WL2815

Low power consumption, CMOS LDO

Http://www.ovt.com

Descriptions

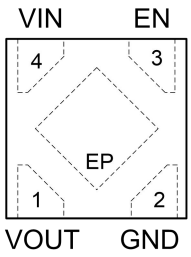
The WL2815 series are low dropout linear regulators and optimized to provide a high performance solution for battery power system to deliver low quiescent current. The devices offer a new level of cost effective performance in cellular phones, laptop and notebook computers, and other portable devices.

The WL2815 series are designed to make use of low cost ceramic capacitors which ensure the stability of the output current, and enhance the efficiency in order to prolong the battery life of those portable devices.

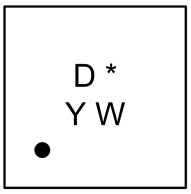
The WL2815 regulators are available in DFN1x1-4L packages. Standard products are Pb-free and Halogen free products.



DFN1X1-4L



Pin Configuration (Top View)



A: Device Code
*** : Voltage Code**
Y : Year Code
W: Week Code

Features

- Quiescent current : 1.5μA Typ.
- Input voltage : 2.1V ~ 5.5V
- Output voltage : 1.1V ~ 3.3V
- Output current : 300mA @ V_{OUT}=3.3V
- Output current : 200mA @ V_{OUT}=2.0V
- Output current : 150mA @ V_{OUT}=1.5V
- Dropout voltage : 100mV @ 100mA
- Recommend capacitor : 1uF or more
- Operating Temperature : -40 ~ +85 °C
- Output short protection

Applications

- MP3/MP4 Players
- Cell phones
- Bluetooth earphone
- Wireless mouse
- Others electronics devices

For detail marking information, please see page 7.

Marking

For detail order information, please see page 8.

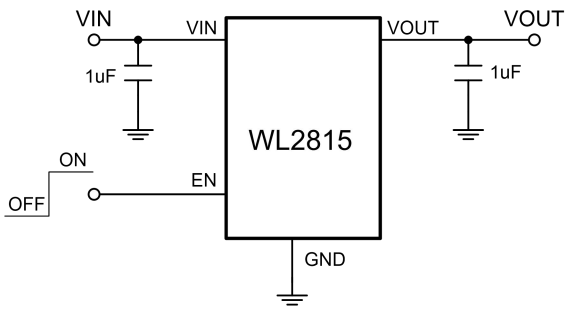
Order Information

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Typical Application

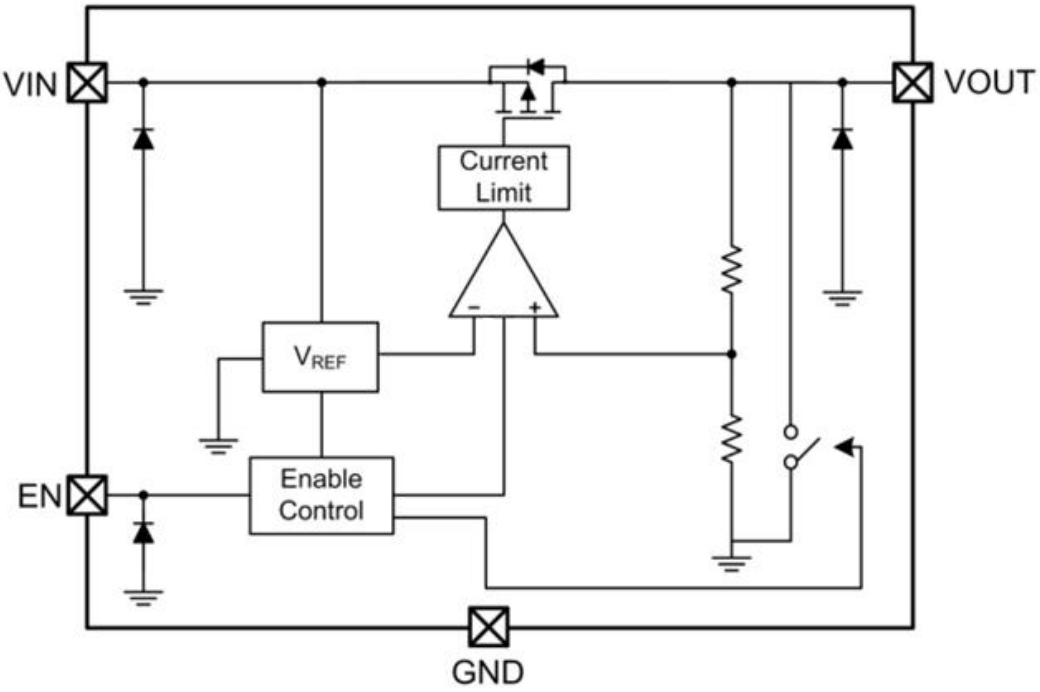


Pin Description

DFN1X1-4L

PIN	Symbol	Description
1	VOUT	Output
2	GND	Ground
3	EN	Enable (Active high，not floating)
4	VIN	Input
EP		GND level, this pin must connect to GND.

Block Diagram



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Absolute Maximum Ratings

Parameter	Value	Unit
Power Dissipation	400	mW
V_{IN} Range	-0.3～6.5	V
V_{EN} Range	-0.3～V_{IN}	V
V_{OUT} Range	-0.3～V_{IN}	V
Lead Temperature	260	°C
Storage Temperature	-65 ~ 150	°C
Operating Junction Temperature	150	°C
MSL	Level-1	
ESD Capability, Human Body Model	7000	V
ESD Capability, Machine Model	400	V

Operating Range

Parameter	Value	Unit
Thermal Resistance, $R_{\theta JA}$	250	°C/W
Input Voltage	2.1 ~ 5.5	V
Operating Temperature Range	-40～85	°C

Electronics Characteristics (V_{IN} = V_{OUT} +1V, C_{IN}=C_{OUT}=1uF, T_A=25°C, unless otherwise noted)

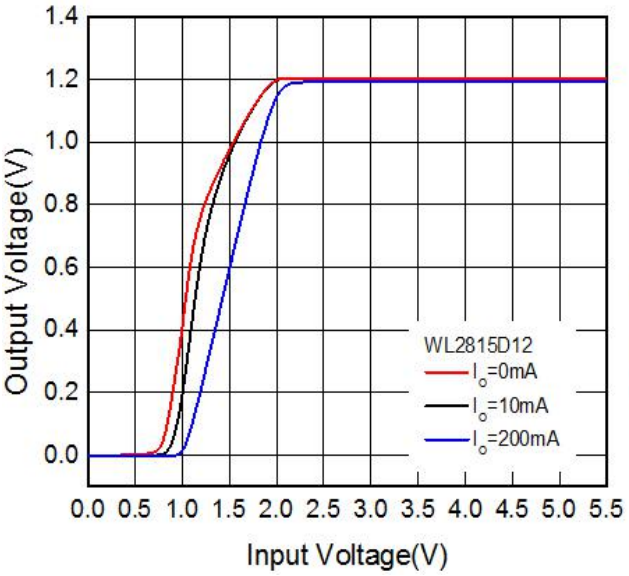
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	Vout＜2V, I_{OUT}=1mA	-3%		+3%	
		Vout≥2V, I_{OUT}=1mA	-2%		+2%	
Output Current	I_{OUT}	V_{OUT} =1.2V	150			mA
		V_{OUT}=2.0V	200			
		V_{OUT}=3.3V	300			
Output short current limiter	I_{LIM}	V_{OUT}=GND		80		mA
Dropout Voltage	V_{DROP}	I_{OUT} =100mA, V_{OUT}=3.3V		75		mV
		I_{OUT} =300mA, V_{OUT}=3.3V		230		
Line Regulation	△V_{LINE}	V_{IN}=V_{OUT}+1V~5.5V, I_{OUT}=40mA		0.1		%/V
Load Regulation	△V_{LOAD}	I_{OUT} = 1~ 300mA		20		mV
Quiescent Current	I_Q	V_{IN} = V_{OUT} +1V, I_{OUT}=0A		1.5	2.5	uA
Output Voltage Temperature Coefficient	TC	-40℃≤Ta≤125℃		100		ppm/℃
Power Supply Ripple Rejection	PSRR	Vp-p=1V, F=100Hz, I_{OUT}=10mA		65		dB
		Vp-p=1V, F=1KHz, I_{OUT}=10mA		45		dB
Output Noise Voltage	V_{NO}	BW=10Hz to 100kHz I_{OUT}=10mA		50		uVrms
Shut Down Current	I_{SD}	V_{EN}=0V		0.01	1.0	uA
Soft-Start Time	Tss	V_{OUT}=10%-90%		500		us
EN Logic High Voltage	V_{ENH}	V_{IN} =5.5V, I_{OUT} =1mA	1.2			V
EN Logic Low Voltage	V_{ENL}	V_{IN} =5.5V, V_{OUT} =0V			0.4	V
Output Discharge resistance	R_{DIS}	V_{IN} =4.0V, V_{EN}=0V		120		Ω

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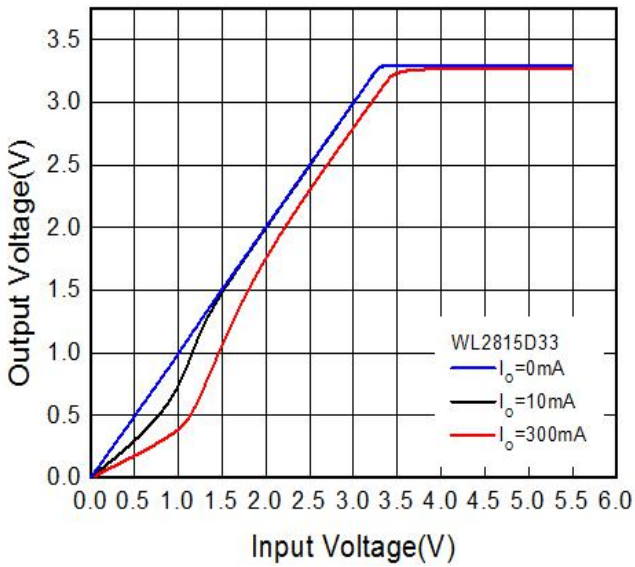
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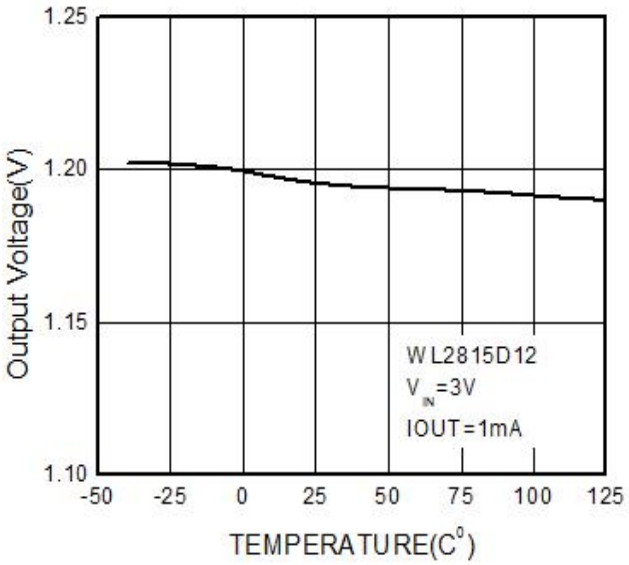
Typical Characteristics (T_A=25°C, unless otherwise noted)



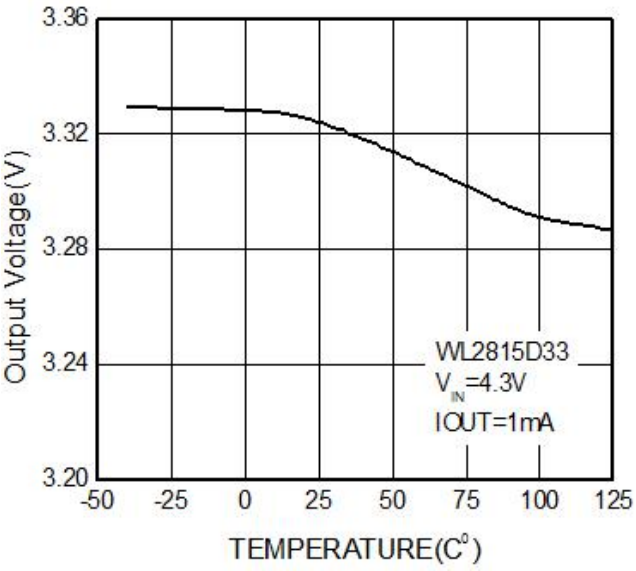
Output Voltage vs. Input Voltage



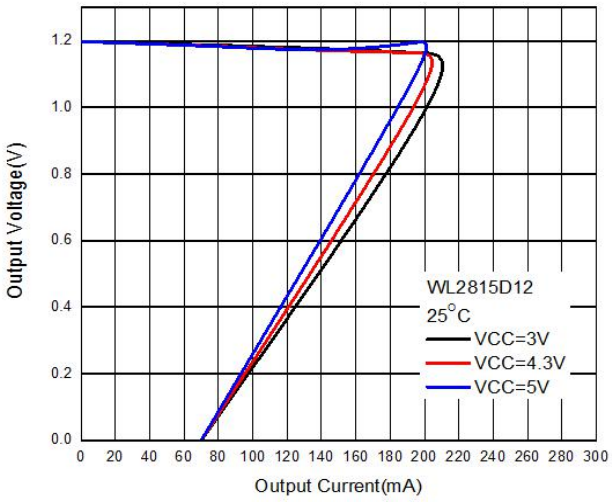
Output Voltage vs. Input Voltage

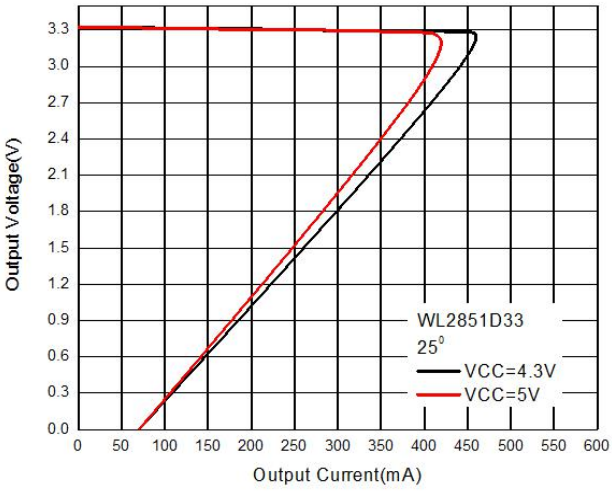


Output Voltage vs. Temperature



Output Voltage vs. Temperature



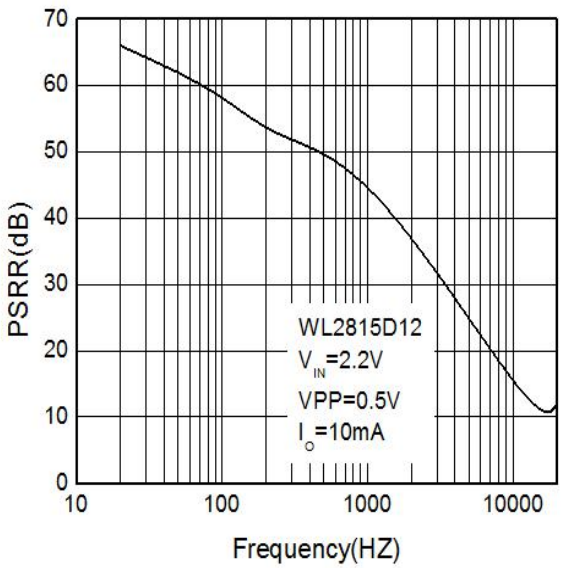


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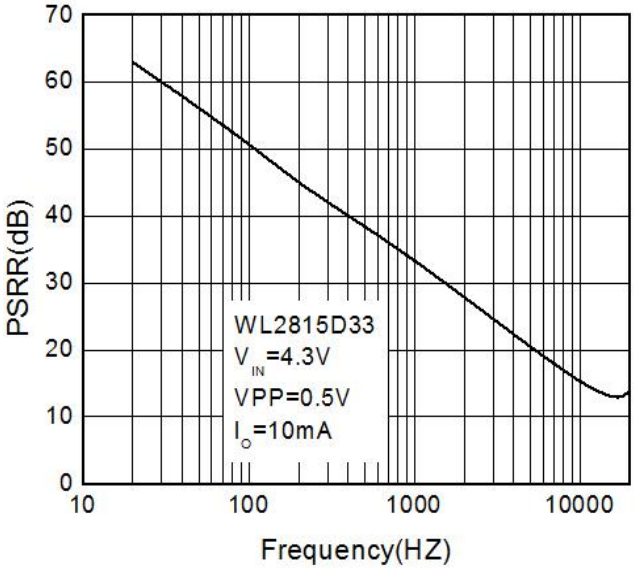
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Output Voltage vs. Output Current

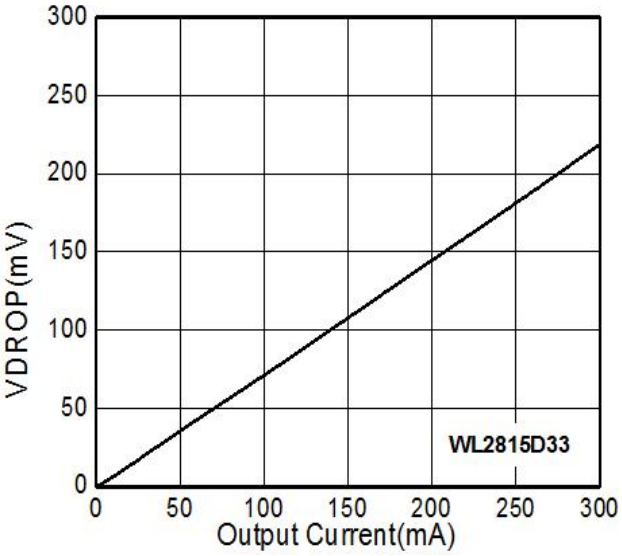


PSRR vs. Frequency

Output Voltage vs. Output Current



PSRR vs. Frequency

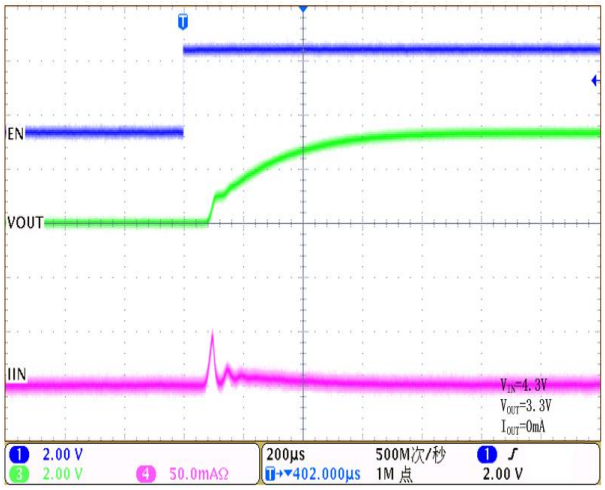


Dropout Voltage vs. Output Current

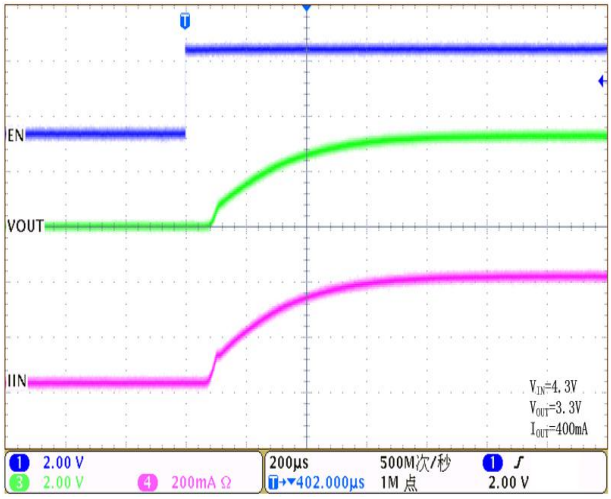
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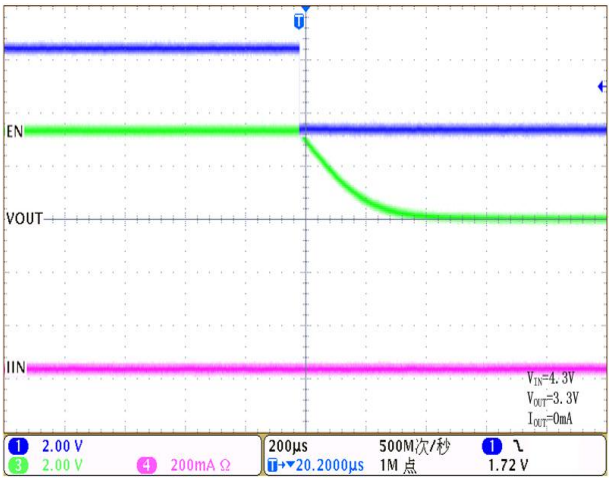
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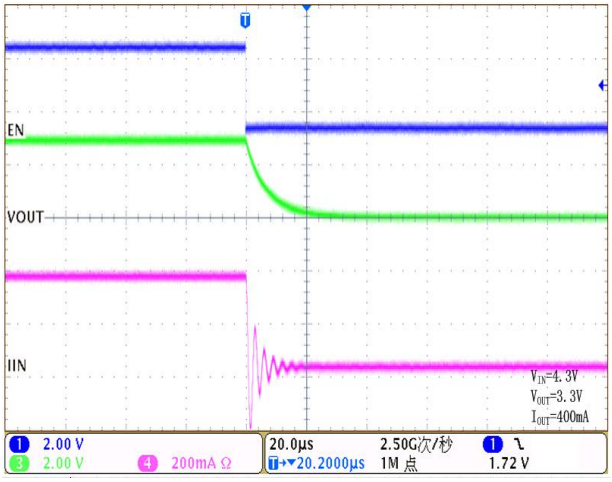
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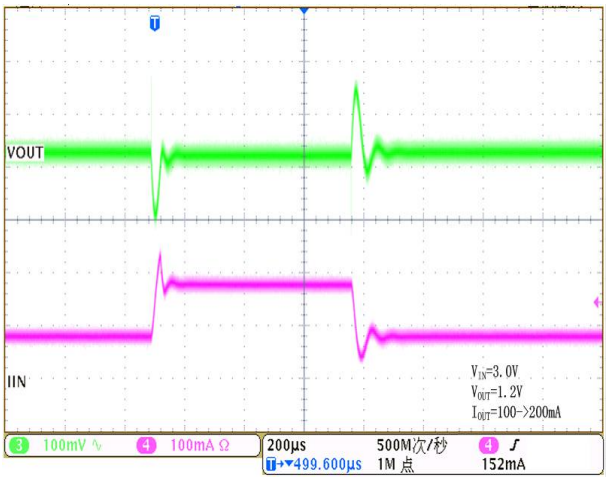
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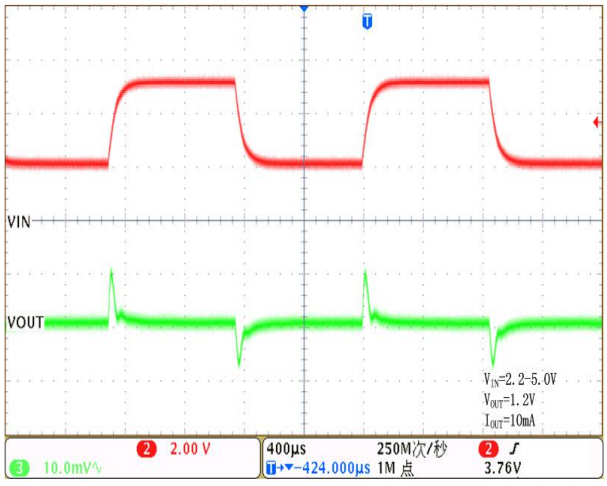
Turn Off



Turn Off



Load Step



Line Step

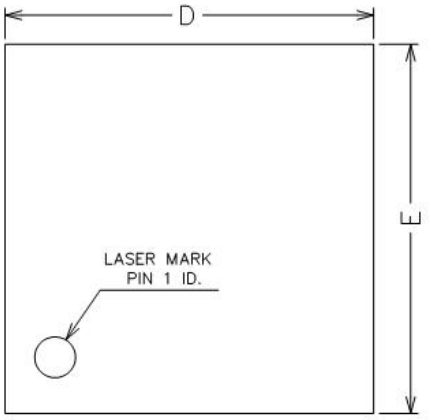
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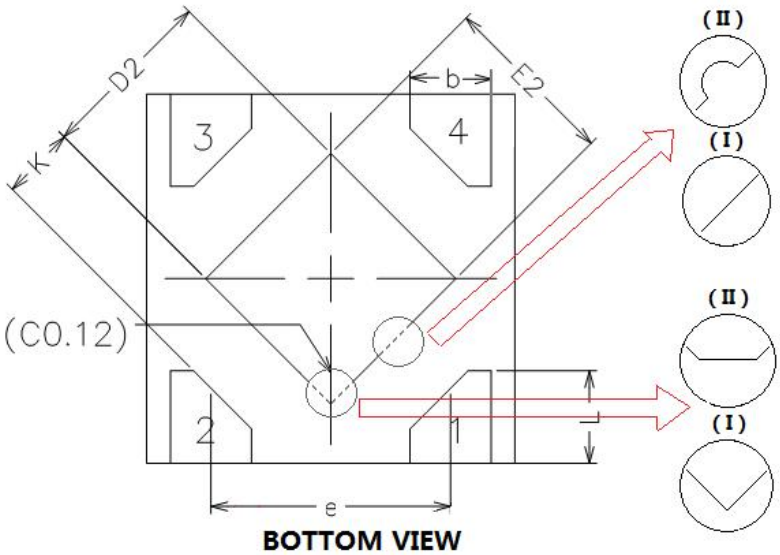
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Packaging Information

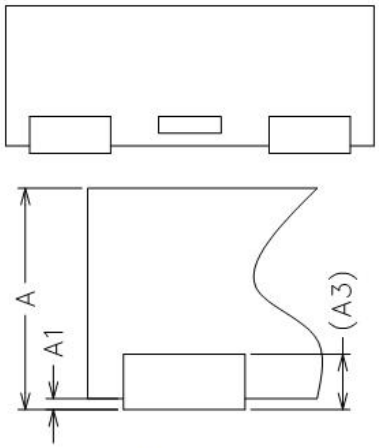
DFN1x1-4L



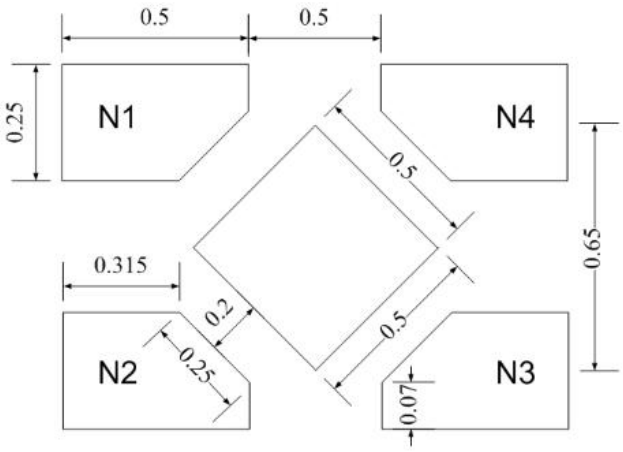
TOP VIEW



BOTTOM VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN(unit:mm)

Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.34	0.37	0.40
A1	0.00	0.02	0.105
A3		0.10 REF	
b	0.17	0.22	0.27
D	0.95	1.00	1.05
E	0.95	1.00	1.05
D2	0.43	0.48	0.53
E2	0.43	0.48	0.53
L	0.20	0.25	0.30
e	0.60	0.65	0.70
K	0.15	-	-

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Order Information

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2815D11-4/TR	1.1	DFN-1X1-4L	-40~+85°C	AD YW	10,000 Tape & Reel
WL2815D12-4/TR	1.2	DFN-1X1-4L	-40~+85°C	AE YW	10,000 Tape & Reel
WL2815D15-4/TR	1.5	DFN-1X1-4L	-40~+85°C	AG YW	10,000 Tape & Reel
WL2815D18-4/TR	1.8	DFN-1X1-4L	-40~+85°C	AH YW	10,000 Tape & Reel
WL2815D20-4/TR	2.0	DFN-1X1-4L	-40~+85°C	AI YW	10,000 Tape & Reel
WL2815D25-4/TR	2.5	DFN-1X1-4L	-40~+85°C	AK YW	10,000 Tape & Reel
WL2815D28-4/TR	2.8	DFN-1X1-4L	-40~+85°C	AL YW	10,000 Tape & Reel
WL2815D30-4/TR	3.0	DFN-1X1-4L	-40~+85°C	AM YW	10,000 Tape & Reel
WL2815D33-4/TR	3.3	DFN-1X1-4L	-40~+85°C	AN YW	10,000 Tape & Reel

Marking:

A: Device Code
*** : Voltage Code**
Y : Year Code
W: Week Code

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