TOREX
New Product Leaflet

Supports12V / 24V Input Voltage Regulators

XC6702 / XC6701 / XC6216 Series

Household Appliances | Industrial Equipment | In-vehicle Devices | Audio/visual Dvices

XC6702, XC6701, and XC6216 series are high-voltage regulator ICs manufactured using CMOS processes. They are ideal for power distribution using 12V or 24V lines, in applications such as general consumer electronics, industrial equipment, and vehicle-mounted equipment. These products are equipped with basic functions which include a CE function, overcurrent protection function, and overheat protection function. With the CE function, a low-level input is provided to the CE terminal, putting the IC into standby mode and reducing its quiescent current to 0.1 μA or less. The overcurrent protection function and overheat protection function will operate to protect the IC if the output current reaches the current limit level or if the junction temperature reaches the temperature limit level.

FEATURES	ALLOWING FAST RESPONSE	ALLOWING FAST RESPONSE	LOW SUPPLY CURRENT
Series	XC6702	XC6701	XC6216
Input voltage range	4.5V～36V	2.0V～28V	2.0V～28V
Output voltage range	1.8V～18V (Fix)	1.8V～18V (Fix)	2.0V～12V (Fix) 2.0V～23V (Externally set)
Maximum Output Current	300mA	150mA	150mA
Dropout voltage	350mV@IOUT=100mA (VOUT=5.0V)	1000mV@IOUT=100mA (VOUT=5.0V)	1000mV@IOUT=100mA (VOUT=5.0V)
Supply current	40 μA	50 μA	5 μA
Ripple rejection ratio	65dB@1kHz	50dB@1kHz	30dB@1kHz
Package	3	6	8
Pin function	Current limiting,Short-circuit protection, Overheating protection,Soft start	Current limiting,Short-circuit protection, Overheating protection	Current limiting,Short-circuit protection, Overheating protection

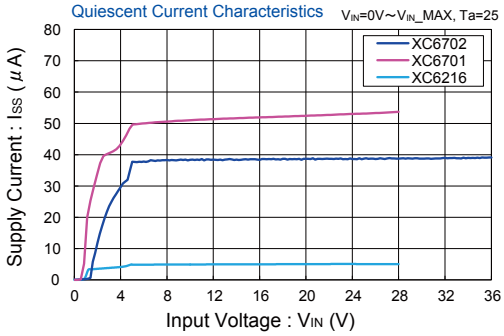
SALES POINT 1 Extensive Package Lineup

A diverse package lineup is available, including the TO-252 and SOP-8FD high heat dissipation packages with allowable continuous power dissipation of 1500 mW or higher, the USP-6C leadless compact package, and the USP-6B06 ultra-thin package. High heat dissipation packages are suitable for cases where there is a large input-output dropout voltage or load current and it is necessary to account for heat generation, while compact packages may be chosen for cases where there is little available mounting space due to reduced board sizes. These different packages allow the same products to be used to support a wide variety of applications.

Package name	TO-252	SOP-8FD	SOT-223	SOT-89-5	SOT-89	USP-6C	USP-6B06	SOT-25	SOT-23
Power dissipation (mW)	1800	1500	1500	1300	1000	1000	900	600	500
Dimensions (mm)	6.35 x 9.35 x 2.4	6.0 x 4.9 x 1.55	7.0 x 6.6 x 1.7	4.5 x 4.35 x 1.6	4.5 x 4.0 x 1.6	1.8 x 2.0 x 0.6	1.5 x 1.8 x 0.33	2.8 x 2.9 x 1.3	2.8 x 2.9 x 1.3
Appearance									
XC6702	-	○	-	○	-	○	-	-	-
XC6701	○	-	○	○	○	○	-	○	-
XC6216	○	-	○	○	○	○	○	○	○

SALES POINT 2 Low Quiescent Current Characteristics

Compared to conventional bipolar regulators, CMOS regulators can greatly reduce quiescent current, to roughly 1/10 its conventional level. The XC6216 series in particular allows stable operation with a low quiescent current of only 5 μA. Moreover, the XC6701 and XC6216 can also be operated at low voltage (from VIN=2V).



RoHS Compliant | Halogen Antimony FREE

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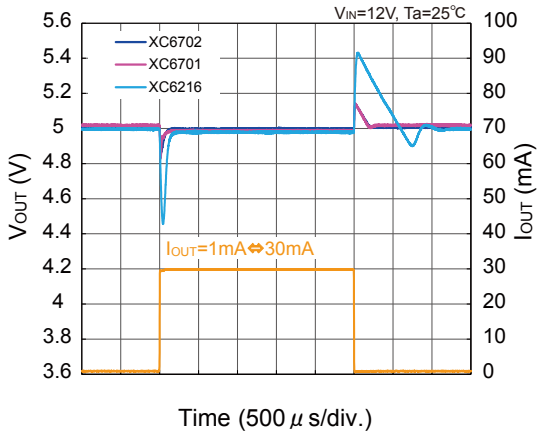
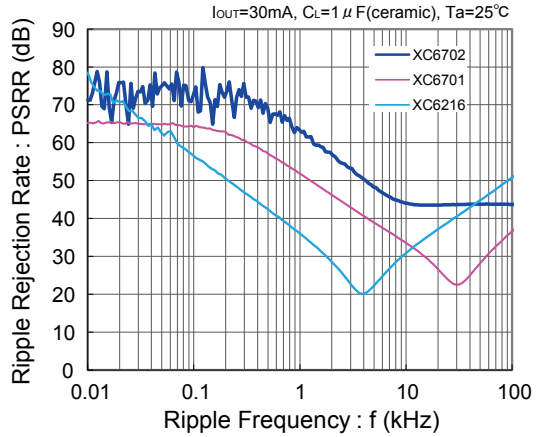
SALES POINT 3 Allowing Fast Response Type

Output voltages will vary as a result of changes in load current or fluctuations in input voltage. Changes in output voltage could cause malfunctions or other problems in devices at later stages, so such changes must be kept to a minimum. To do so, load-transient responsiveness is important for responding to changes in load current, while Ripple Rejection Ratios are important to handle fluctuations in input voltage. The XC6702, XC6701, and XC6216 have quiescent currents which are smaller than those of conventional bipolar regulators and also exhibit high-speed responsiveness, while exceptionally high Ripple Rejection Ratios have been achieved in the XC6702 and XC6701, with PSRR values of 50 dB or higher (@f=1kHz).

Load transient response



Ripple rejection ratio

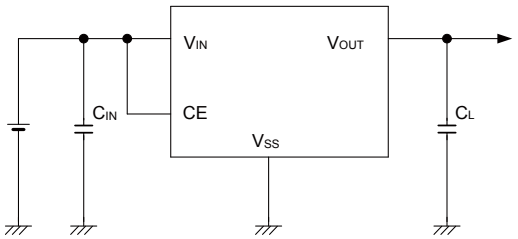


SALES POINT 4 Output Current Adjustable (XC6216 Series)

The output voltage of the XC6216 series can be adjusted from 2.0V to 23V using external resistance. Even in cases where the output voltage values are different for each set or model, the XC6216 is able to accommodate those changes, contributing to the utilization of common parts.

Types have a fixed voltages

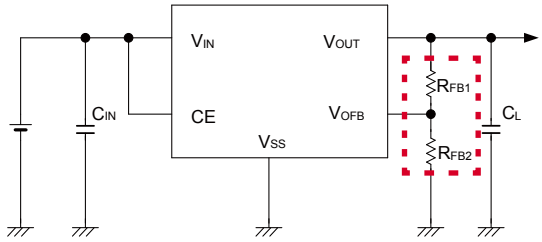
VOUT=2.0V～12V



Types have a fixed voltages
XC6216B/D Series

Types have a reference voltage

VOUT=2.0V～23V



Types have a reference voltage
XC6216C Series

SALES POINT 5 Suitable for a Peak Voltage of 46V (XC6702 Series)

The specifications of the XC6702 series allow it to withstand the application of surge voltages even exceeding the voltage ratings, as high as 46V for up to 400 ms. These specifications are suitable for vehicle-mounted applications.