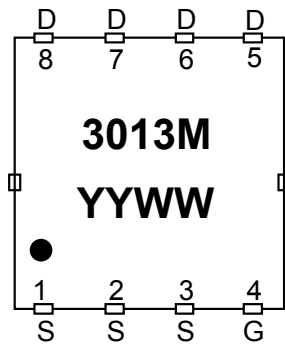
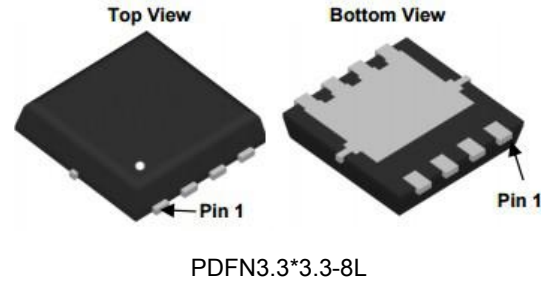


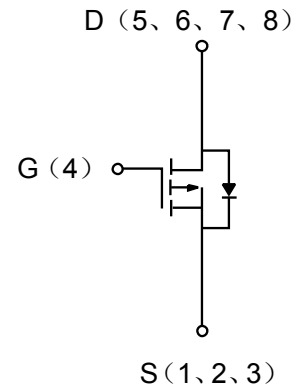
**Description**

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

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
-30	$<35@ V_{GS}=-4.5V$	-25
	$<21@ V_{GS}=-10V$	



Top View (PDFN3.3\*3.3-8L)



Internal Structure

**Absolute maximum ratings @  $T_A=25^\circ C$  (unless otherwise specified)**

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current- Continuous	$I_D$	-25	A
Drain Current- Pulsed <sup>(Note 1)</sup>	$I_{DM}$	-70	A
Drain Current-Continuous	$I_{DSM}$	-9	A
Maximum Power Dissipation	$T_A=25^\circ C$	$P_{DSM}$	3.1 W
Maximum Power Dissipation	$T_C=25^\circ C$	$P_D$	29 W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^\circ C$
<b>Thermal Characteristic</b>			
Thermal Resistance-Junction to Ambient <sup>(Note 2)</sup>	$R_{\theta JA}$	40	$^\circ C/W$
Thermal Resistance-Junction to Case, Steady State	$R_{\theta JC}$	4.2	$^\circ C/W$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On Characteristics</b> (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.6	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-7A$	-	17.5	21	m $\Omega$
		$V_{GS}=-4.5V, I_D=-6A$	-	26	35	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=-10V, I_D=-10A$	20	-	-	S
<b>Dynamic Characteristics</b> (Note 4)						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V,$ $F=1.0MHz$	-	1040	-	PF
Output Capacitance	$C_{oss}$		-	180	-	PF
Reverse Transfer Capacitance	$C_{rss}$		-	125	-	PF
<b>Switching Characteristics</b> (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-10A,$ $V_{GS}=-10V, R_{GEN}=1\Omega$	-	10	-	nS
Turn-on Rise Time	$t_r$		-	5.5	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	26	-	nS
Turn-Off Fall Time	$t_f$		-	9	-	nS
Total Gate Charge	$Q_g$	$V_{DS}=-15V, I_D=-10A,$ $V_{GS}=-10V$	-	19	-	nC
Gate-Source Charge	$Q_{gs}$		-	3.6	-	nC
Gate-Drain Charge	$Q_{gd}$		-	4.6	-	nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage (Note 3)	$V_{SD}$	$V_{GS}=0V, I_S=-2A$	-0.4	-	-1.0	V

## Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.Surface Mounted on FR4 Board,  $t \leq 10$  sec.
- 3.Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
- 4.Guaranteed by design, not subject to production

Typical Characteristics

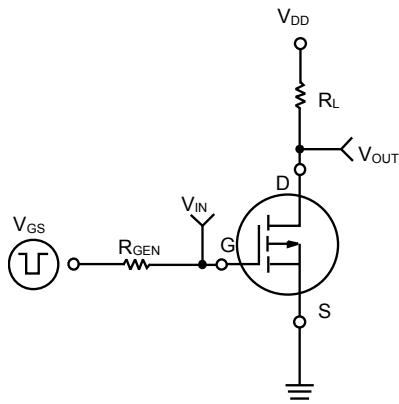


Figure 1. Switching Test Circuit

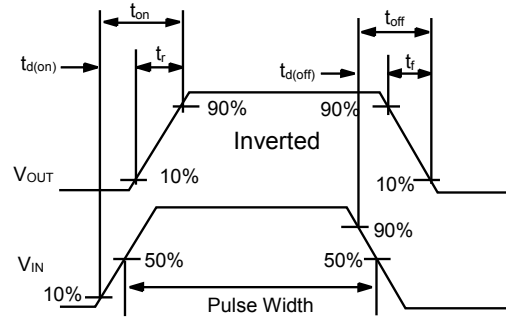
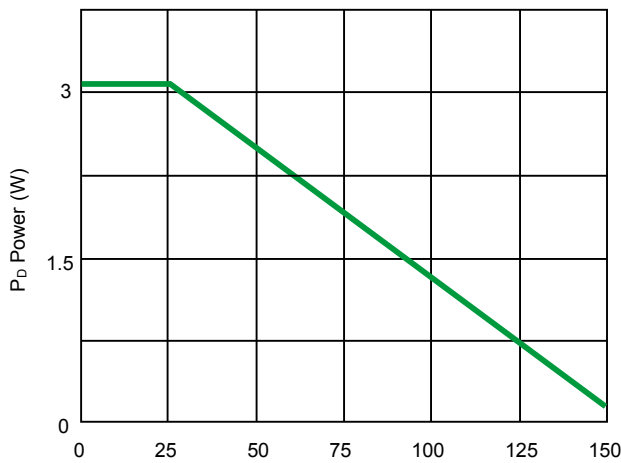
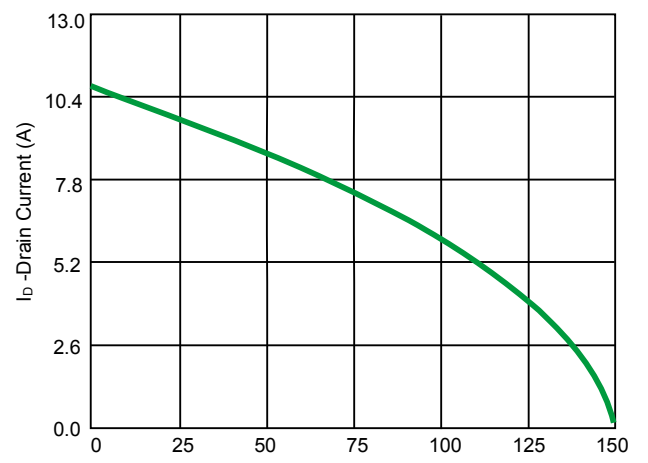


Figure 2. Switching Waveforms



T<sub>J</sub> - Junction Temperature (°C)  
Fig 3. Power Dissipation



T<sub>J</sub> - Junction Temperature (°C)  
Fig 4. Drain Current

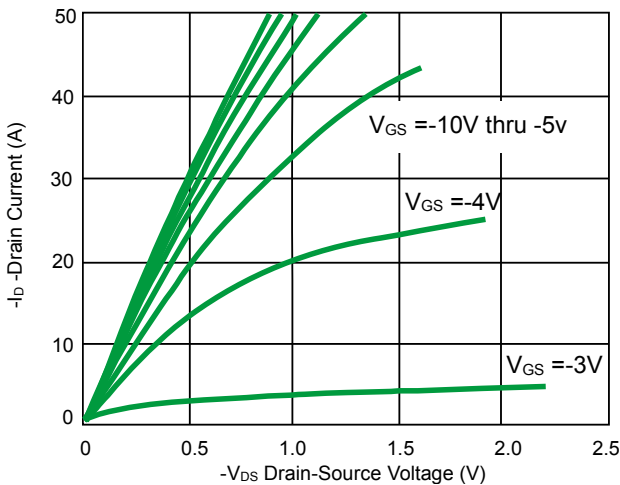


Fig 5. Output Characteristics

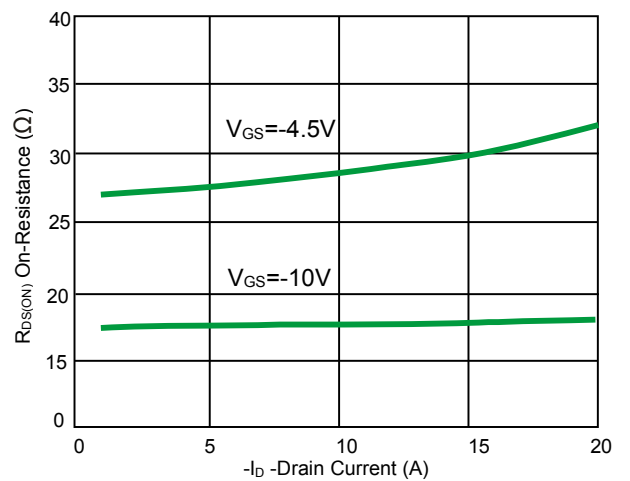


Fig 6. Drain-Source On-Resistance

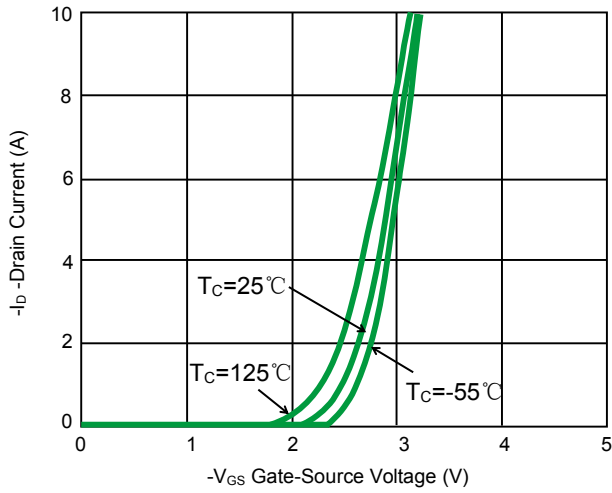


Fig 7. Transfer Characteristics

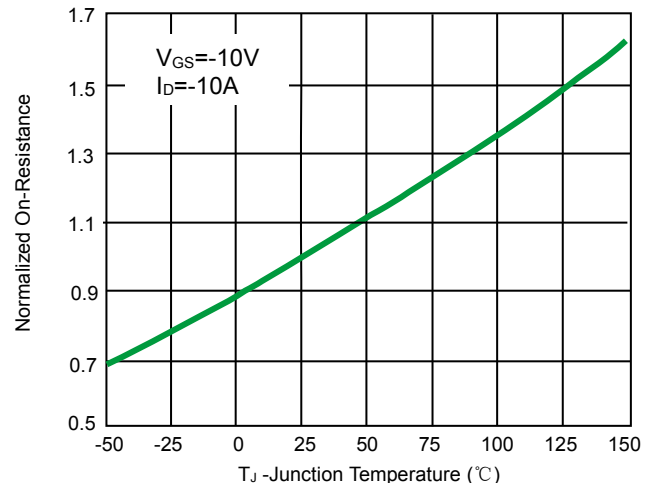


Fig 8. Drain-Source On-Resistance

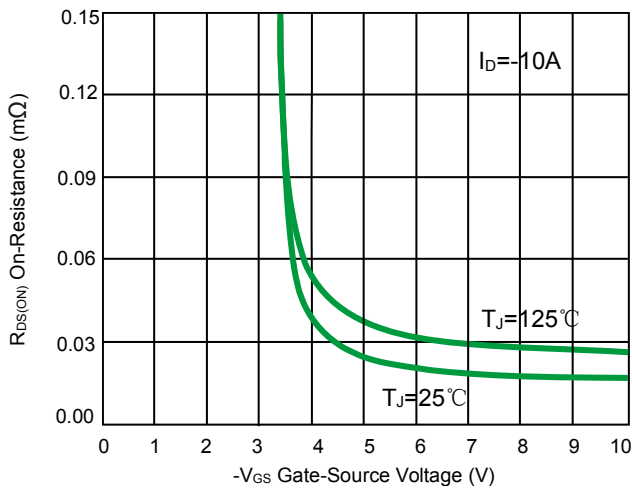


Fig 9.  $R_{DS(ON)}$  vs.  $V_{GS}$

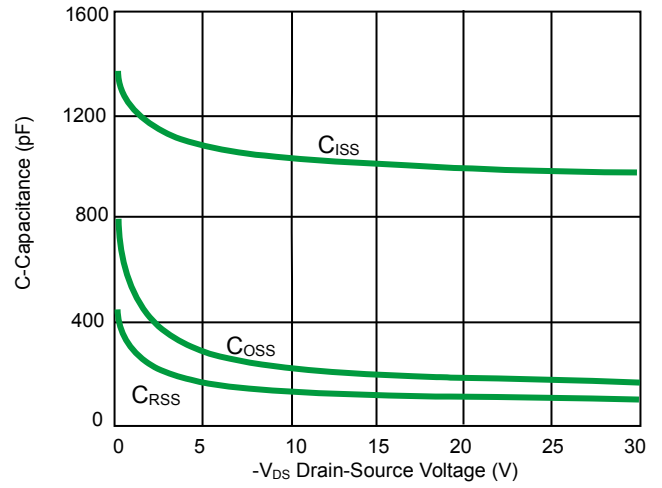


Fig 10. Capacitance vs.  $V_{DS}$

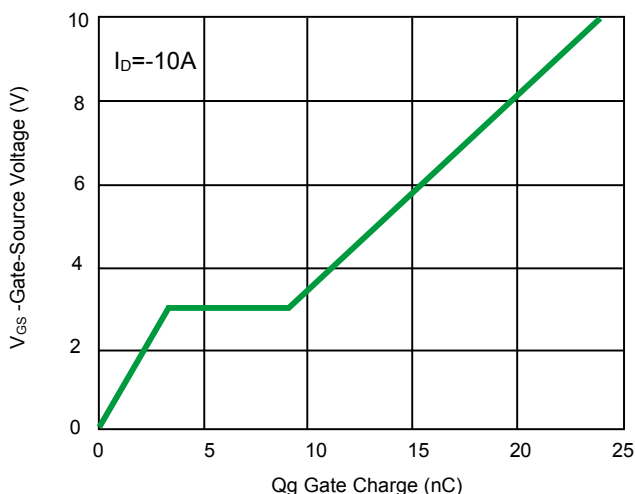


Fig 11. Gate Charge

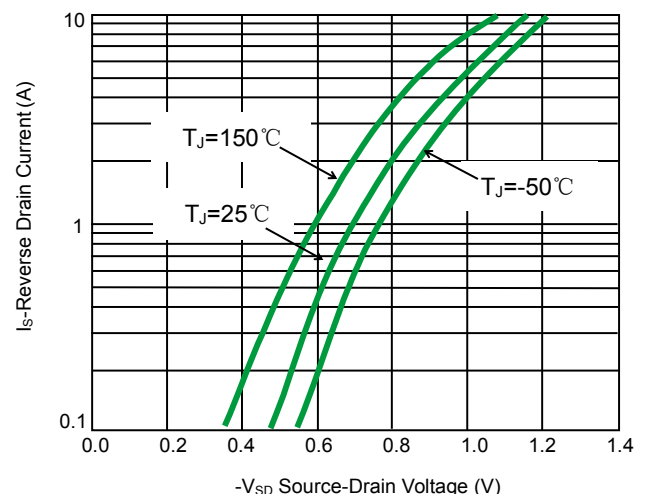


Fig 12. Source-Drain Diode Forward

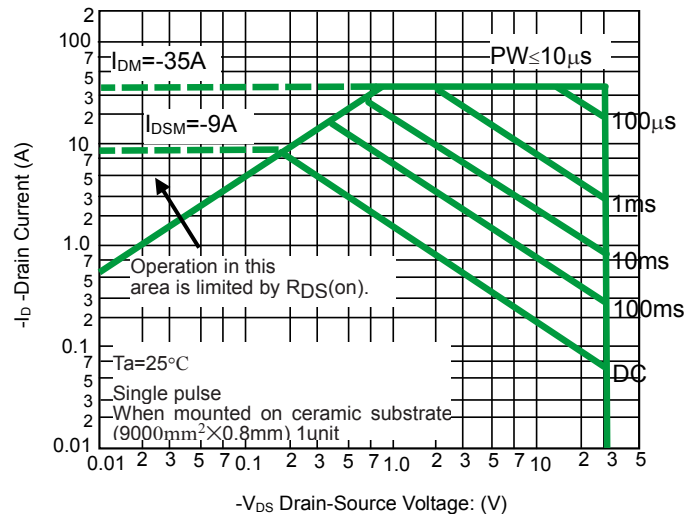


Figure 13. Safe Operation Area

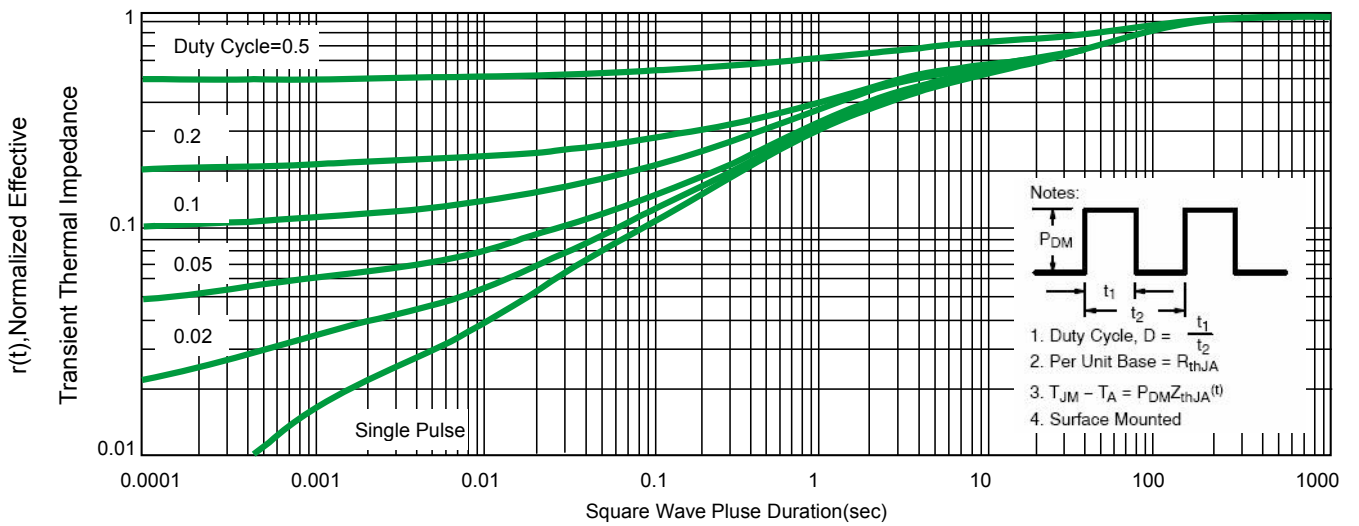
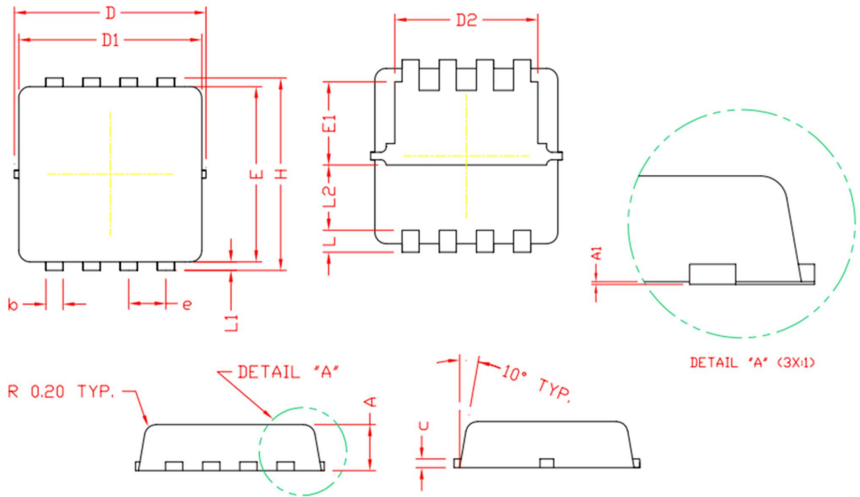


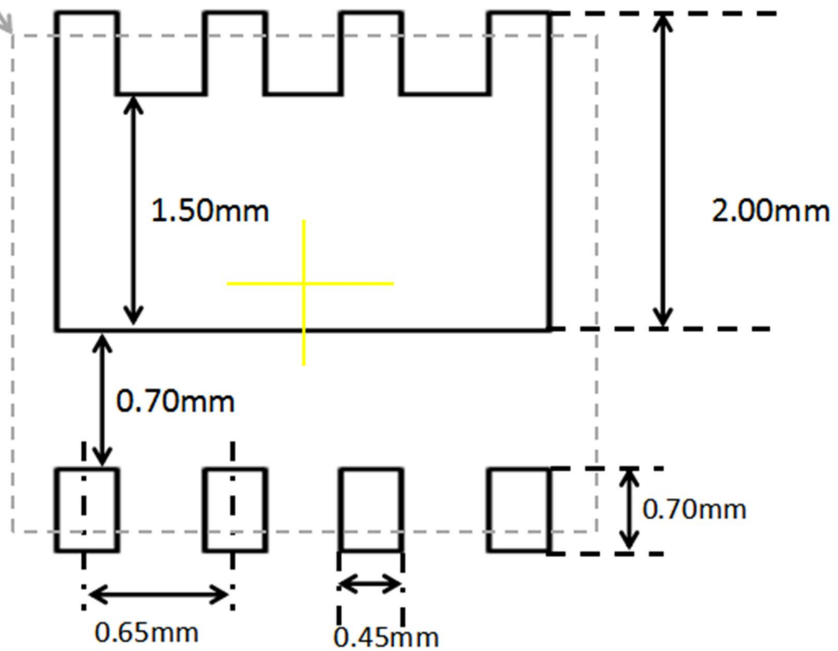
Figure 14. Normalized Maximum Transient Thermal Impedance

Product dimension (PDFN3.3\*3.3-8L)



SYMBOL	MIN	NOM	MAX
A	0.70	0.80	0.90
A1	0.00	0.03	0.05
b	0.24	0.30	0.35
c	0.10	0.15	0.20
D	3.25	3.32	3.40
D1	3.05	3.15	3.25
D2	2.40	2.50	2.60
E	3.00	3.10	3.20
E1	1.35	1.45	1.55
e	0.65 BSC.		
H	3.20	3.30	3.40
L	0.30	0.40	0.50
L1	0.10	0.15	0.20
L2	1.13 REF.		

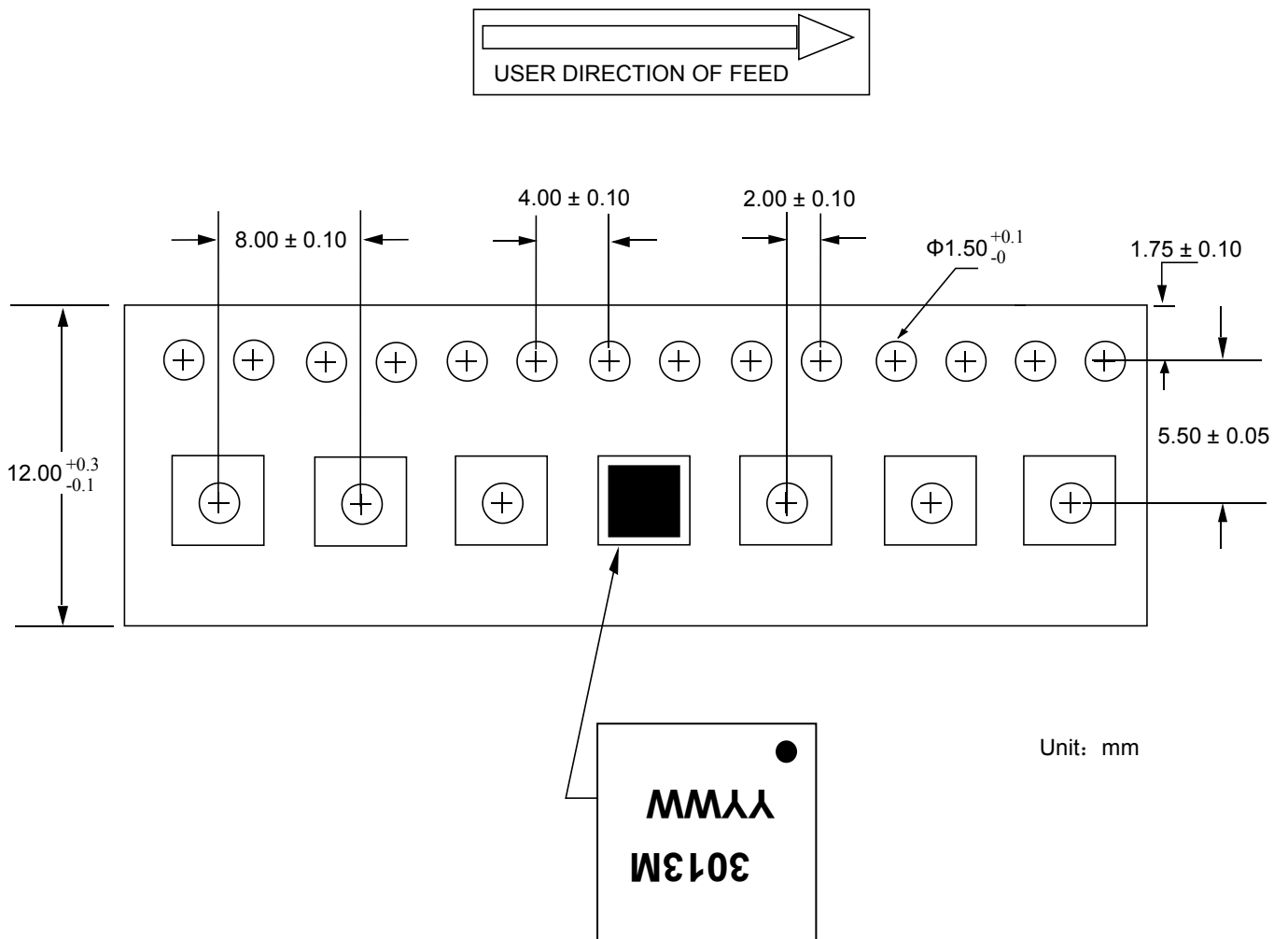
Package Size




Ordering information

Device	Package	Reel	Shipping
PPM8PN30V25	PDFN3.3*3.3-8L (Pb-Free)	13"	5000 / Tape & Reel

Load with information



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