

P-Channel Enhancement MOSFET

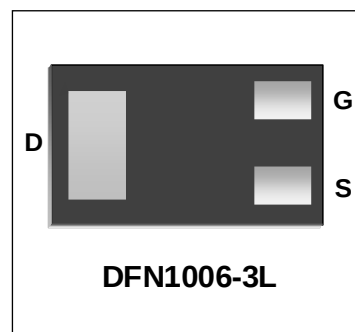
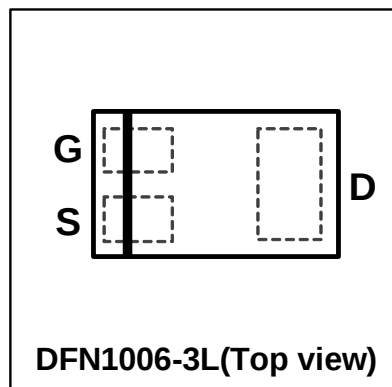
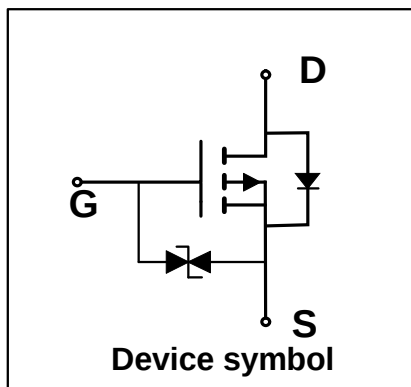
Features

- $V_{DS} = -50V$, $I_D = -0.25A$
 $R_{DS(on)} < 3.2\Omega$ @ $V_{GS} = -10V$
 $R_{DS(on)} < 4\Omega$ @ $V_{GS} = -4.5V$
- Trench Power LV MOSFET Technology
- ESD Protected

Mechanical Characteristics

- DFN1006-3L Package
- Marking : Making Code
- RoHS Compliant & Halogen-Free

Schematic & PIN Configuration



Absolute Maximum Rating ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	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	I_{DM}	-1	A
Power Dissipation	P_D	350	mW
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Thermal Characteristic

Parameter	Symbol	Value	Units
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	357	$^\circ C/W$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ 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
Gate-Source Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.5	-2	V
Drain-Source on-State Resistance ³	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.25A$	-	2	3.2	Ω
		$V_{GS}=-4.5V, I_D=-0.1A$	-	2.2	4	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=-25V, f=1.0MHz$	-	26.5	-	pF
Output Capacitance	C_{oss}		-	5	-	
Reverse Transfer Capacitance	C_{rss}		-	3.5	-	
Switching Characteristics						
Total Gate Charge ⁴	Q_g	$V_{GS}=-10V, V_{DS}=-25V, I_D=-0.2A$	-	2.1	-	nC
Gate-Source Charge ⁴	Q_{gs}		-	0.35	-	
Gate-Drain Charge ⁴	Q_{gd}		-	0.23	-	
Turn-on Delay time ⁴	$t_{d(on)}$	$V_{GS}=-10V, V_{DD}=-25V,, R_G=3\Omega, I_D=-0.2A$	-	10	-	ns
Rise Time ⁴	t_r		-	5.8	-	
Turn-off Delay Time ⁴	$t_{d(off)}$		-	18	-	
Fall Time ⁴	t_f		-	7.5	-	
Source-Drain Diode Characteristics						
Body Diode Voltage ³	V_{SD}	$I_S=-0.25A, V_{GS}=0V$	-	-	-1.3	V
Continuous Source Current	I_S	-	-	-	-0.25	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^{\circ}\text{C}$.
2. The data tested by surface mounted on a 1 inch² 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 $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

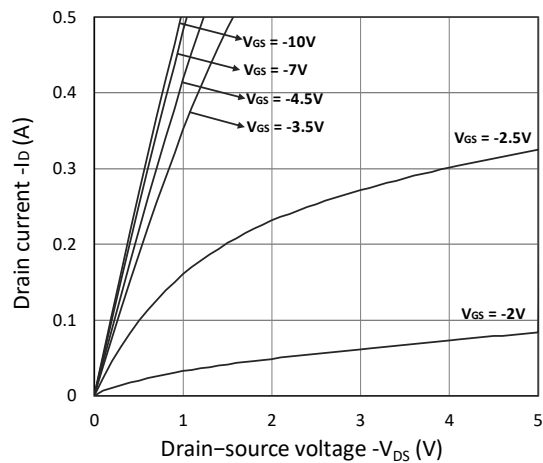


Figure 1. Output Characteristics

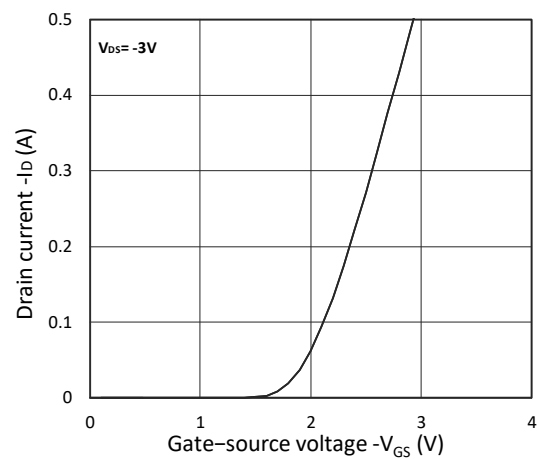


Figure 2. Transfer Characteristics

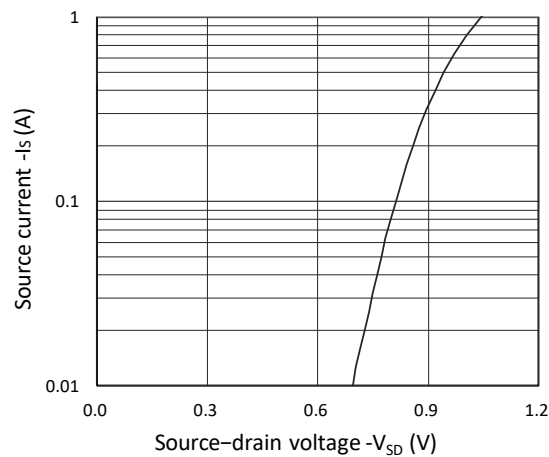
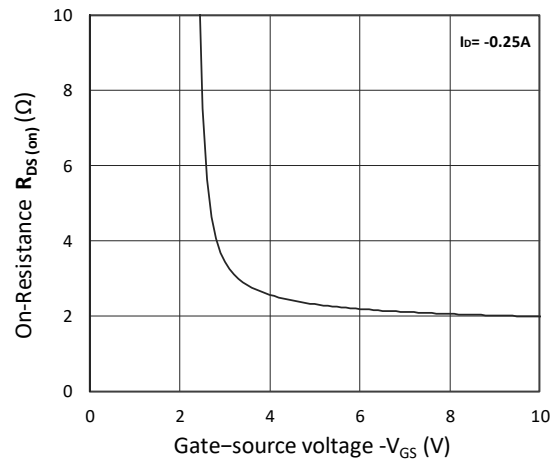
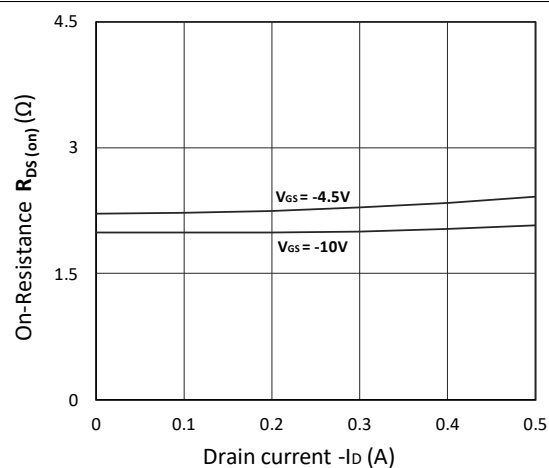
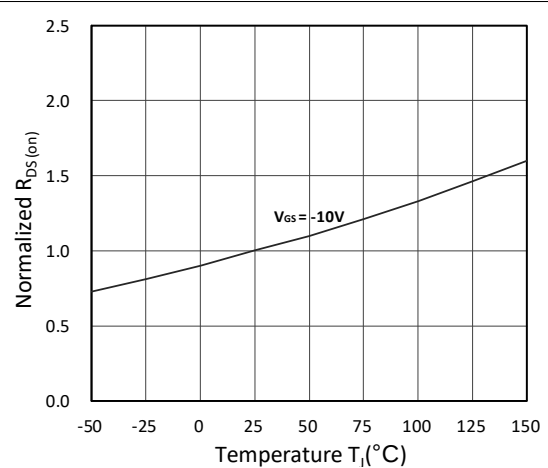


Figure 3. Forward Characteristics of Reverse

Figure 4. $R_{DS(on)}$ vs. V_{GS} Figure 5. $R_{DS(on)}$ vs. I_D Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

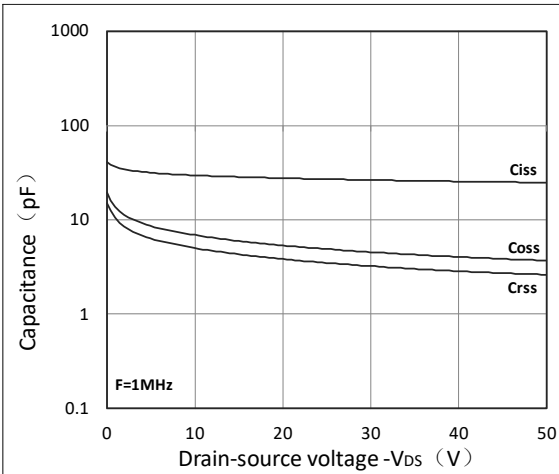


Figure 7. Capacitance Characteristics

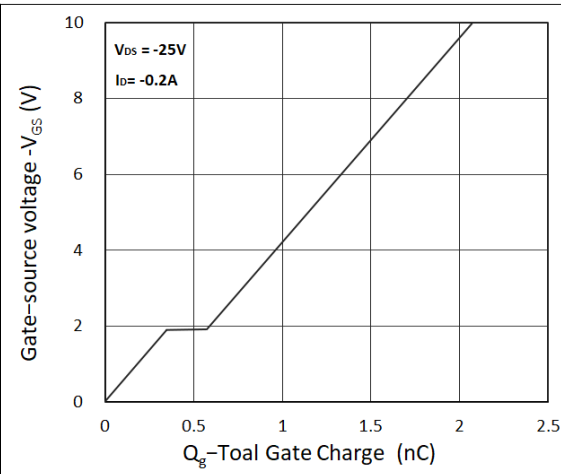
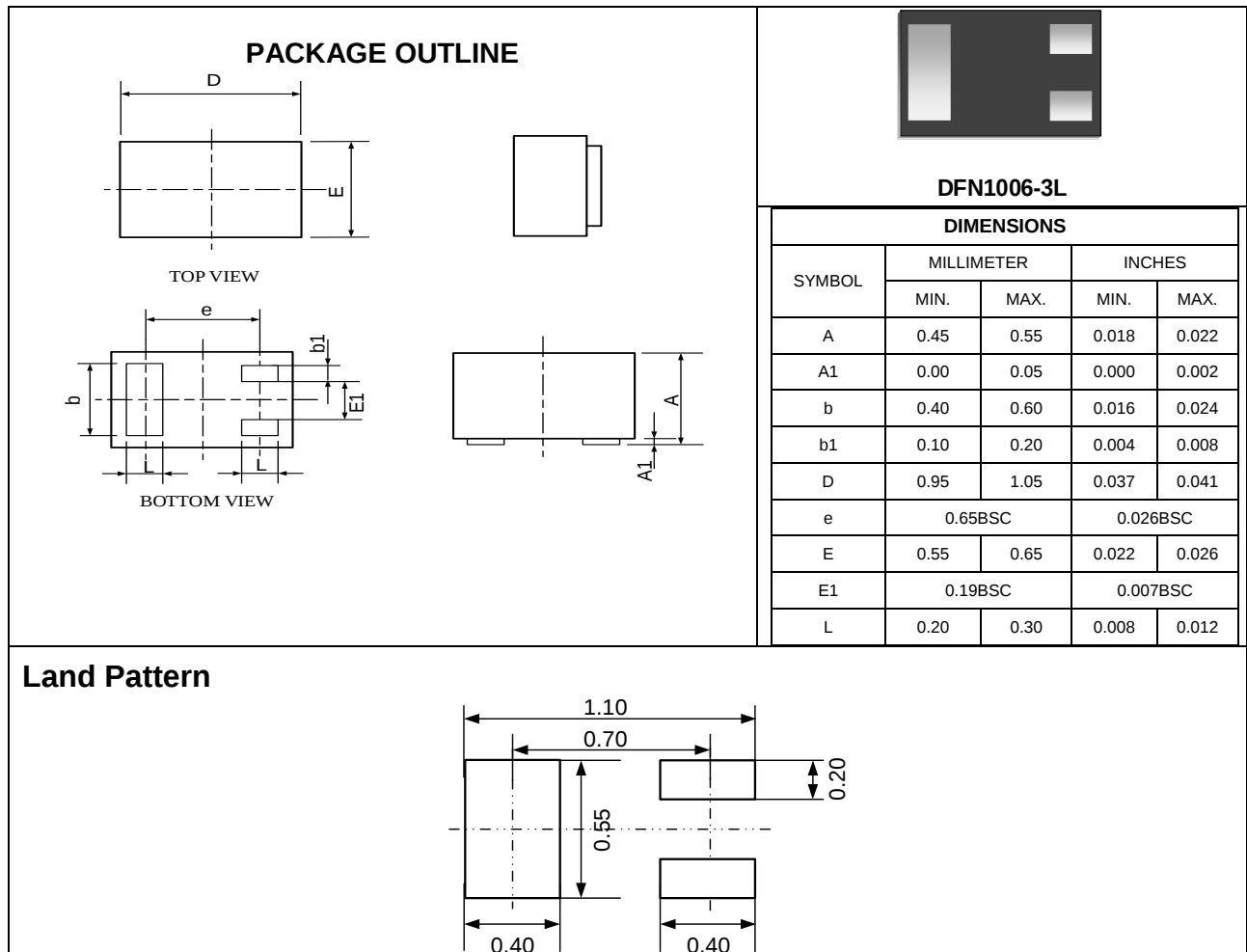


Figure 8. Gate Charge Characteristics

Outline Drawing – DFN1006-3L



Marking Codes

Part Number	WM05P02F
Marking Code	

Package Information

Qty: 10k/Reel

CONTACT INFORMATION

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