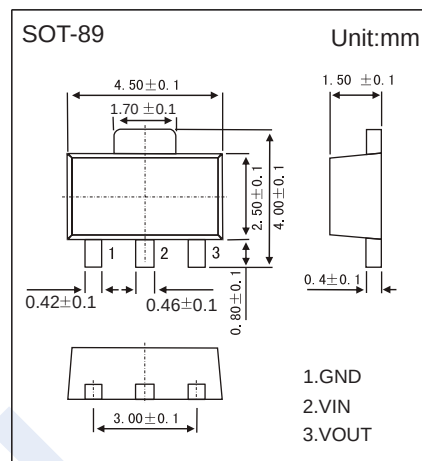
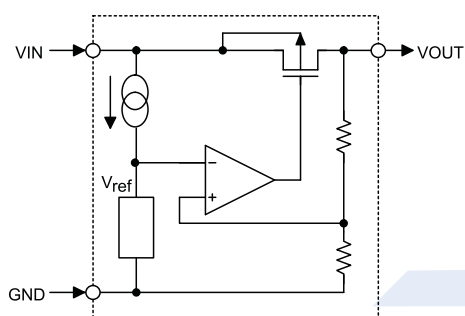


High Driver Regulator

KA10O1XX

■ Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- High input voltage (up to 24V)
- High output current : 100mA



■ Selection Table

Part No.	Output Voltage	Tolerance
KA10O130	3V	±5%
KA10O133	3.3V	±5%
KA10O136	3.6V	±5%
KA10O144	4.4V	±5%
KA10O150	5V	±5%
KA10O180	8V	±5%

■ Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{SS}	-0.3 to 26	V
Power Consumption	P _C	250	mW
Junction Temperature	T _J	125	°C
Operating Temperature	T _{opr}	0 to 70	
Storage Temperature range	T _{stg}	-50 to 125	

■ Marking

NO.	KA10O130	KA10O133	KA10O136	KA10O144	KA10O150	KA10O180
Marking	K130	K133	K136	K144	K150	K180

High Driver Regulator

KA1001XX

■ Electrical Characteristics Ta = 25℃

KA100130, +3.0V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	5V	I _{OUT} = 10mA	2.85	3	3.15	V
Output Current	I _{OUT}	5V		60	100		mA
Load Regulation	ΔV _{OUT}	5V	1mA ≤ I _{OUT} ≤ 50mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	5V	No load		10	20	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		4V ≤ V _{IN} ≤ 12V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	5V	I _{OUT} =10mA 0℃ < T _a < 70℃		±0.45		mV/℃

KA100133, +3.3V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	5.5V	I _{OUT} = 10mA	3.14	3.3	3.47	V
Output Current	I _{OUT}	5.5V		60	100		mA
Load Regulation	ΔV _{OUT}	5.5V	1mA ≤ I _{OUT} ≤ 50mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	5.5V	No load		10	20	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		4.5V ≤ V _{IN} ≤ 12V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	5.5V	I _{OUT} =10mA 0℃ < T _a < 70℃		±0.5		mV/℃

KA100136, +3.6V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	5.6V	I _{OUT} = 10mA	3.42	3.6	3.78	V
Output Current	I _{OUT}	5.6V		60	100		mA
Load Regulation	ΔV _{OUT}	5.6V	1mA ≤ I _{OUT} ≤ 50mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	5.6V	No load		10	20	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		4.6V ≤ V _{IN} ≤ 12V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	5.6V	I _{OUT} =10mA 0℃ < T _a < 70℃		±0.6		mV/℃

High Driver Regulator

KA1001XX

■ Electrical Characteristics Ta = 25℃

KA100144, +4.4V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	6.4V	I _{OUT} = 10mA	4.18	4.4	4.62	V
Output Current	I _{OUT}	6.4V		60	100		mA
Load Regulation	ΔV _{OUT}	6.4V	1mA ≤ I _{OUT} ≤ 50mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	6.4V	No load		10	20	uA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		5.4V ≤ V _{IN} ≤ 12V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	6.4V	I _{OUT} =10mA 0℃ < T _a < 70℃		±0.7		mV/℃

KA100150, +5.0V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	7V	I _{OUT} = 10mA	4.75	5	5.25	V
Output Current	I _{OUT}	7V		100	150		mA
Load Regulation	ΔV _{OUT}	7V	1mA ≤ I _{OUT} ≤ 70mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	7V	No load		10	20	uA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		6V ≤ V _{IN} ≤ 15V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	7V	I _{OUT} =10mA 0℃ < T _a < 70℃		±0.75		mV/℃

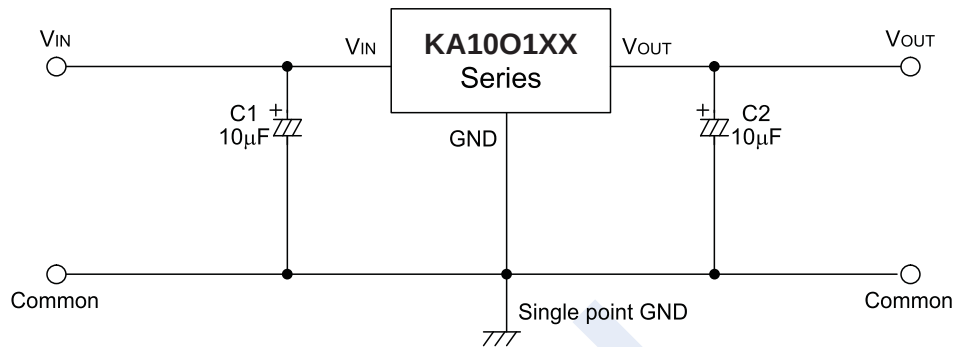
KA100180, +8.0V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V _{IN}	Conditions				
Output Voltage Tolerance	V _{OUT}	10V	I _{OUT} = 10mA	7.61	8	8.4	V
Output Current	I _{OUT}	10V		100	150		mA
Load Regulation	ΔV _{OUT}	10V	1mA ≤ I _{OUT} ≤ 70mA		60	150	mV
Voltage Drop	V _{DIF}		I _{OUT} = 1mA		100		mV
Current Consumption	I _{SS}	10V	No load		10	20	uA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		9V ≤ V _{IN} ≤ 20V I _{OUT} =1mA		0.2		%/V
Input Voltage	V _{IN}					24	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	10V	I _{OUT} =10mA 0℃ < T _a < 70℃		±1.2		mV/℃

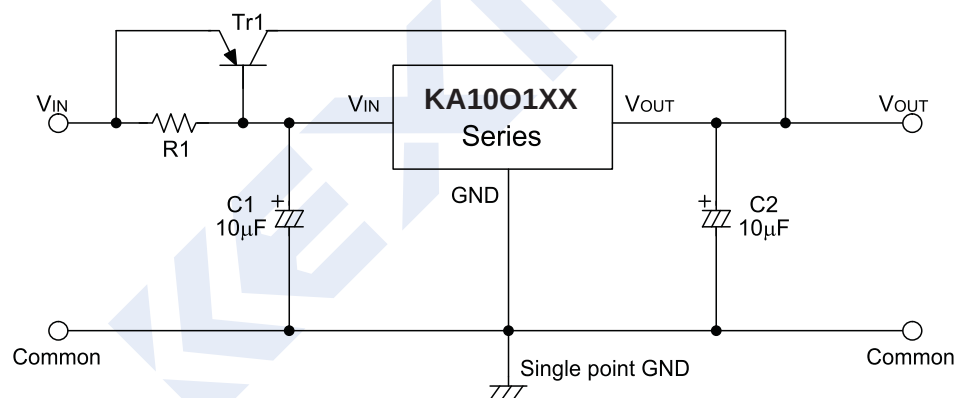
High Driver Regulator KA1001XX

■ Typical Characteristics

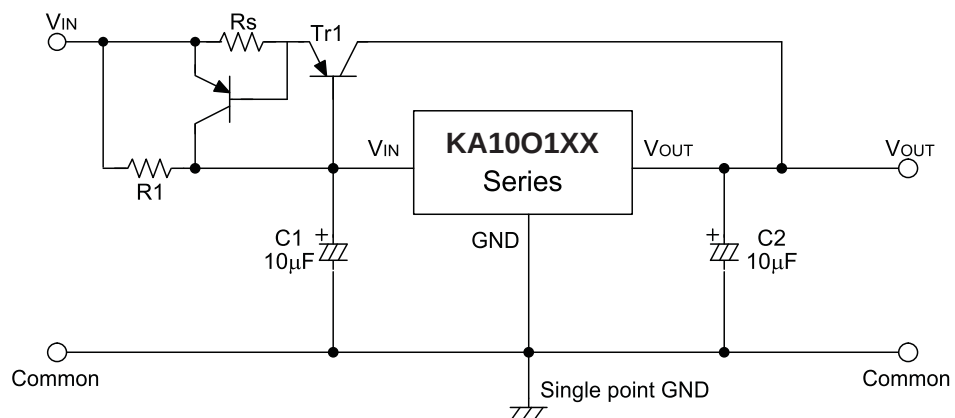
Basic circuit



High output current positive voltage regulator

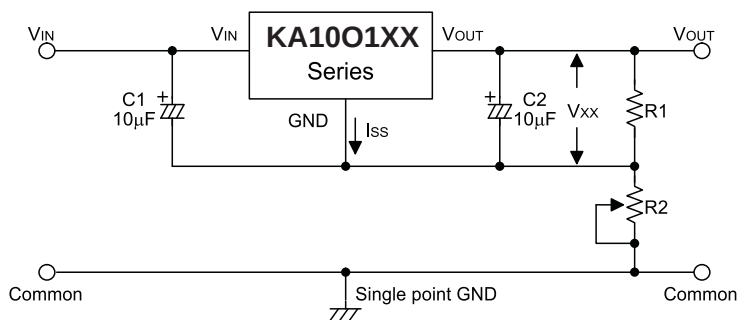


Short-Circuit protection for Tr1



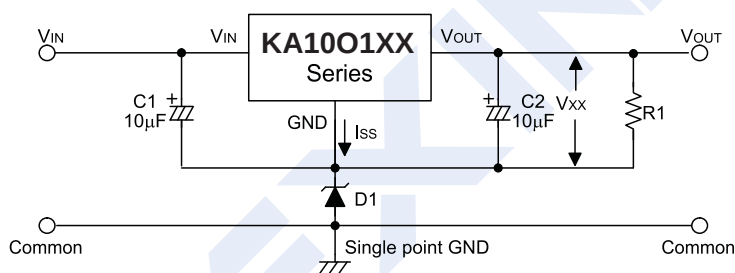
High Driver Regulator KA1001XX

■ Typical Characteristics



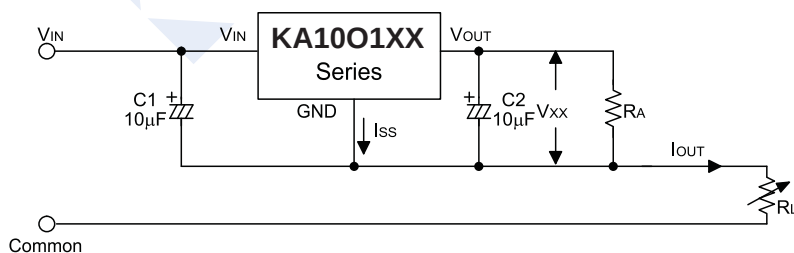
$$V_{OUT} = V_{XX} \left(1 + \frac{R_2}{R_1} \right) + I_{SS} R_2$$

Circuit for increasing output voltage



$$V_{OUT} = V_{XX} + V_{D1}$$

Constant current regulator



$$I_{OUT} = \frac{V_{XX}}{R_A} + I_{SS}$$

Dual supply

