN1006-3L

SYMBOL	MILLIMETER		
	MIN.	TYP.	MAX.
A	0.45	0.50	0.55
A1	0.00	-	0.05
b	0.40	0.50	0.60
b1	0.10	0.15	0.20
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
E1	0.19BSC		
L	0.20	0.25	0.30

Land Pattern

Marking Codes

Part Number	WM05P02F
Marking Code	84K

Package Information

Qty: 10k/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.