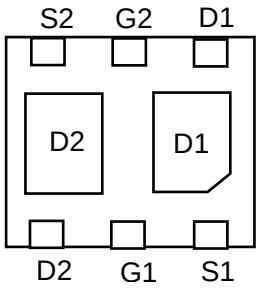
Dual N-Channel MOSFET

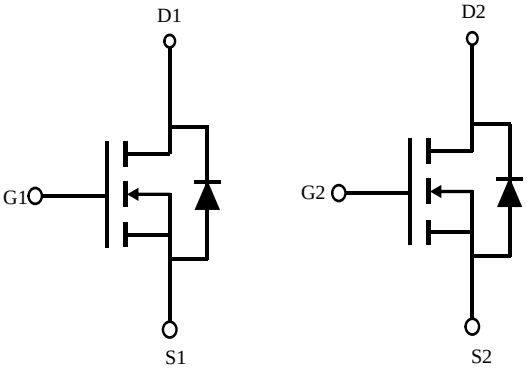
Description

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

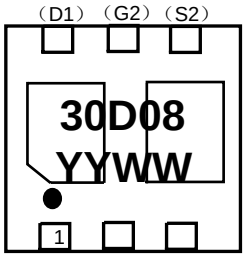
MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
30	20@ V_{GS}=10V	7.6
	32@ V_{GS}=4.5V	



Bottom View(DFN2*2-6L)



Internal Structure



YY =Year Code

WW =Week Code

Marking (Top View)

Absolute maximum rating@25℃

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	7.6	A
Drain Current-Pulsed (Note1)	I_{DM}	30	A
Maximum Power Dissipation	P_D	1.8	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	℃

Thermal Characteristic

Parameter	Typical	Maximum	Units
Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	70	℃/W

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =250μA,V_{GS}=0V	30	33	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V,V_{GS}=±20V	-	-	±100	nA
Gate Threshold Voltage (Note3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2	1.6	2.4	V
Drain-Source On-State Resistance (Note3)	$R_{DS(ON)}$	V_{GS}=10V, I_D =6A		17	20	mΩ
		V_{GS}=4.5V, I_D =5A		22	32	mΩ
Forward Transconductance (Note3)	G_{FS}	V_{DS}=5V, I_D =5A		15		S
Input Capacitance (Note4)	C_{ISS}	V_{GS}=0V, V_{DS} =15V, f=1MHz	-	255		pF
Output Capacitance (Note4)	C_{OSS}		-	45		pF
Reverse Transfer Capacitance (Note4)	C_{RSS}		-	35		pF
Turn-On Delay Time (Note4)	$t_{d(on)}$	V_{DD} =15V, R_L=3Ω, V_{GS}=10V,R_{GEN}=3Ω	-	4.5		nS
Turn-On Rise Time (Note4)	t_r		-	2.5		nS
Turn-Off Delay Time (Note4)	$t_{d(off)}$		-	14.5		nS
Turn-Off Fall Time (Note4)	t_f		-	3.5		nS
Total Gate Charge (Note4)	Q_g	V_{DS} =15V, I_D =5A, V_{GS}=10V		5.2		nC
Gate-Source Charge (Note4)	Q_{gs}			0.85		nC
Gate-Drain Charge (Note4)	Q_{gd}			1.3		nC
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=5A			1.2	V
Diode Forward Current (Note 2)	I_S				5	A

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

Note 2: Surface Mounted on FR4 Board,t≤ 10 sec.

Note 3: Pulse Test: Pulse Width ≤300us, Duty Cycle ≤2% .

Note 4: Guaranteed by design, not subject to production

Typical Characteristics

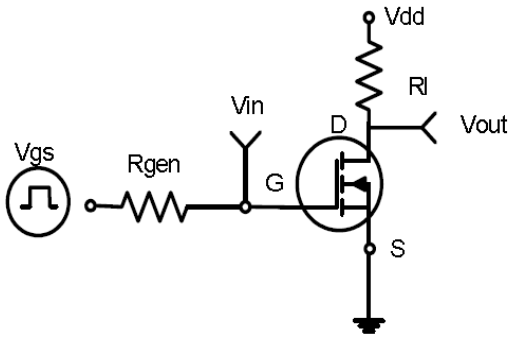


Fig 1. Switching Test Circuit

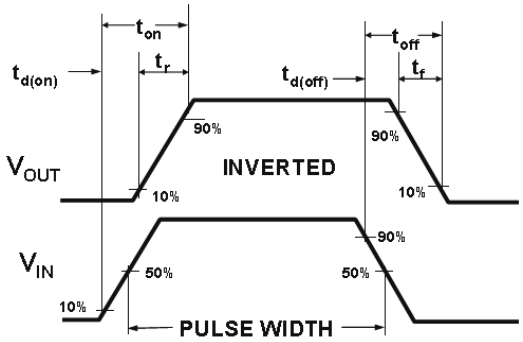


Fig 2. Switching Waveforms

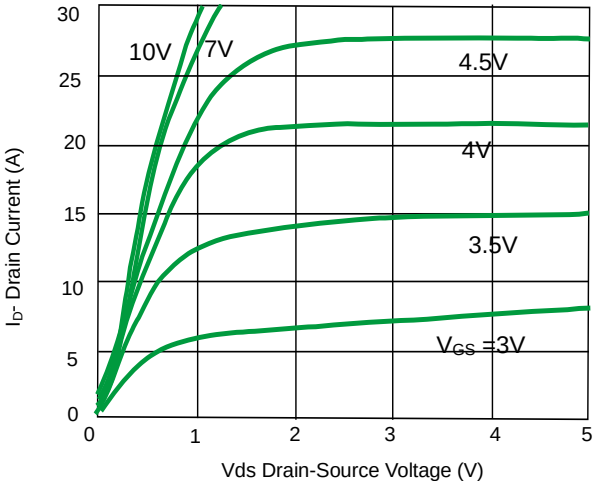


Fig 3. Output Characteristics

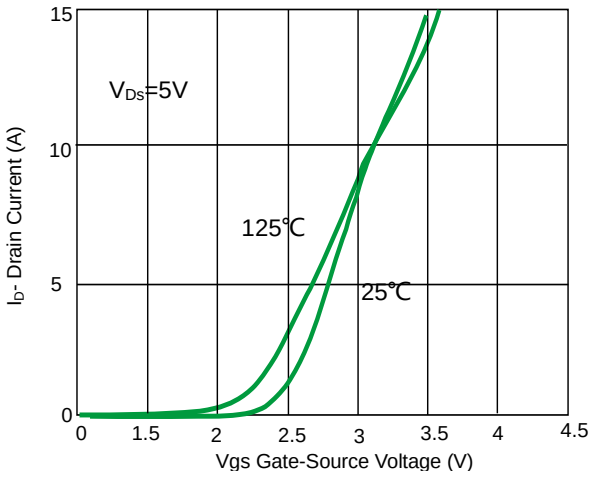


Fig 4. Transfer Characteristics

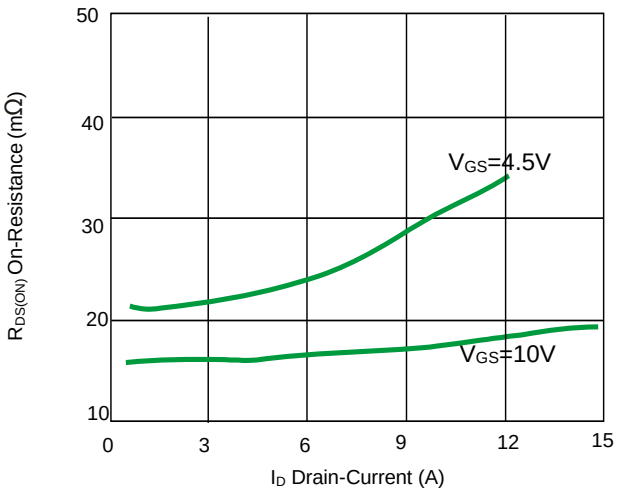


Fig 5. Drain-Source On-Resistance

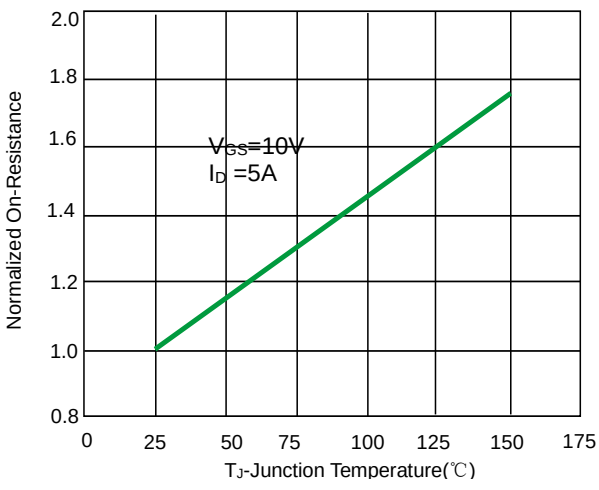


Fig 6. Drain-Source On-Resistance

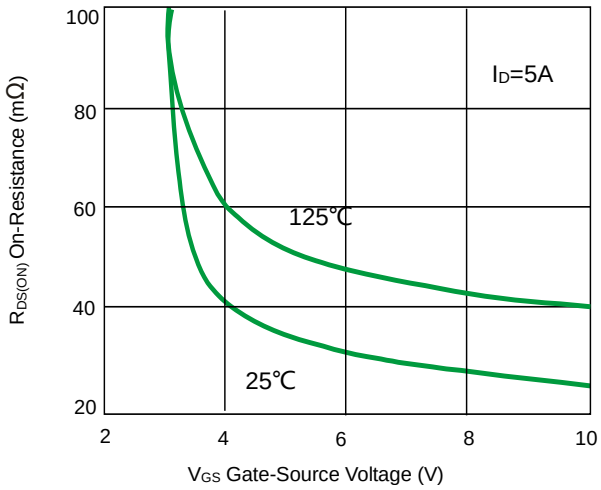


Fig 7. Rdson vs Vgs

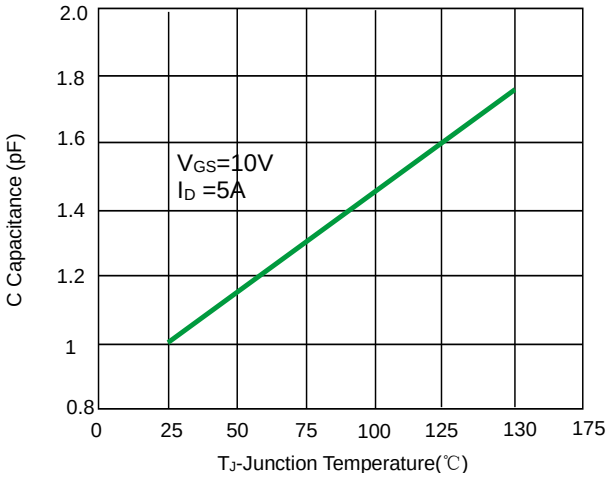


Fig 8. Drain-Source On-Resistance

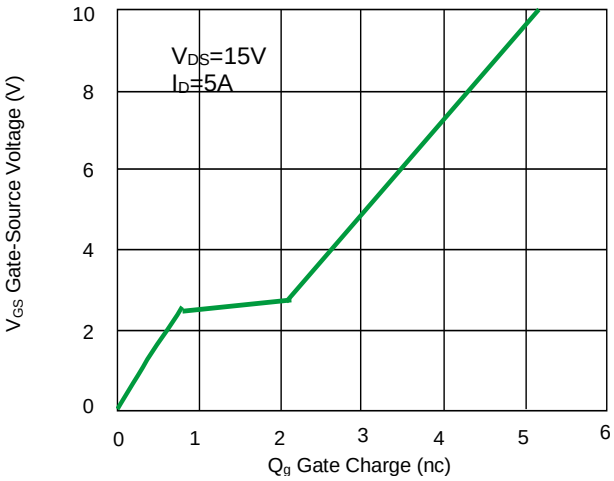


Fig 9. Gate Charge

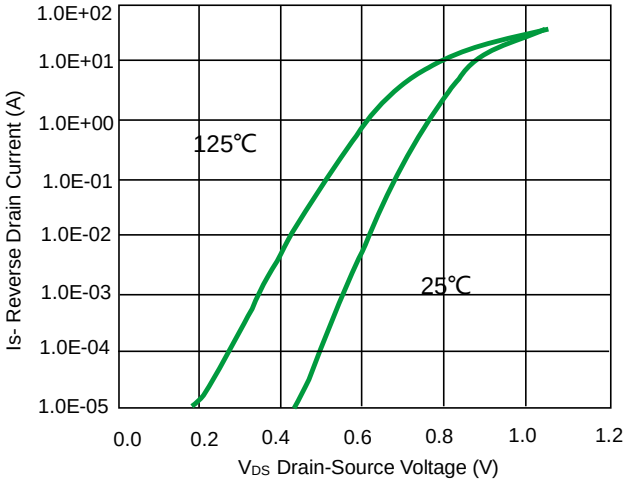


Fig 10. Source-Drain Diode Forward

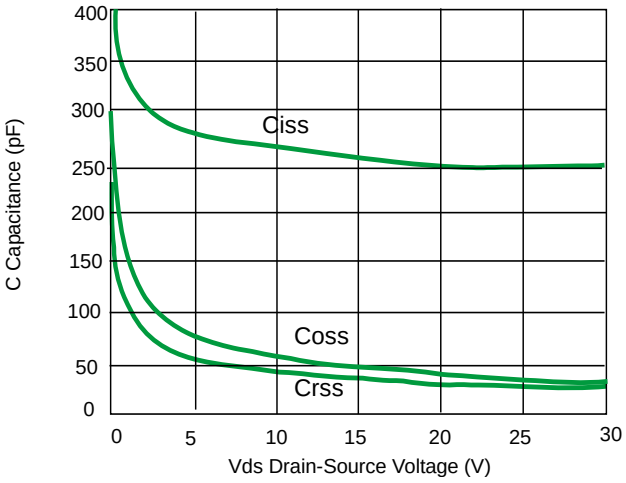


Fig 11. Capacitance vs Vds

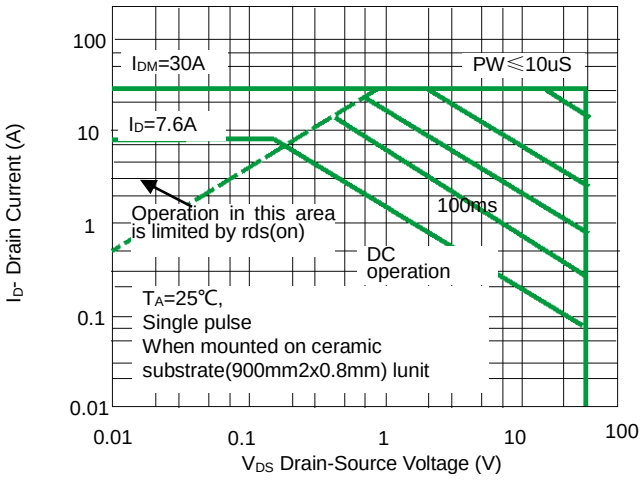


Fig 12. Safe Operation Area

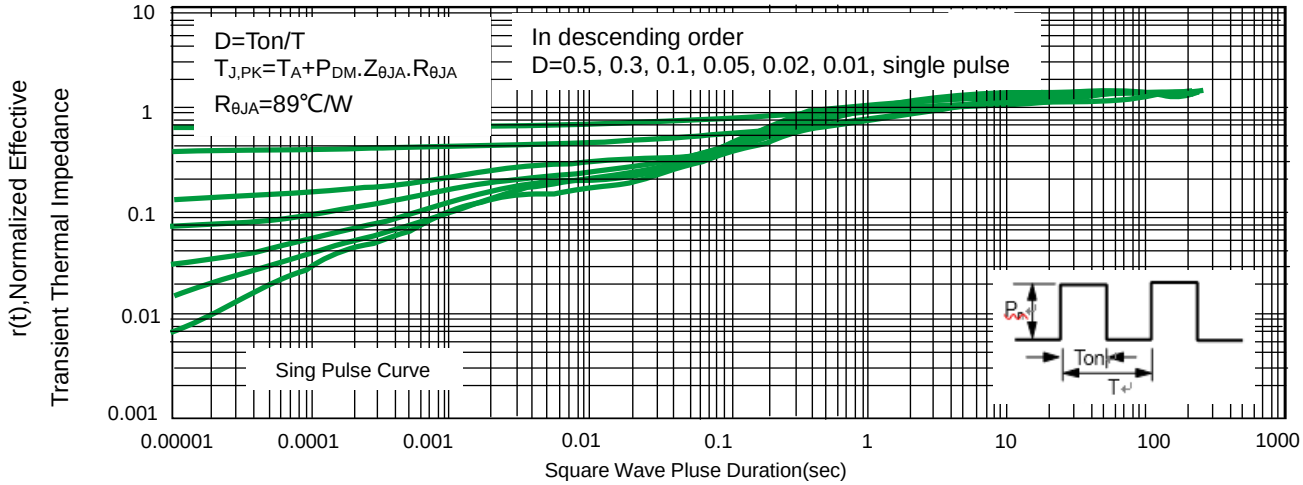
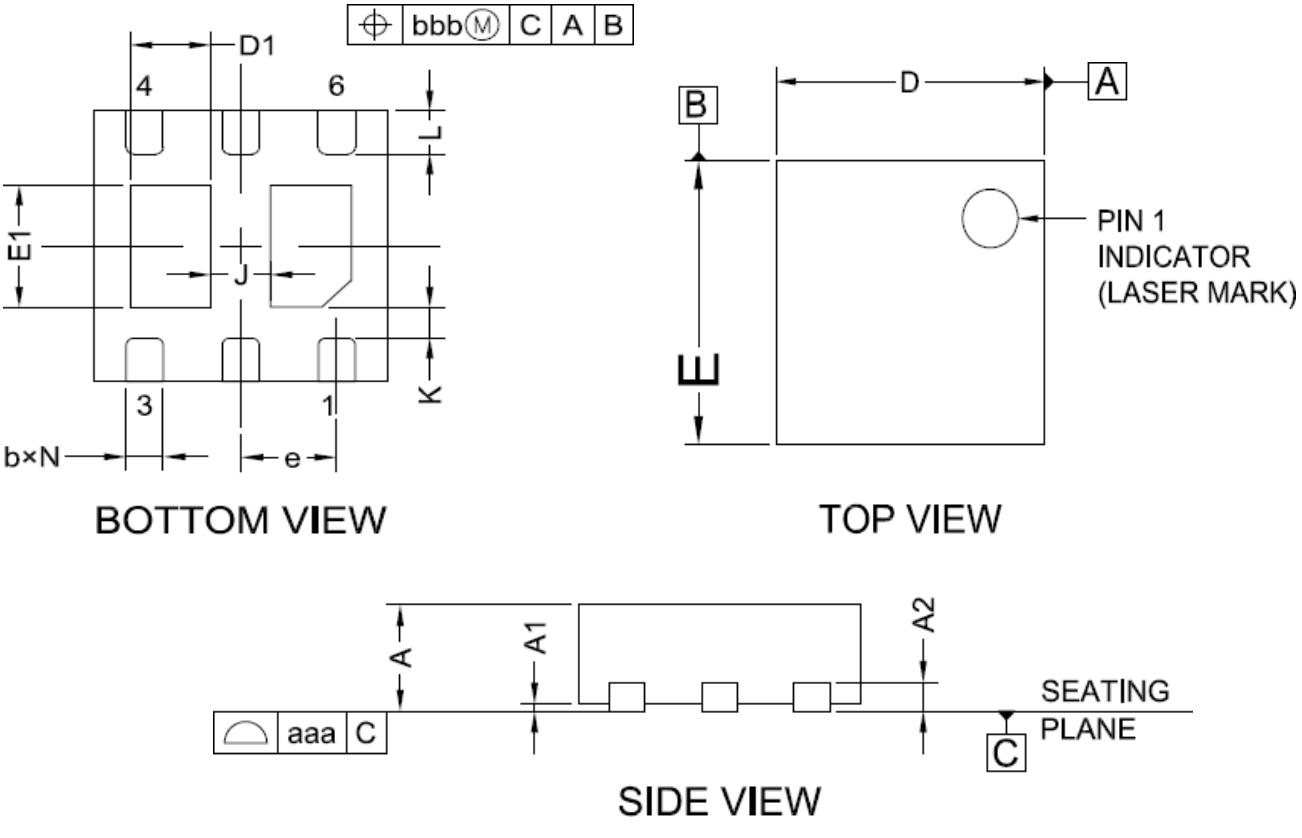
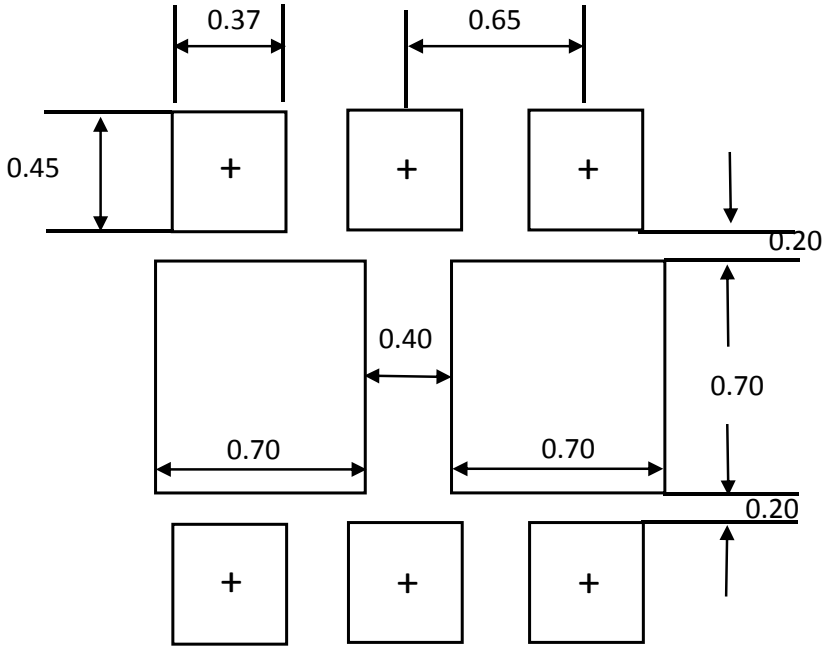


Fig 13. Normalized Maximum Transient Thermal Impedance

Product dimension(DFN2*2-6L)



Dim	Millimeters		
	MIN	TYP	MAX
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
A2		0.203	
b	0.225	0.275	0.325
D	1.95	2.00	2.05
D1	0.50	0.55	0.60
E	1.95	2.00	2.05
E1	0.85	0.90	0.95
e		0.65BSC	
L	0.27	0.32	0.37
J	0.40BSC		
K	0.20MIN		
N	6		
aaa	0.08		
bbb	0.10		

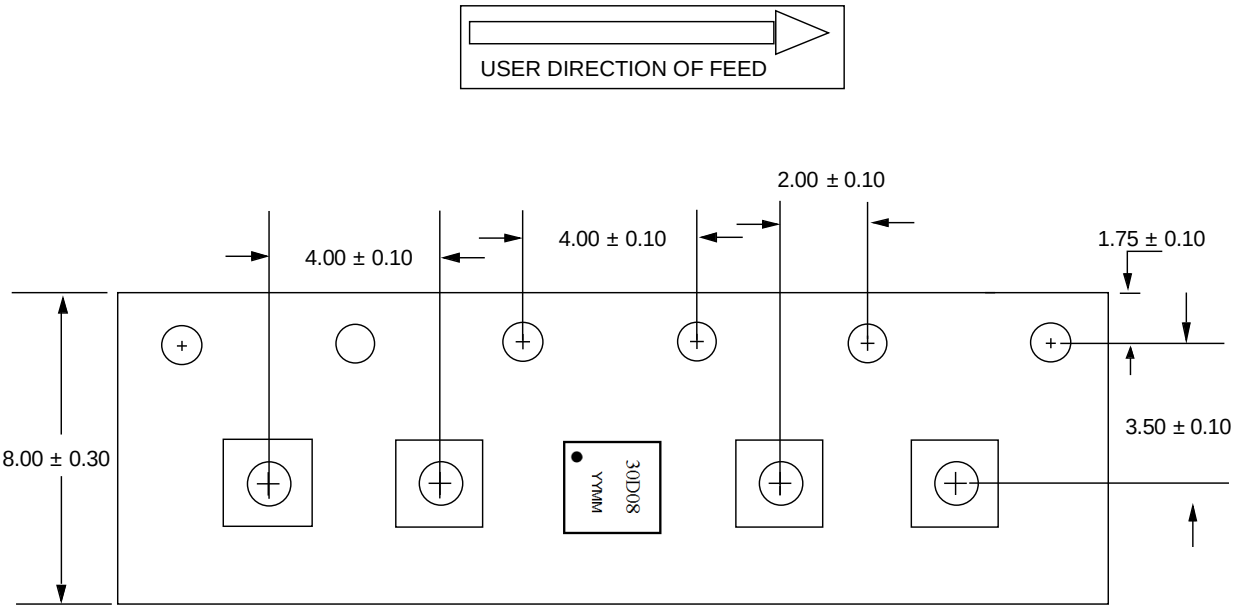


Suggested PCB Layout

Ordering information

Device	Package	Shipping
PDNM6N30V7	DFN2*2-6L (Pb-Free)	3000 / Tape & Reel

Load with information



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