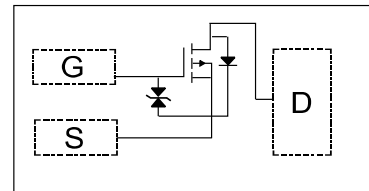


**Description**

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

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(\Omega)$	$I_D(mA)$
-20	0.75@ $V_{GS}=-4.5V$	-300
	0.9@ $V_{GS}=-2.5V$	
	1.5@ $V_{GS}=-1.8V$	


**Absolute maximum rating@25°C**

Parameter		Symbol	Value	Units
Drain-Source Voltage		$V_{DS}$	-20	V
Gate-Source Voltage		$V_{GS}$	$\pm 10$	V
Continuous Drain Current	Continuous	$I_D$	-300	mA
	Pulsed	$I_{DP}$	-800	
Source current(Body diode)	Continuous	$I_S$	-100	mA
	Pulsed	$I_{SP}$	-800	
Total power dissipation		$P_D$	150	mW
Channel temperature		$T_J$	150	°C
Range of storage temperature		$T_{STG}$	-55 to +150	°C

**Thermal resistance**

Parameter	Symbol	Limits	Units
Channel to ambient	$R_{th}(ch-a)$	833	°C/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D = -1mA, V_{GS} = 0V$	-20		-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$	-	-	-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$	-	-	$\pm 10$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = -10V, I_D = -100\mu A$	-0.5	-	-1.1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -300mA$	-	0.75	1.0	$\Omega$
		$V_{GS} = -2.5V, I_D = -200mA$	-	0.9	1.5	$\Omega$
		$V_{GS} = -1.8V, I_D = -100mA$		1.5	2.2	$\Omega$
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = -10V, I_D = -200mA$	0.3			s
Input Capacitance	$C_{ISS}$	$V_{GS} = 0V, V_{DS} = -10V,$ $f = 1MHz$	-	110		pF
Output Capacitance	$C_{OSS}$		-	9		pF
Reverse Transfer Capacitance	$C_{RSS}$		-	5		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V,$ $R_G = 10\Omega, R_L = 100\Omega$ $I_D = -100mA$	-	5		ns
Turn-Off Delay Time	$t_{d(off)}$		-	15		ns
Turn-On Rise Time	$t_r$		-	4		ns
Turn-On Fall Time	$t_f$		-	13		ns
Total Gate Charge	$Q_g$	$V_{DD} = -10V, V_{GS} = -4.5V,$ $I_D = -200mA$ $R_G = 10\Omega, R_L = 50\Omega$		1.4		nC
Gate-Source Charge	$Q_{gs}$			0.3		nC
Gate-Drain Charge	$Q_{gd}$			0.3		nC
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = -200mA$		-	-1.2	V

Typical Characteristics

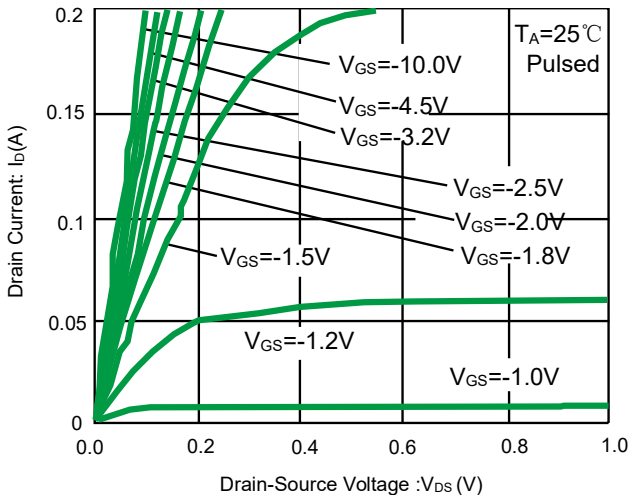


Fig 1. Typical output characteristics ( I )

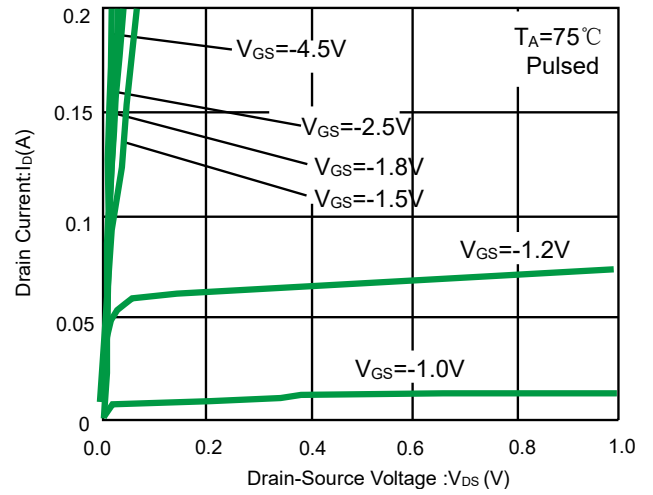


Fig 2. Typical output characteristics ( II )

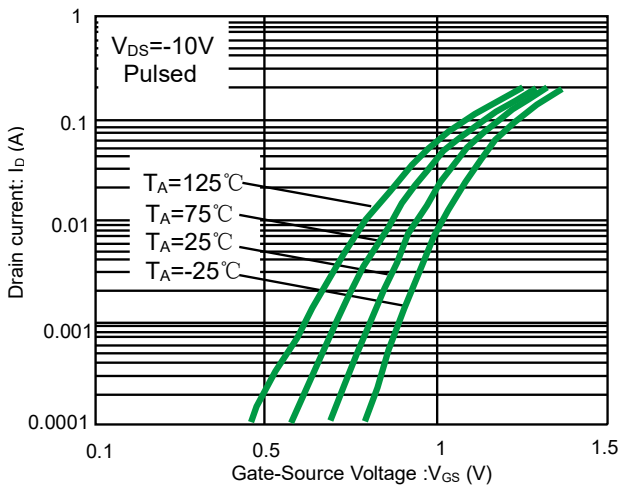


Fig 3. Typical transfer characteristics

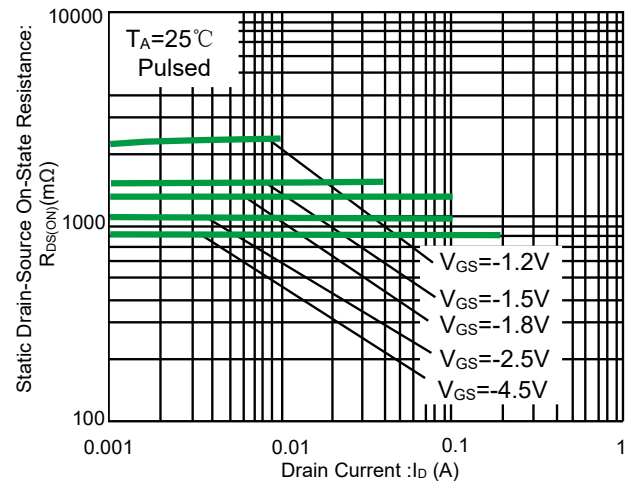


Fig 4. Static drain-source on-state resistance vs. drain current ( I )

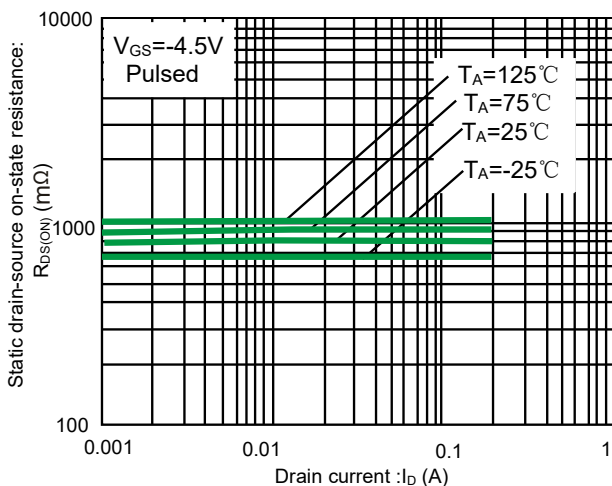


Fig 5. Static drain-source on-state resistance vs. drain current ( II )

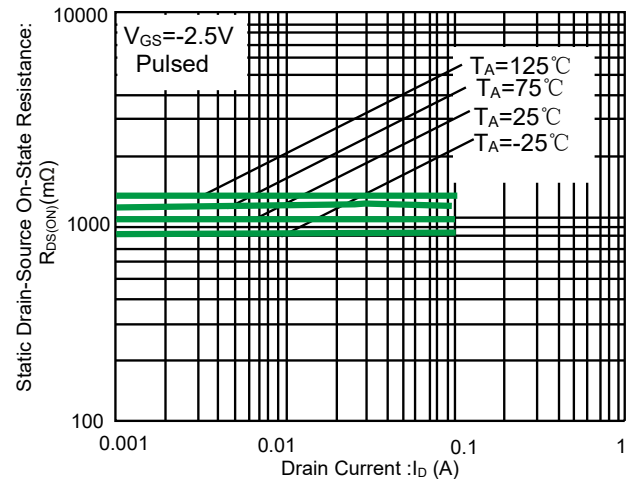


Fig 6. Static drain-source on-state resistance vs. drain current ( III )

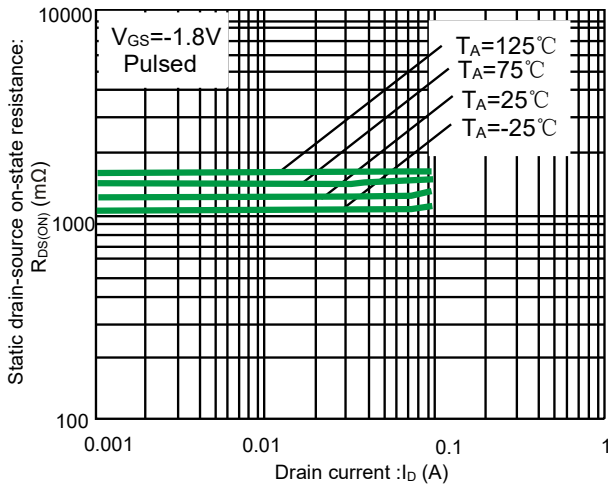


Fig 7. Static drain-source on-state resistance vs. drain current(IV)

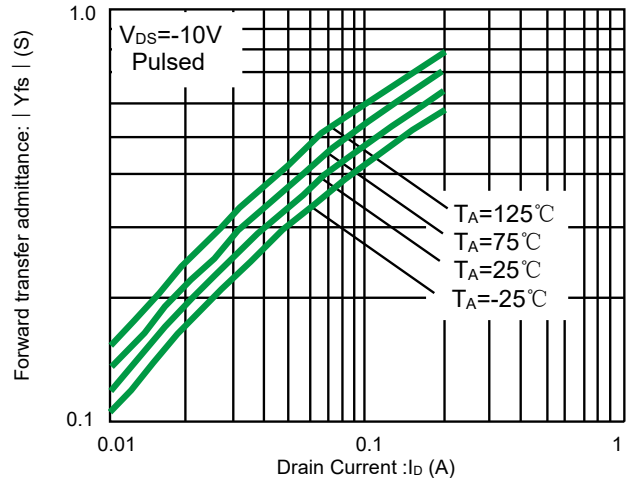


Fig 8. Forward transfer admittance vs. drain current

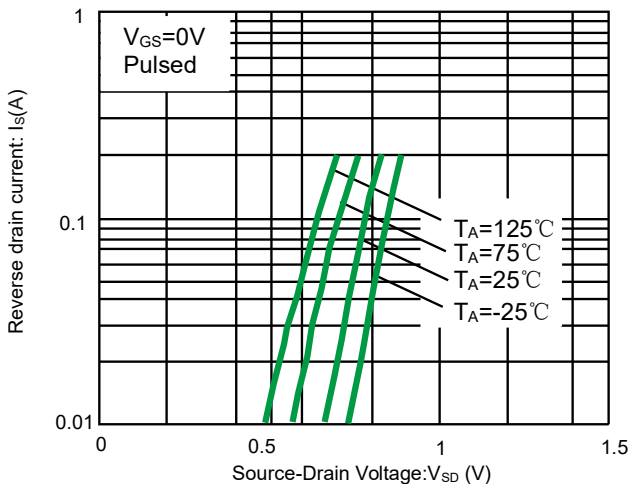


Fig 9. Reverse drain current vs. source-drain voltage

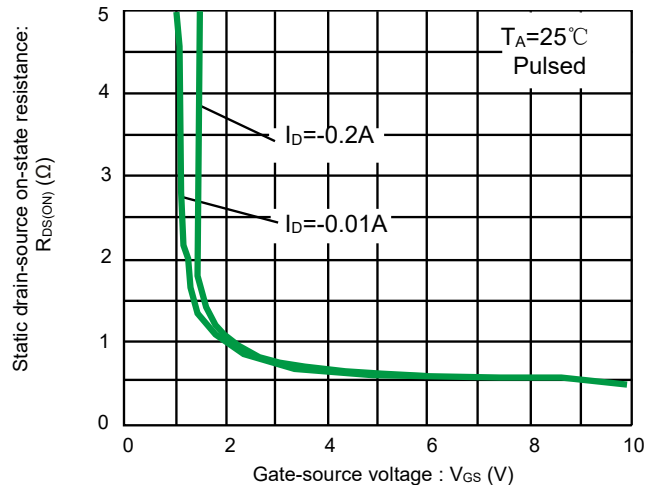


Fig 10. Static drain-source on-state resistance vs. gate source voltage

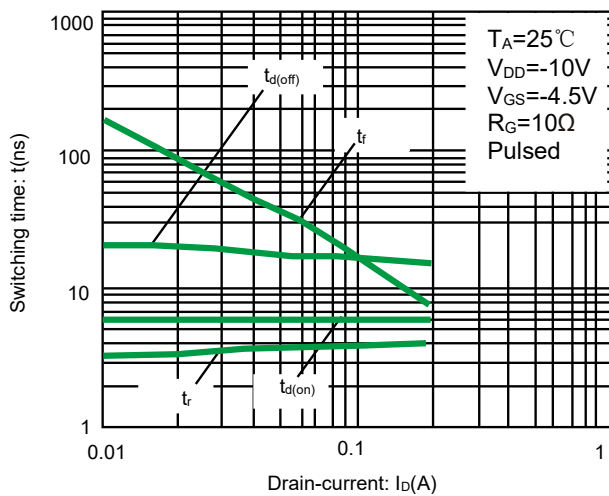


Fig 11. Switching characteristics

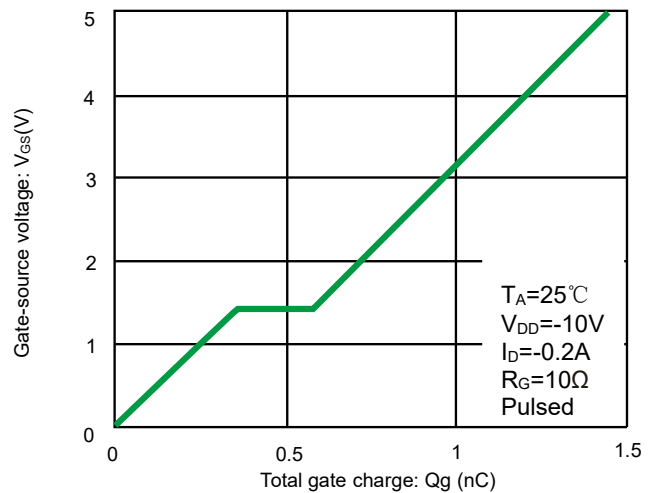


Fig 12. Dynamic input characteristics

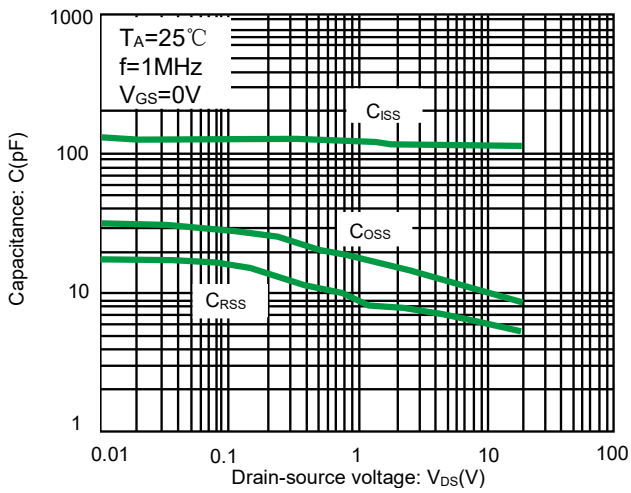


Fig 13. Typical capacitance vs. drain-source voltage

Measurement circuit

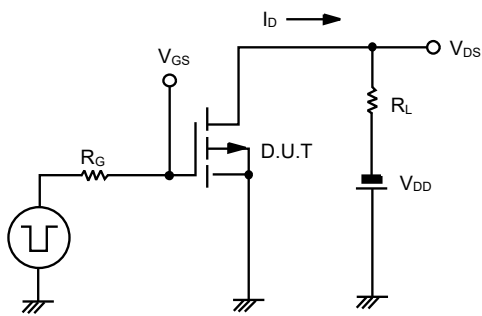


Fig.1-1 Switching time measurement circuit

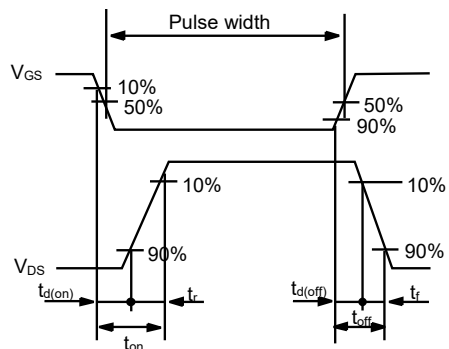


Fig.1-2 Switching time waveforms

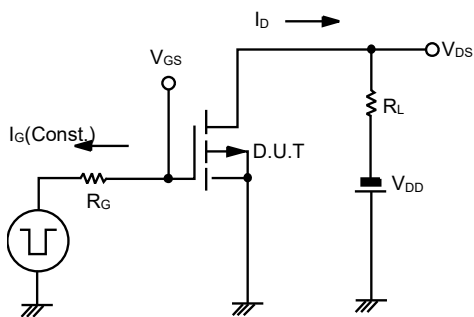


Fig.2-1 Gate charge measurement circuit

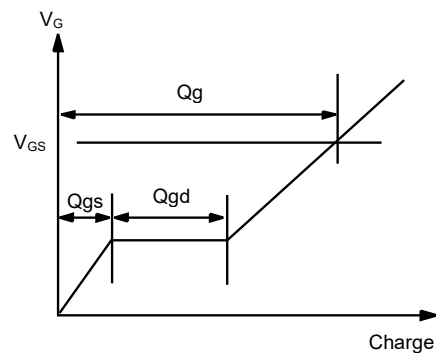
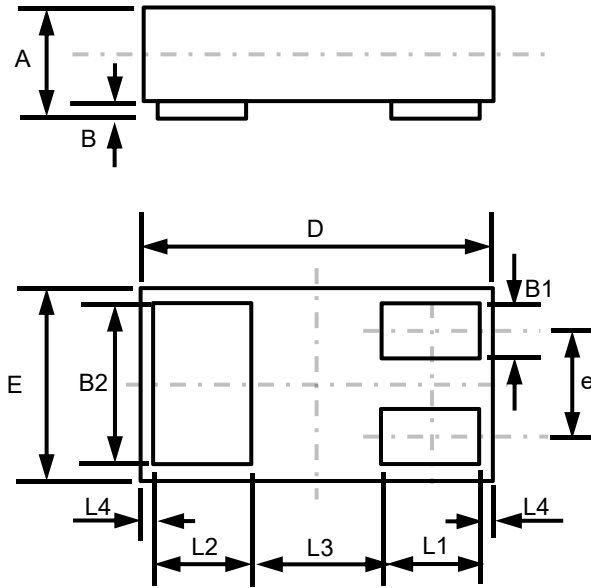
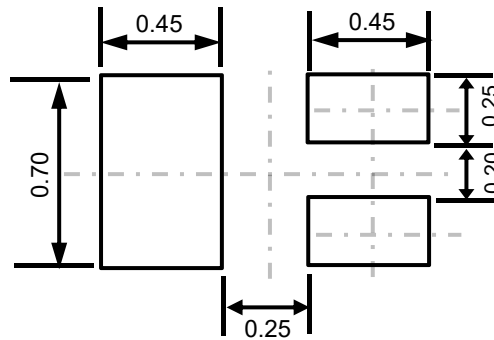


Fig.2-2 Gate charge waveform

Product dimension (DFN1006-3L)



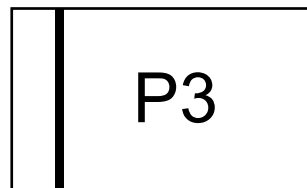
Dim	Millimeters		
	MIN	Typ	MAX
A	0.33	0.47	0.50
B	0.00	0.03	0.05
B1	0.10	0.15	0.20
B2	0.45	0.50	0.55
D	0.85	1.00	1.15
E	0.45	0.60	0.75
e	--	0.35	--
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
L3	--	0.39	--
L4	--	0.05	--



Suggested PCB Layout

Unit:mm

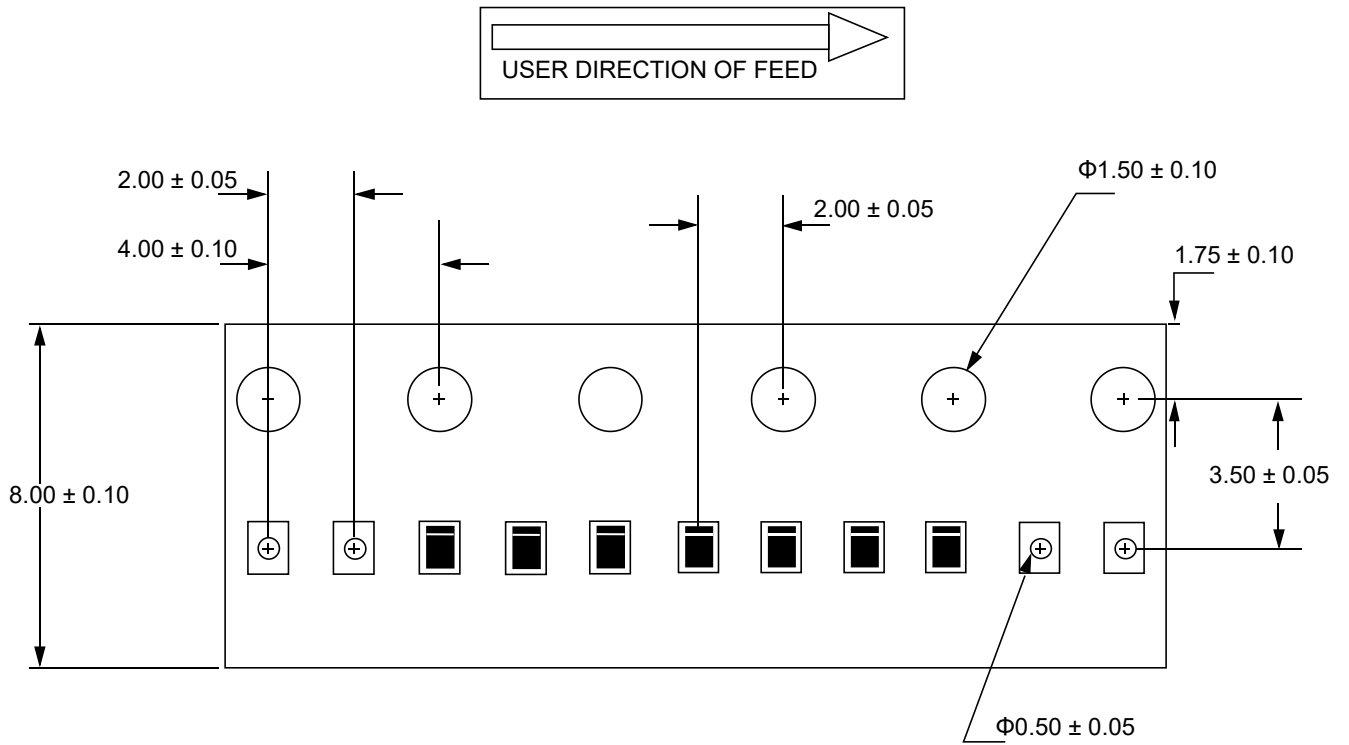
Marking information




Ordering information

Device	Package	Reel	Shipping
PPM3FD201E0	DFN1006-3L(Pb-Free)	7"	10000 / Tape & Reel

Load with information




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