

CYT6206 Low dropout voltage regulator

CYT
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General Description

CYT6206 series is a CMOS buck voltage regulator with high ripple rejection, low power consumption, low dropout and over-current and short-circuit protection. These devices have a very low static bias current (6.5μA typical), and they can provide an output current of 200mA with a very small voltage difference between input and output, and still maintain a good regulation rate. Because of the small voltage difference between input and output and the small static bias current, these devices are especially suitable for battery-powered products, such as computers, consumer products and industrial equipment, which want to extend the battery life.

Electric Characteristics

CYT6206A21(Unless otherwise stated, $T_A=25^{\circ}\text{C}$, $C_{\text{IN}}=C_{\text{OUT}}=10\mu\text{F}$.)

Symbol	Description	Conditions	Min.	Typ.	Max.	Unit
V_{OUT}	Output voltage	$I_{\text{OUT}}=1\text{mA}$, $V_{\text{IN}}=5\text{V}$	2.048	2.1	2.153	V
I_{OUTMAX}	Maximum current output	$V_{\text{IN}}=3.1\text{V}$	200	-	-	mA
V_{DIF1}	Differential pressure	$I_{\text{OUT}}=10\text{mA}$	-	35	-	mV
V_{DIF2}		$I_{\text{OUT}}=40\text{mA}$	-	140	-	mV
I_{Q}	Quiescent current	$V_{\text{IN}}=6.5\text{V}$	3	6.5	9	μA
ΔV_{OUT}	Load-characteristic	$V_{\text{IN}}=3.1\text{V}$, $1\text{mA} \leq I_{\text{OUT}} \leq 100\text{mA}$	-	22	-	mV
$\frac{\Delta V_{\text{OUT}}}{\Delta V_{\text{IN}} \times V_{\text{OUT}}}$	Line voltage regulation	$I_{\text{OUT}}=40\text{mA}$, $3.1\text{V} \leq V_{\text{IN}} \leq 6\text{V}$	-	0.35	-	%/V
$\frac{\Delta V_{\text{OUT}}}{\Delta T_{\text{A}} \times V_{\text{OUT}}}$	Output voltage temperature coefficient	$V_{\text{IN}}=3.1\text{V}$, $I_{\text{OUT}}=10\text{mA}$, $-10^{\circ}\text{C} \leq T_{\text{A}} \leq 70^{\circ}\text{C}$	-	±200	-	ppm/°C
V_{IN}	Input voltage	-	1.8	-	6.5	V
I_{SHORT}	Short circuit current	$V_{\text{IN}}=4.5\text{V}$, $V_{\text{OUT}} = \text{GND}$	-	150	-	mA

CYT6206A30(Unless otherwise stated, $T_A=25^{\circ}\text{C}$, $C_{\text{IN}}=C_{\text{OUT}}=10\mu\text{F}$.)

Symbol	Description	Conditions	Min.	Typ.	Max.	Unit
V_{OUT}	Output voltage	$I_{\text{OUT}}=1\text{mA}$, $V_{\text{IN}}=5\text{V}$	2.925	3.0	3.075	V
I_{OUTMAX}	Maximum current output	$V_{\text{IN}}=4\text{V}$	200	-	-	mA
V_{DIF1}	Differential pressure	$I_{\text{OUT}}=10\text{mA}$	-	30	-	mV
V_{DIF2}		$I_{\text{OUT}}=40\text{mA}$	-	110	-	mV
I_{Q}	Quiescent current	$V_{\text{IN}}=4\text{V}$	-	6.5	-	μA
ΔV_{OUT}	Load-characteristic	$V_{\text{IN}}=4\text{V}$, $1\text{mA} \leq I_{\text{OUT}} \leq 100\text{mA}$	-	25	-	mV
$\frac{\Delta V_{\text{OUT}}}{\Delta V_{\text{IN}} \times V_{\text{OUT}}}$	Line voltage regulation	$I_{\text{OUT}}=40\text{mA}$, $4\text{V} \leq V_{\text{IN}} \leq 6\text{V}$	-	0.4	-	%/V
$\frac{\Delta V_{\text{OUT}}}{\Delta T_{\text{A}} \times V_{\text{OUT}}}$	Output voltage temperature coefficient	$V_{\text{IN}}=4\text{V}$, $I_{\text{OUT}}=10\text{mA}$, $-40^{\circ}\text{C} \leq T_{\text{A}} \leq 85^{\circ}\text{C}$	-	±200	-	ppm/°C
V_{IN}	Input voltage	-	1.8	-	6.5	V
I_{SHORT}	Short circuit current	$V_{\text{IN}}=4.5\text{V}$, $V_{\text{OUT}} = \text{GND}$	-	150	-	mA

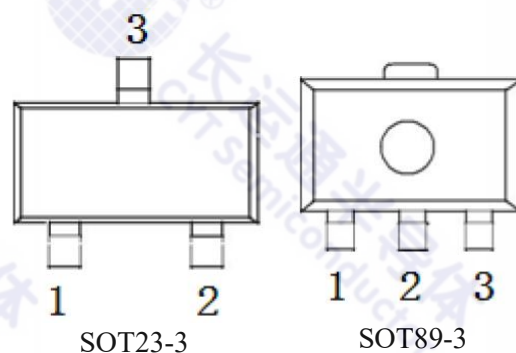
CYT6206A33(Unless otherwise stated, $T_A=25^{\circ}\text{C}$, $C_{\text{IN}}=C_{\text{OUT}}=10\mu\text{F}$.)

Symbol	Description	Conditions	Min.	Typ.	Max.	Unit
V_{OUT}	Output voltage	$I_{\text{OUT}}=1\text{mA}$, $V_{\text{IN}}=5\text{V}$	3.218	3.3	3.382	V
I_{OUTMAX}	Maximum current output	$V_{\text{IN}}=4.3\text{V}$	200	-	-	mA
V_{DIF1}	Differential pressure	$I_{\text{OUT}}=10\text{mA}$	-	31	-	mV
V_{DIF2}		$I_{\text{OUT}}=40\text{mA}$	-	121	-	mV
I_{Q}	Quiescent current	$V_{\text{IN}}=6.5\text{V}$	3	6.5	9	μA
ΔV_{OUT}	Load-characteristic	$V_{\text{IN}}=4.3\text{V}$, $1\text{mA} \leq I_{\text{OUT}} \leq 100\text{mA}$	-	24	-	mV
$\frac{\Delta V_{\text{OUT}}}{\Delta V_{\text{IN}} \times V_{\text{OUT}}}$	Line voltage regulation	$I_{\text{OUT}}=40\text{mA}$, $4.3\text{V} \leq V_{\text{IN}} \leq 6\text{V}$	-	0.4	-	%/V
$\frac{\Delta V_{\text{OUT}}}{\Delta T_{\text{A}} \times V_{\text{OUT}}}$	Output voltage temperature coefficient	$V_{\text{IN}}=4.3\text{V}$, $I_{\text{OUT}}=10\text{mA}$, $-10^{\circ}\text{C} \leq T_{\text{A}} \leq 70^{\circ}\text{C}$	-	± 200	-	ppm/ $^{\circ}\text{C}$
V_{IN}	Input voltage	-	1.8	-	6.5	V
I_{SHORT}	Short circuit current	$V_{\text{IN}}=4.5\text{V}$, $V_{\text{OUT}} = \text{GND}$	-	150	-	mA

Absolute Maximum Ratings

Symbol	Description	Range	Unit
V_{IN}	Input voltage	7	V
I_{OUT}	Output current	500	mA
V_{OUT}	Output voltage	$\text{GND}-0.3 \sim V_{\text{IN}}+0.3$	V
P_{D}	Packaging power consumption	SOT23-3	250
		SOT89-3	300
T_{OPT}	Operating temperature	$-40 \sim +85$	$^{\circ}\text{C}$
T_{STG}	Storage temperature	$-55 \sim +125$	$^{\circ}\text{C}$
T_{SOLDER}	Welding temperature and time	260, 10	$^{\circ}\text{C}$, s

Pin Diagram (Top View)



Typical Application

