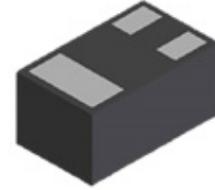
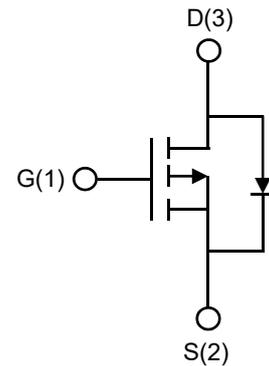


## Description

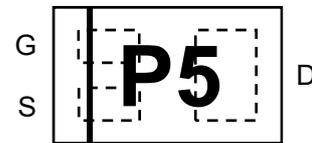
The MOSFET provide the best combination of fast switching , low on-resistance and cost-effectiveness.



**DFN1006-3L  
(Bottom View)**



**Circuit Diagram**



**Marking (Top View)**

### MOSFET Product Summary

$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
-20	130 @ $V_{GS} = -4.5V$	-2
	160 @ $V_{GS} = -2.5V$	

## Feature

- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package

## Applications

- PWM applications
- Load switch
- Power management

## Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-source Voltage	$V_{DS}$	-20	V
Gate-source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current	$I_D$	-2	A
Pulsed Drain Current	$I_{DP}$	-6	A
Total Power Dissipation	$P_D$	270	mW
Channel to ambient	$R_{th(ch-a)}$	420	$^{\circ}C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^{\circ}C$

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$	-	-	-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	$\pm 0.1$	$\mu A$
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.55	-0.85	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -1.0A$	-	130	170	m $\Omega$
		$V_{GS} = -2.5V, I_D = -1.0A$	-	160	190	
Dynamic Parameters						
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, V_{GS} = 0V,$ $f = 1MHz$	-	248	-	pF
Output Capacitance	$C_{oss}$		-	30	-	
Reverse Transfer Capacitance	$C_{rss}$		-	28	-	
Switching Parameters						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = -10V, V_{GS} = -4.5V,$ $R_G = 6\Omega, I_D = 450mA$	-	5	-	ns
Turn-on Rise Time	$t_r$		-	5	-	
Turn-Off Delay Time	$t_{d(off)}$		-	53	-	
Turn-Off Fall Time	$t_f$		-	34	-	
Total Gate Charge	$Q_g$	$V_{DS} = -10V, I_D = -450mA,$ $V_{GS} = -4.5V$	-	3.0	-	nC
Gate-Source Charge	$Q_{gs}$		-	0.2	-	
Gate-Drain Charge	$Q_{gd}$		-	0.8	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = -1A$	-0.5	-0.85	-1.1	V

Typical Characteristics

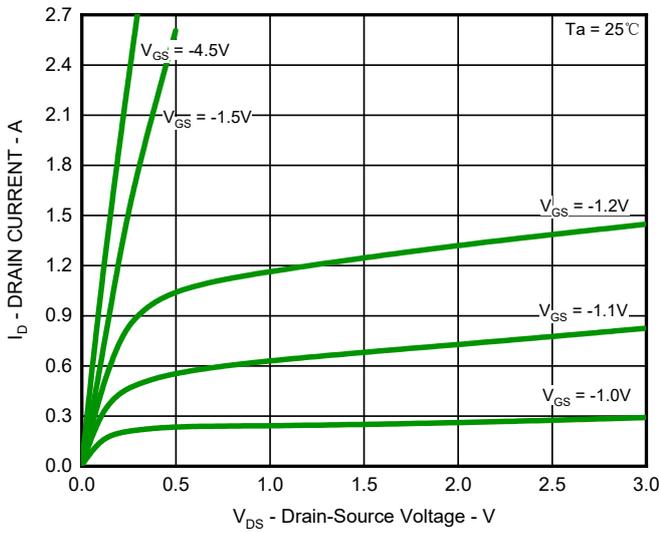


Fig.1 Output Characteristics

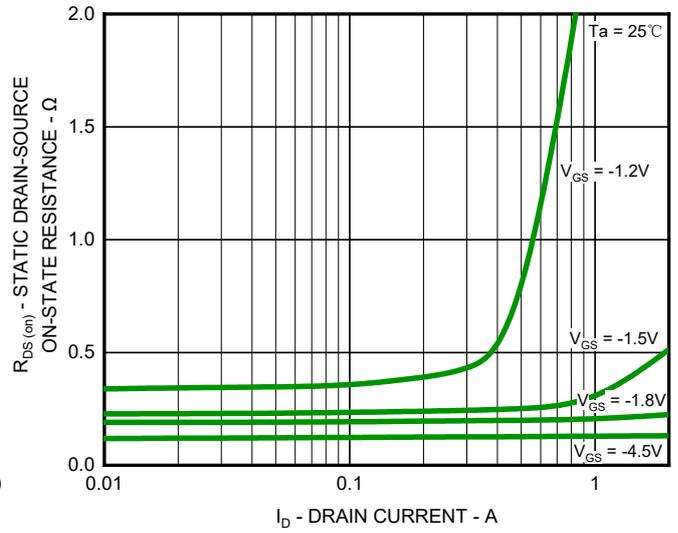


Fig.2 On-Resistance vs. Drain Current (I)

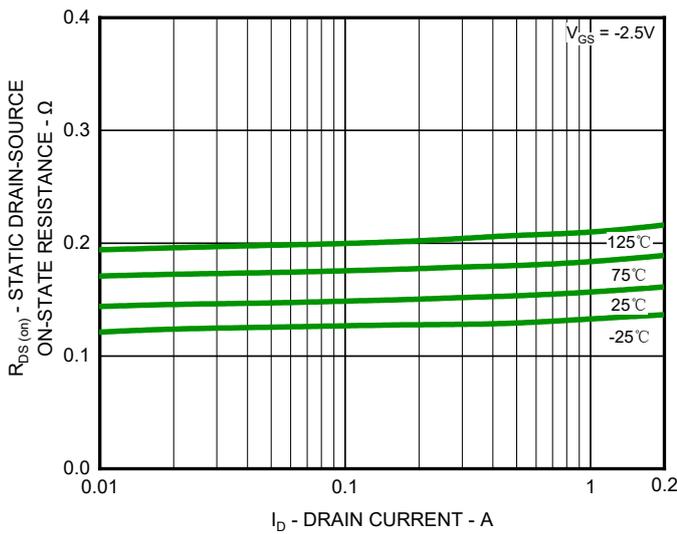


Fig.3 On-Resistance vs. Drain Current (II)

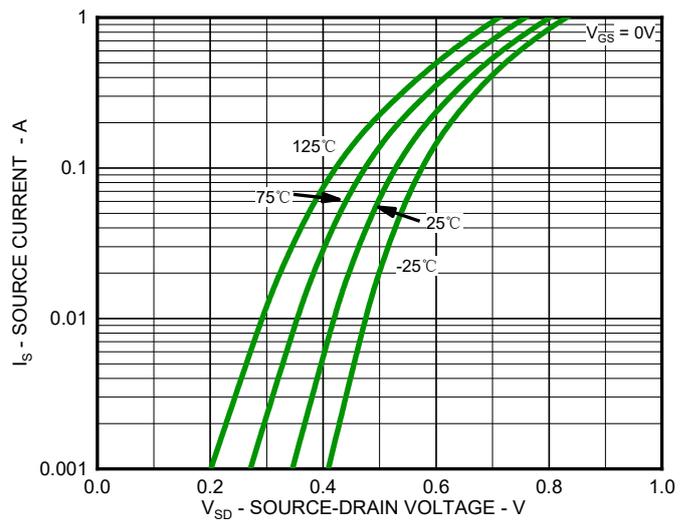


Fig.4 Diode Forward Voltage vs. Current

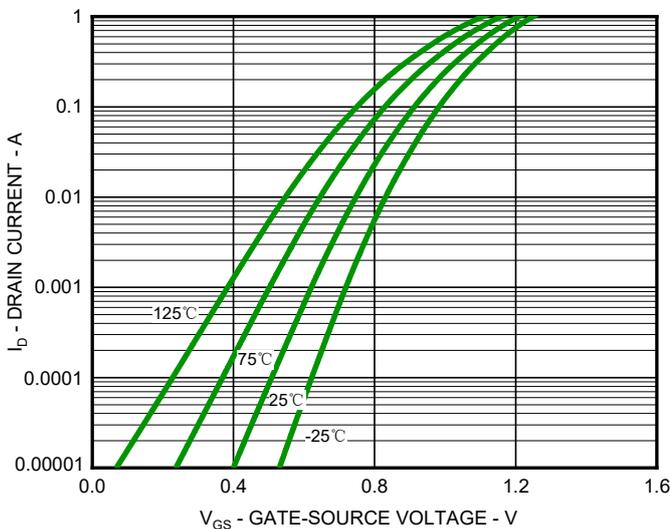


Fig.5 Typical Transfer Characteristic

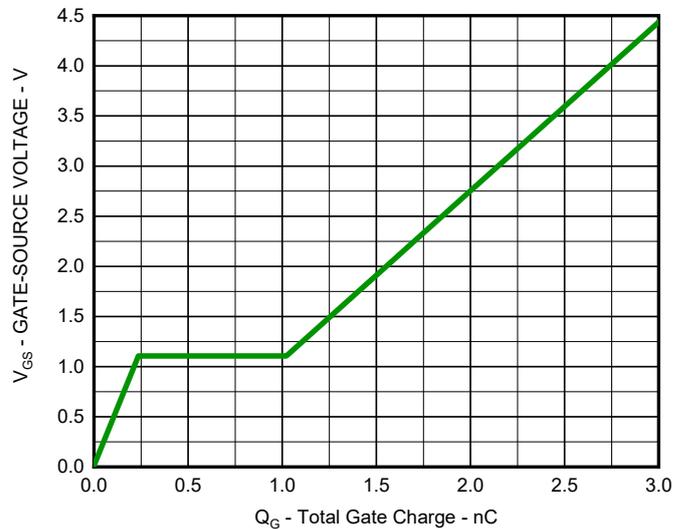


Fig.6 Gate Charge Characteristics

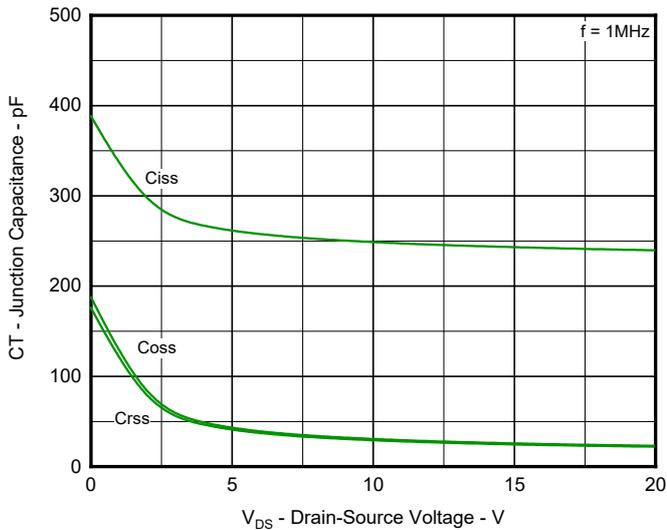


Fig.7 Typical Junction Capacitance

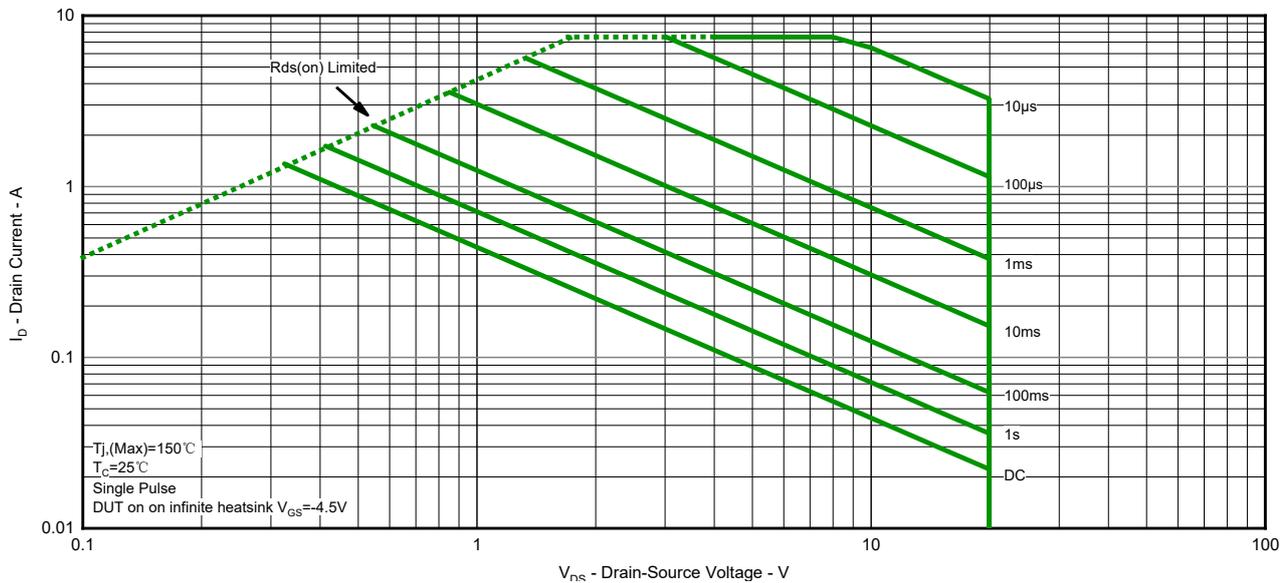


Fig.8 Safe Operation Area

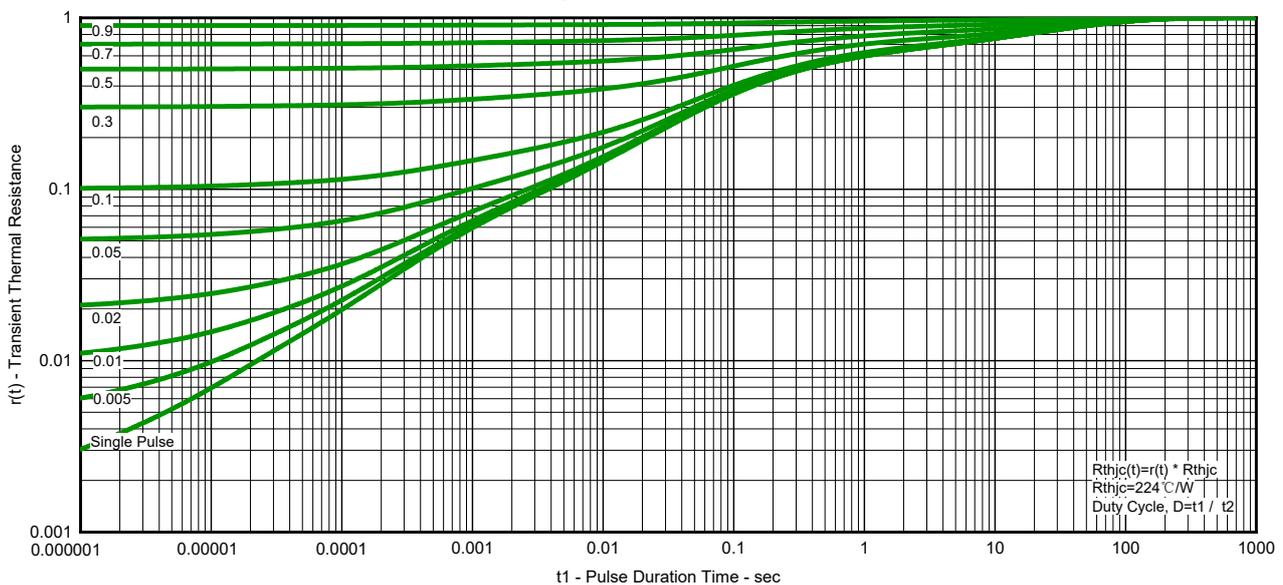
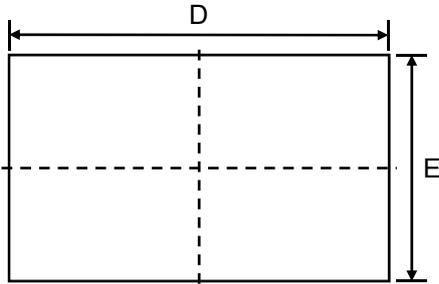
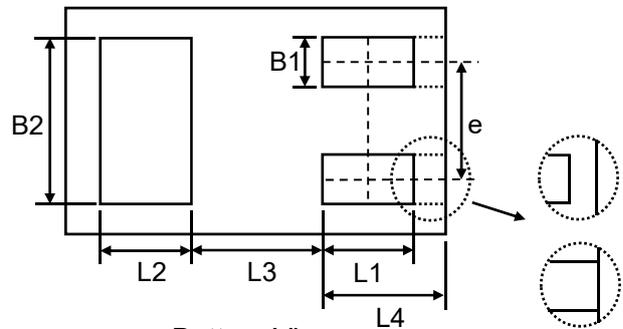


Fig.9 Transient Thermal Resistance

## Product Dimension (DFN1006-3L)



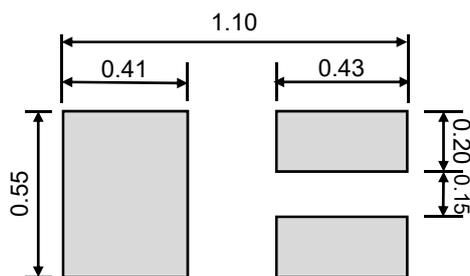
Top View



Bottom View



Side View



Suggested PCB Layout

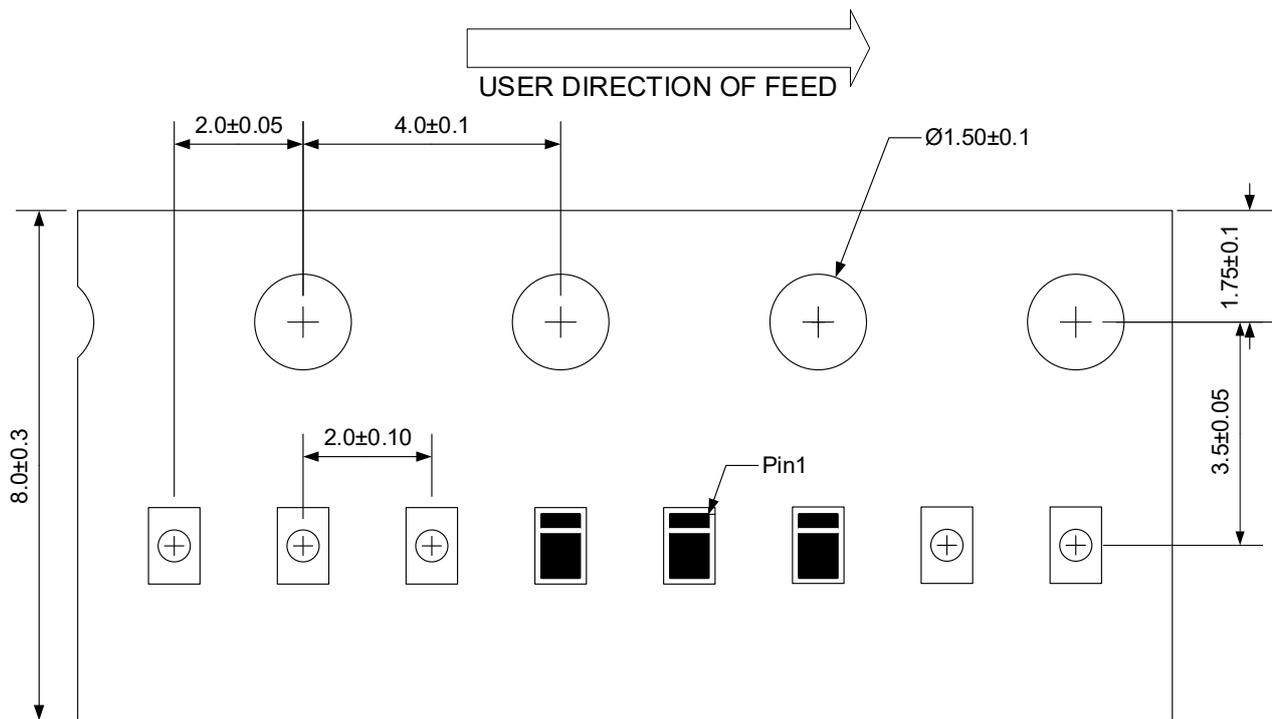
Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.33	0.498	0.013	0.020
B	0.00	0.05	0.000	0.002
B1	0.10	0.20	0.004	0.008
B2	0.45	0.55	0.018	0.022
D	0.90	1.05	0.035	0.041
E	0.50	0.65	0.020	0.026
e	0.35		0.014	
L1	0.20	0.30	0.008	0.012
L2	0.20	0.30	0.008	0.012
L3	0.39		0.015	
L4	0.25	0.35	0.010	0.014

Unit: mm

Ordering information

Device	Package	Reel	Shipping
PPM3FD20V2	DFN1006-3L(Pb-Free)	7"	10000 / Tape & Reel

Load with information



Unit:mm

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