

■ **INTRODUCTION**

The CE6212 Series are a group of dual channel low-dropout voltage regulators designed for portable and wireless applications that require high PSRR, low quiescent current and excellent line and load transient response. The CE6212 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators internally. The CE6212 is stable with a small 1μF ceramic on the output, which is ideal for battery powered systems for delivering low dropout voltage and low quiescent current. It provides up to 300mA at each channel, from a 2.0V to 6.0V input. The CE6212 is available in 6 pin SOT-23 package.

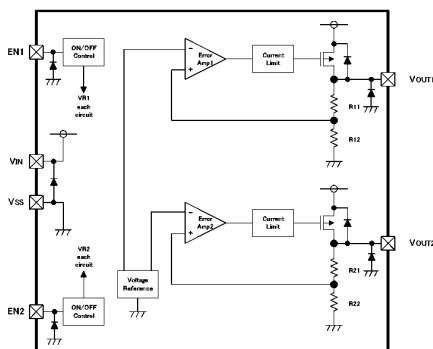
■ **FEATURES**

- Shutdown Current: < 0.1μA
- Output Current: 300mA
- Output Voltage Range: 1.2V ~ 5.0V, (selectable in 0.1V steps)
- High Accuracy: ±2% (Typ.)
- Dropout Voltage: 100mV@100mA (3.0V Typ.)
- Excellent Line Regulation: 0.01%/V
- Built-in Current Limiter
- Built-in Short Circuit Protection
- Static safety: 2KV@HBM
- TC: 100ppm/°C
- Low ESR Ceramic Capacitor Compatible

■ **APPLICATIONS**

- Mobile phones
- WLAN and Bluetooth appliances
- Portable Audio Equipments
- Cordless telephone
- Cameras, Video recorders
- Battery powered portable devices

■ **BLOCK DIAGRAM**



■ **ORDER INFORMATION**

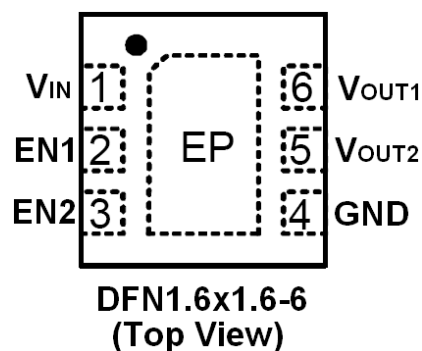
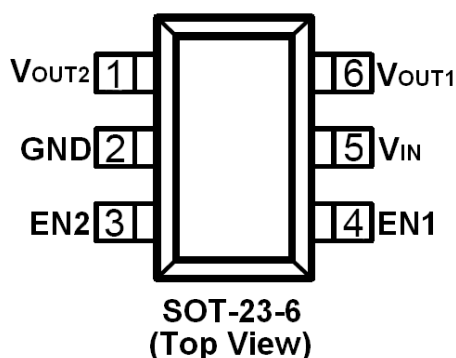
CE6212①②③④⑤

| DESIGNATOR | SYMBOL | DESCRIPTION |
|------------|--------|---|
| ①② | EE | High Active |
| ③④ | I II | I : Regulator1 Output Voltage II : Regulator2 Output Voltage (See Chart1) |
| ⑤ | E | Package: SOT-23-6 |
| | F | Package: DFN1.6×1.6-6 |

Chart1 (Regulator1, Regulator2 Output Voltage Indicate)

| symbol | Output Voltage | symbol | Output Voltage | symbol | Output Voltage | symbol | Output Voltage |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| a | 0.9 | A | 3.5 | n | 2.2 | N | 4.8 |
| b | 1.0 | B | 3.6 | o | 2.3 | O | 4.9 |
| c | 1.1 | C | 3.7 | p | 2.4 | P | 5.0 |
| d | 1.2 | D | 3.8 | q | 2.5 | Q | 5.1 |
| e | 1.3 | E | 3.9 | r | 2.6 | R | 5.2 |
| f | 1.4 | F | 4.0 | s | 2.7 | S | 5.3 |
| g | 1.5 | G | 4.1 | t | 2.8 | T | 5.4 |
| h | 1.6 | H | 4.2 | u | 2.9 | U | 5.5 |
| i | 1.7 | I | 4.3 | v | 3.0 | V | 5.6 |
| j | 1.8 | J | 4.4 | w | 3.1 | W | 5.7 |
| k | 1.9 | K | 4.5 | x | 3.2 | X | 5.8 |
| l | 2.0 | L | 4.6 | y | 3.3 | Y | 5.9 |
| m | 2.1 | M | 4.7 | z | 3.4 | Z | 6.0 |

■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS

(Unless otherwise specified, Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNITS |
|------------------------------|-----------------------|----------------------------------|-------|
| Input Voltage | V_{IN} | $V_{SS} - 0.3 \sim V_{SS} + 7$ | V |
| Output Current | $I_{OUT1} + I_{OUT2}$ | 700 | mA |
| Output Voltage | V_{OUT} | $V_{SS} - 0.3 \sim V_{IN} + 0.3$ | V |
| Power Dissipation | SOT-23-6 P_d | 250 | mW |
| Operating Temperature | T_{opr} | -40~+85 | °C |
| Storage Temperature | T_{stg} | -40~+125 | °C |
| Soldering Temperature & Time | T_{solder} | 260°C, 10s | |

■ ELECTRICAL CHARACTERISTICS

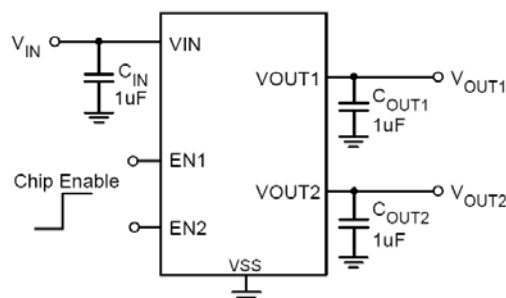
Regulator1, Regulator2 ($V_{IN}=V_{OUT}+1V$, $C_{IN}=C_{OUT}=1\mu F$, $T_a=25^\circ C$, unless otherwise specified)

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS | |
|--|--|---|-------------------------------|--------------------|-----------------------|--------------------|---|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=1mA$, $V_{IN}=V_{OUT}+1V$, $V_{IN}\geq 2V$ | $1.5V < V_{OUT} \leq 5.0V$ | V_{OUT} *0.98 | V_{OUT} (Note 1) | V_{OUT} *1.02 | V |
| | | | $1.2V \leq V_{OUT} \leq 1.5V$ | V_{OUT} -0.03 | V_{OUT} | V_{OUT} +0.03 | V |
| Supply Current | I_{SS} | $V_{EN}=V_{IN}=V_{OUT}+1V$ | | 100 | 160 | μA | |
| Shutdown Current | I_{SHDN} | $V_{EN} = V_{SS}$ | | 0.1 | 1.0 | μA | |
| Output Current | I_{OUT} | $V_{IN}\geq 2V$, $V_{IN}=V_{OUT}+1V$ | 300 | | | mA | |
| Dropout Voltage (Note 3) | V_{dif} | $I_{OUT} = 100mA$ $V_{OUT}\geq 2.8V$ | | 100 | | mV | |
| Load Regulation | ΔV_{OUT} | $V_{IN}= V_{OUT} +1V$, $1mA\leq I_{OUT}\leq 100mA$ | | 10 | | mV | |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} * V_{OUT}}$ | $I_{OUT} = 10mA$ $V_{OUT} +1V\leq V_{IN}\leq 6V$ | | 0.01 | 0.2 | %/V | |
| Output Voltage Temperature Characteristics | $\frac{\Delta V_{OUT}}{\Delta T * V_{OUT}}$ | $I_{OUT} = 10mA$ $-40\leq T\leq +85$ | | 100 | | ppm/ $^\circ C$ | |
| Power Supply Ripple Rejection | PSRR | $I_{OUT} = 50mA$ $f = 1KHz$ | | 70 | | dB | |
| Short Current | I_{Short} | $V_{OUT} = V_{SS}$ | | 100 | | mA | |
| Current Limit | I_{Lim} | $V_{IN}= V_{OUT} +1V$ | | 600 | | mA | |
| Input Voltage | V_{IN} | — | 2.0 | | 6.0 | V | |
| CE "High" Voltage | V_{CE} "H" | | 1.5 | | V_{IN} | V | |
| CE "Low" Voltage | V_{CE} "L" | | | | 0.3 | V | |

NOTE:

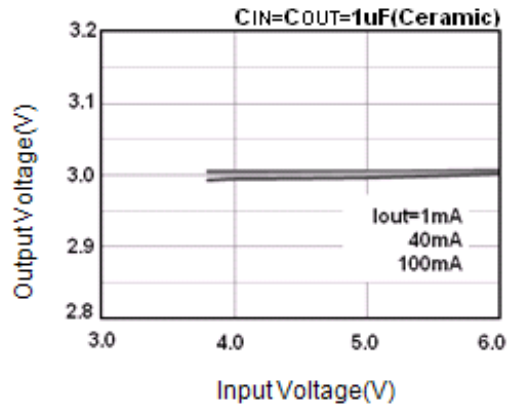
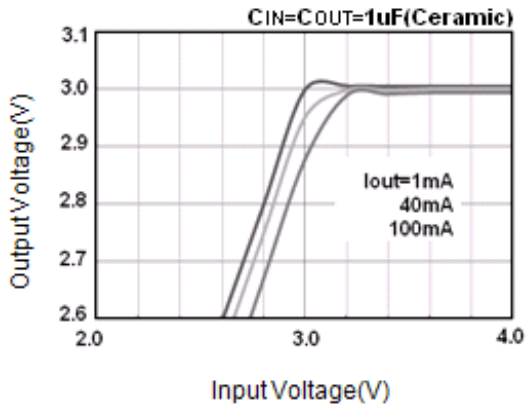
1. V_{OUT} : Specified Output Voltage.
2. $V_{OUT(E)}$: Effective Output Voltage (i.e. The Output Voltage When $V_{IN} = (V_{OUT} + 1.0V)$ And Maintain A Certain I_{OUT} Value).
3. V_{dif} : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of $V_{OUT(E)}$; When $V_{OUT}<2.0V$, $V_{IN}\geq 2.0V$ Should be Guaranteed.

■ TYPICAL APPLICATION

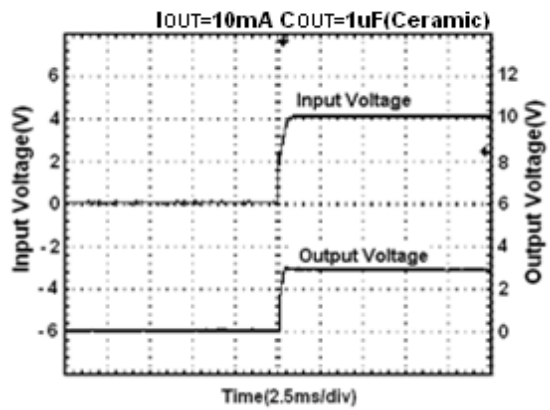
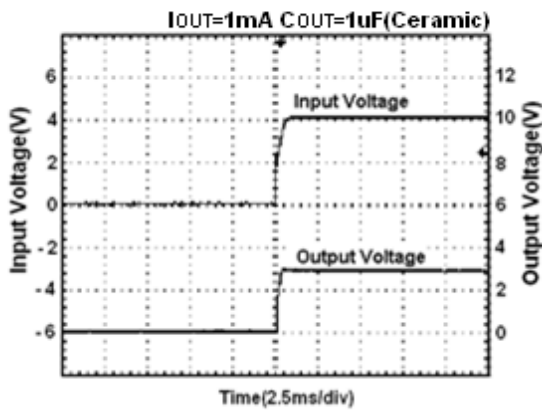


■ TYPICAL PERFORMANCE CHARACTERISTICS

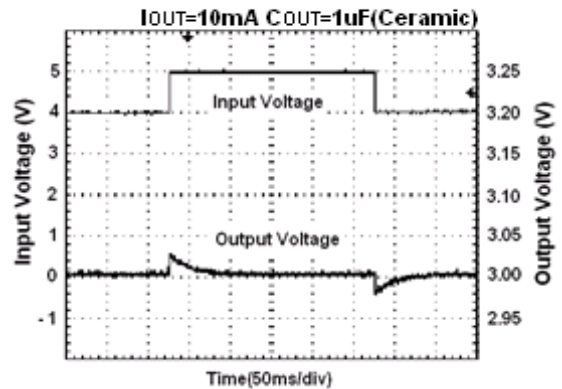
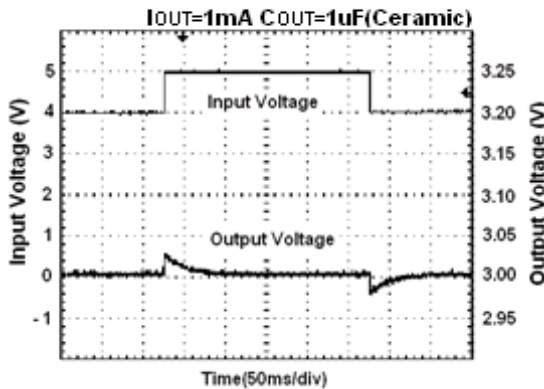
(1) Output Voltage vs. Input Voltage



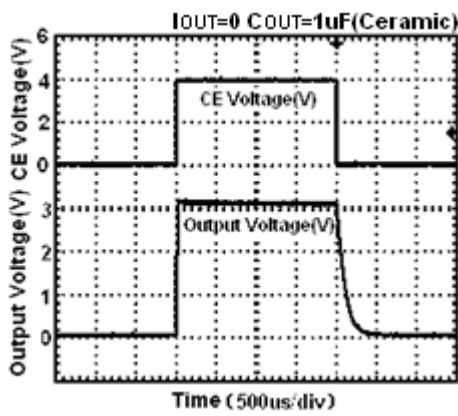
(2) Input Transient Response 1



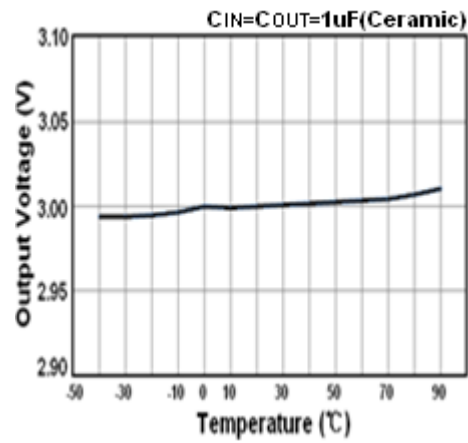
(3) Input Transient Response 2



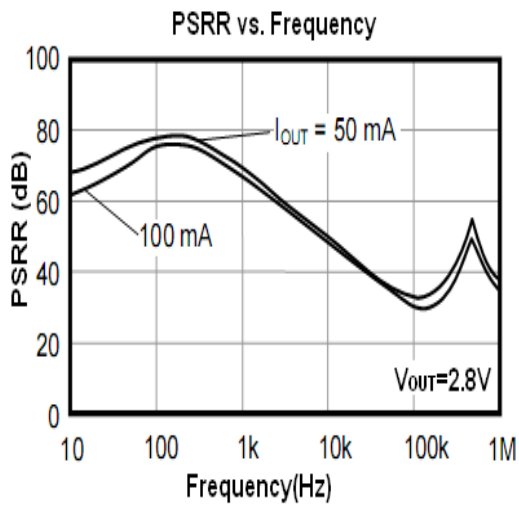
(4) EN Shutdown Response



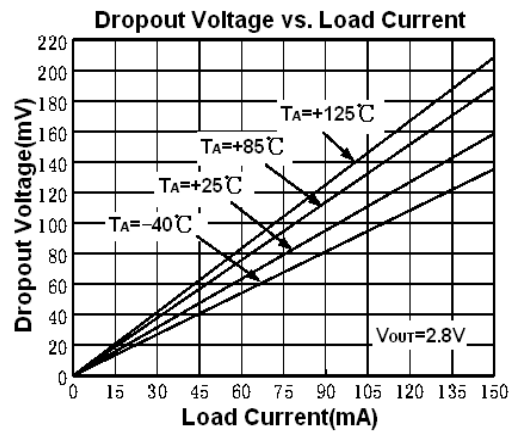
(5) Output Voltage vs. Temperature



(6) PSRR

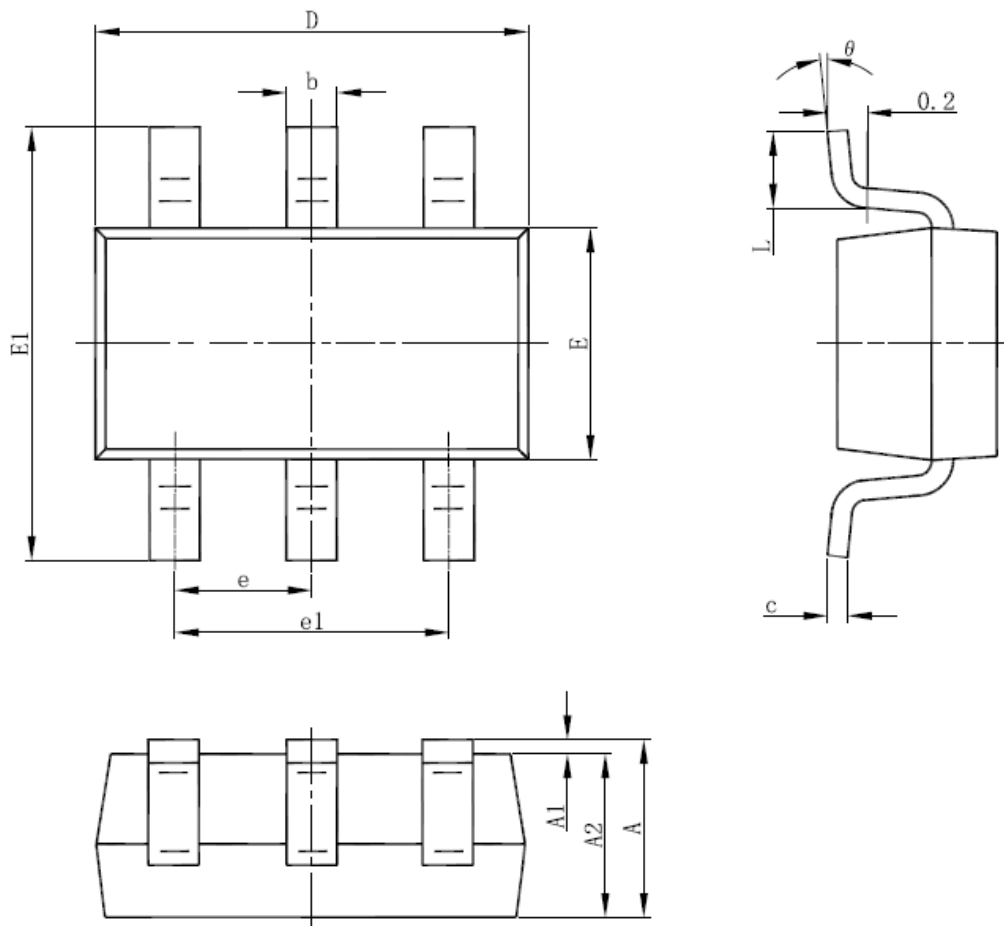


(7) Dropout



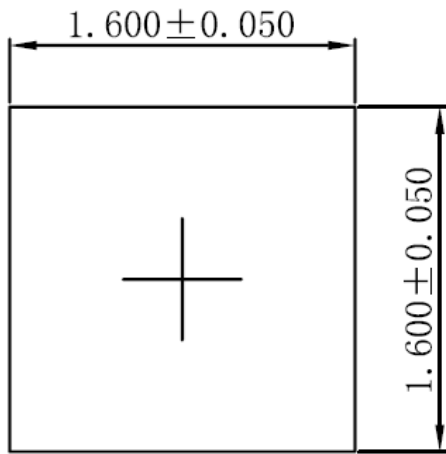
■ PACKAGING INFORMATION

● SOT-23-6 PACKAGE OUTLINE DIMENSIONS

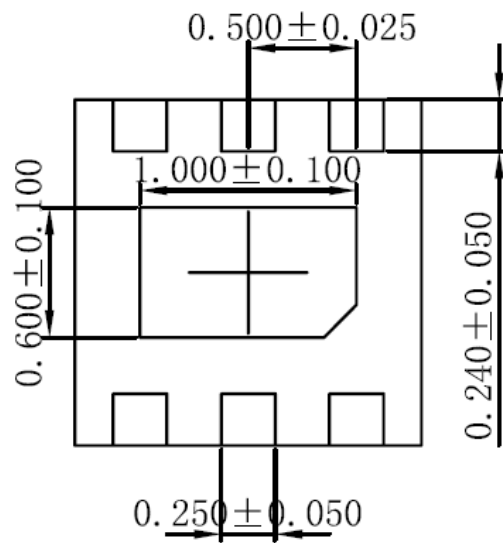


| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950(BSC) | | 0.037(BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |

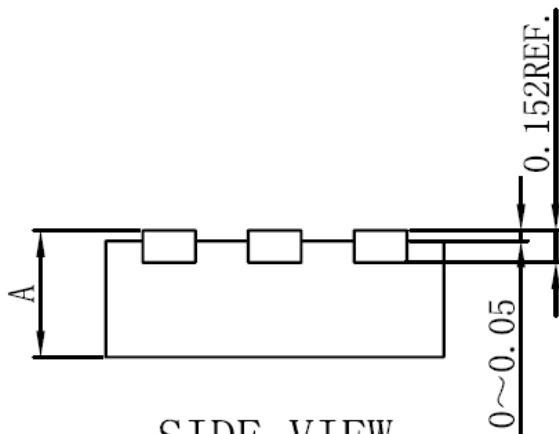
• DFN1.6×1.6-6 PACKAGE OUTLINE DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

| | MIN. | NORM. | MAX. |
|---|-------|-------|-------|
| A | 0.450 | 0.500 | 0.550 |
| | 0.550 | 0.600 | 0.650 |

© Nanjing Chipower Electronics Inc.

Chipower cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Chipower product. No circuit patent license, copyrights or other intellectual property rights are implied. Chipower reserves the right to make changes to their products or specifications without notice. Customers are advised to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete.