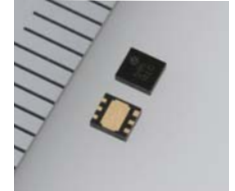


# XC6230 Series



Based on a CMOS process, the XC6230 series are high-speed LDO regulators with a maximum output current of 2A. A Pch driver  $T_r$  with a low ON resistance of  $0.17\Omega$  is incorporated in the IC, and stable output can be obtained even when the dropout voltage is small, making this product ideal for a battery voltage or the end stage of a DC/DC converter. Rush current protection, reverse current protection, and thermal shutdown protection circuits are incorporated as protective functions, and the IC is housed in the USP-6C package to enable space-saving mounting as a protective function IC. Also, an adjustable output voltage function enables any voltage to be set within the range 1.2V to 5.0V, and an adjustable current limiting function enables any current to be set within the range 0.3A to 2.5A.

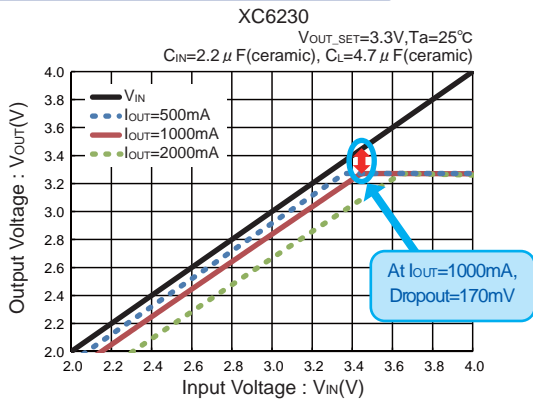


USP-6C  
(1.8x2.0x0.6mm)

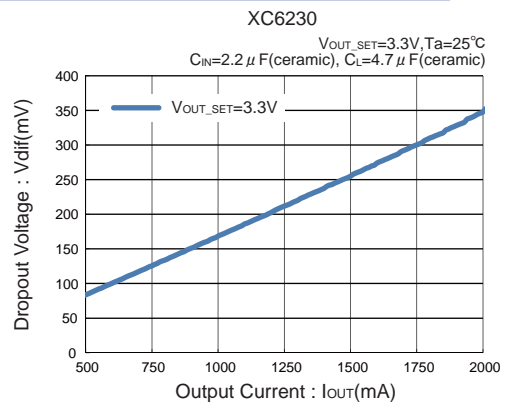


## Internal Pch driver $T_r$ with a low ON resistance

### Output Voltage vs. Input Voltage

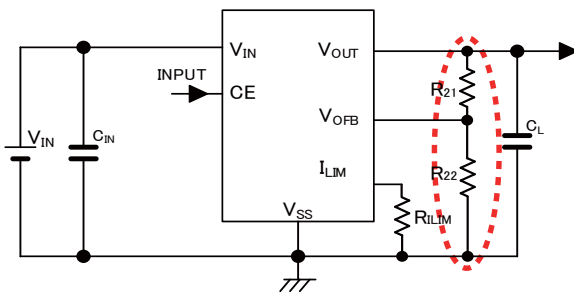


### Dropout Voltage vs. Output Current



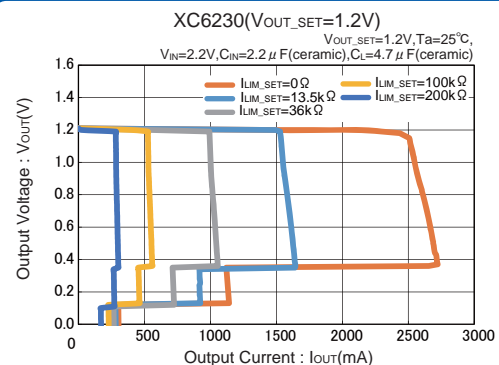
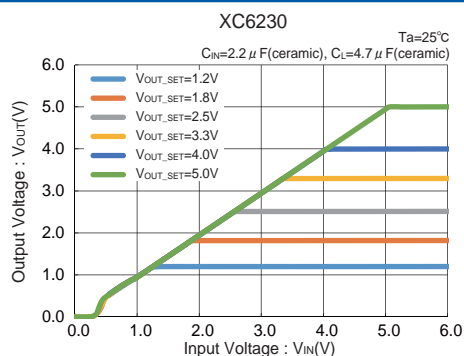
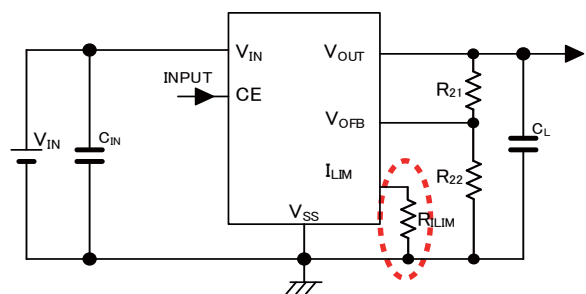
### Adjustable output voltage

The output voltage can be set within the range of 1.2V to 5.0V by changing the value of the external resistors ( $R_{21}$ ,  $R_{22}$ ).



### Adjustable current limit

The current limit can be set within the range of 0.3A to 2.5A by changing the value of the external resistor ( $R_{ILIM}$ ).



Adjustable Voltage Output Multifunction 2A High Speed LDO Regulator **XC6230 Series**



Enhanced Protection Features

**Reverse Current Protection**

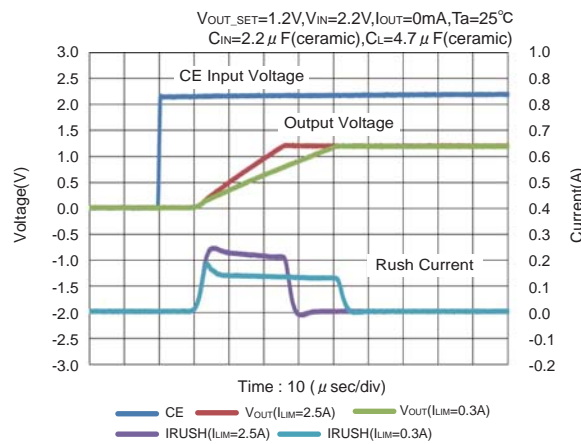
When the output voltage is higher than the input voltage, the reverse current protection function prevents current that flows in reverse from the output pin ( $V_{OUT}$ ) to the input pin ( $V_{IN}$ ).

**Thermal Shutdown**

A thermal shutdown (TSD) circuit is incorporated to protect the IC from overheating. When the junction temperature reaches the detection temperature ( $150^{\circ}\text{C}$ ), this function forcibly shuts the driver transistor OFF.

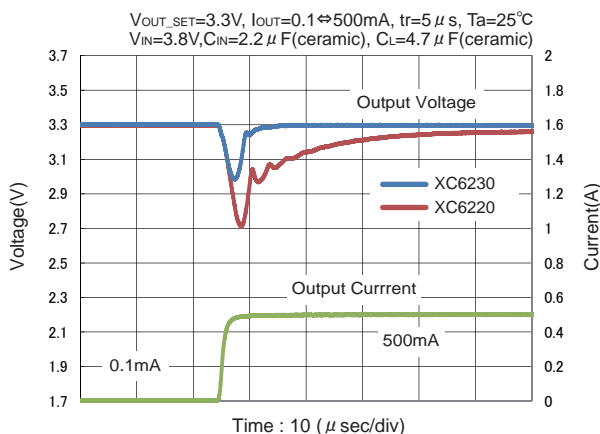
**Inrush Current Protection**

When the IC starts, this function limits the current that suddenly flows from the input pin ( $V_{IN}$ ) to the output pin ( $V_{OUT}$ ) to charge the output stabilization capacitor ( $C_L$ ). When  $C_L=4.7\ \mu\text{F}$ , the rush current is limited to 500mA or less, making it possible to design a safer circuit.

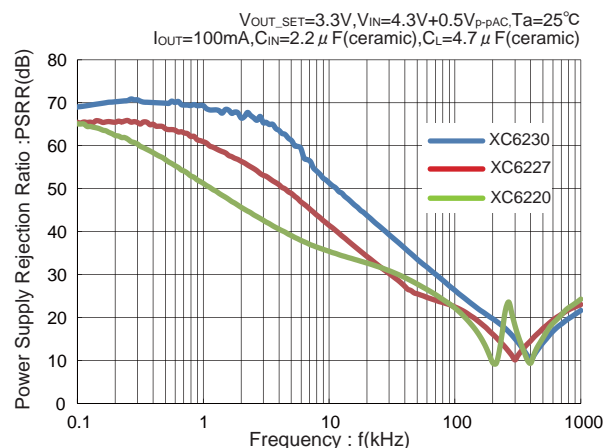


High-speed response

**Load Transient Response**



**Power Supply Rejection Ratio**



Features

Maximum output current	2.0A	ON resistance	$0.17\ \Omega$ ( $V_{OUT\_SET}=3.3\text{V}$ )
Output voltage setting range	1.2V~5.0V	Supply current	$45\ \mu\text{A}$
Output Voltage Accuracy	$1.2\text{V}\pm 1.0\%$	Functions	Reverse Current Protection, Output Voltage adjustable
Input voltage range	1.7V~6.0V		Inrush Current Protection, Current Limit adjustable
Current limit setting range	0.3A~2.5A		Thermal shutdown, Short Protection
Operating Ambient Temperature	$-40^{\circ}\text{C}\sim +105^{\circ}\text{C}$		$C_L$ High Speed Discharge

