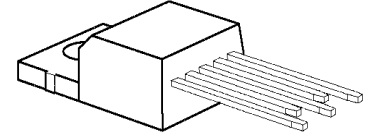


ILE4260-2

POWER VOLTAGE REGULATOR 5 V/500mA WITH LOW DROP-OUT VOLTAGE (analog to TLE4260 -2, Siemens)

ILE4260-2 (analog to TLE4260-2, Siemens) - single-chip integrated IC of power voltage regulator 5V/500 mA with low drop-out voltage implemented in 5-pin TO220AB/5 with external radiator. IC of power voltage regulator 5V/500mA is designed for creation of constant voltage of 5V with drop-out voltage less than 0.5V and load current up to 500 mA and used in electronic equipment power supplies. IC has protection against overvoltage of both positive and negative polarity, has internal limiting of maximum load current with temperature reset of output voltage.



P-TO220-5-2

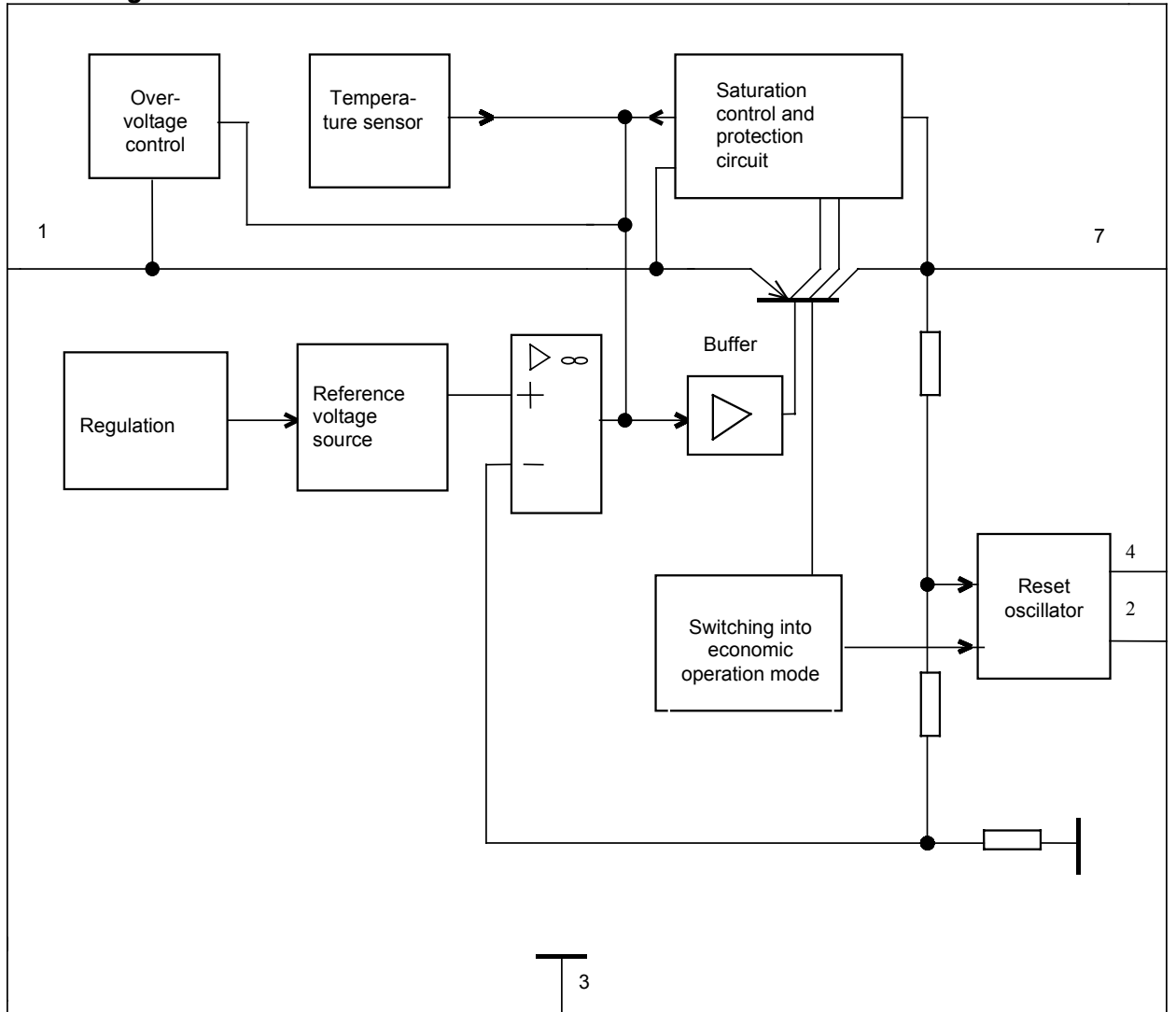
Features:

- High precision of output voltage $5V \pm 2\%$
- Low drop-out voltage
- Low consumption current
- Low starting consumption current
- Overheat embedded protection
- Protection against outputs reversed polarity
- Input voltage up to 42V
- Internal limiting of maximum load current with temperature output voltage reset
- Overvoltage protection (input voltage more than 42 V)
- Chip temperature range from minus 40 to +125°C.

ILE4260-2 pins description

Pin No.	Symbol	Description in catalog	Description
1	U_I	Input voltage	Input
2	QURES	Reset output	Reset output
3	GND	Ground	Common
4	DRES	Reset delay	Reset delay output
5	U	5-V output voltage	Output

Block diagram



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MAXIMUM RATINGS

Parameter	Unit	Maximum ratings		Absolute maximum ratings	
		min	max	min	max
Junction temperature, T_J	$^{\circ}\text{C}$	-40	125	-40	150
Storage temperature, T_{stg}	$^{\circ}\text{C}$	-	-	-50	150
Input voltage, U_I	V	-	32	-42	42
Input voltage, $U_{I(t)}$, $t \leq 400$ ms	V	-	-	-	65
Input current, I_I	A	-	1.6	-	1.6
Reset output voltage (pin 2), U_R	V	0.4	42	-0.3	42
Current on reset output (pin 2), I_R	A	-	Internally limited	-	Internally limited
Current on output "ground" (pin 3), I_{GND}	A	-0.5	-	-0.5	-
"Reset delay" output voltage (pin 4), U_D	V	0.4	42	-0.3	42
Current on output "Reset delay" (pin 4), I_D	A	-	Internally limited	-	Internally limited
difference between input and output voltages, $U_I - U_Q$	V	-	U_I	-5.25	U_I
Output current (on pin 5)	A	-	1.4	-	1.4
Resistance junction-case, R_{thJC}	$^{\circ}\text{C/W}$	-	3	-	3
Resistance junction-ambient, R_{thJA}	$^{\circ}\text{C/W}$	-	65	-	65

Typical values of electrical parameters ($V_I=13,5$ V, $T_J=25^{\circ}\text{C}$, unless otherwise is specified)

Parameter, Unit	Symbol	Test conditions	Typical value
Pulse smoothing factor, dB	SVR	$f = 100$ Hz, $U_R = 0.5U_{\text{PP}}$, $I_Q = 0$ mA	54
Temperature drift of output voltage, $1/^{\circ}\text{C}$	α_{VQ}	-	2×10^4
Reset output turn-on delay, ms	t_D	$C_D=100$ nF	25
Reset output turn-off delay, mks	t_t	$C_D=100$ nF	5
Hysteresis of turn-on input voltage, V	ΔU_I	-	3

Electrical parameters ($T_a=25^{\circ}\text{C}$) ($V_I=13.5$ V, $T_J=25^{\circ}\text{C}$, unless otherwise is specified)

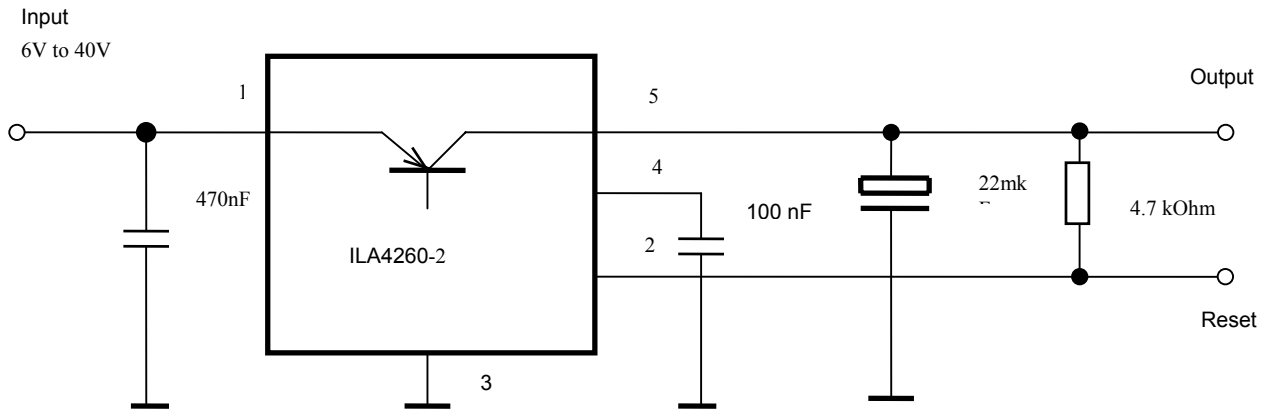
Parameter, unit	Symbol	Test conditions	Value		$T_J, ^{\circ}\text{C}$
			min	max	
Normal operation mode					
Output voltage, V	U_Q	$I_Q = 250$ mA	4.95	5.05	+20...+125
Output voltage, V	U_Q	$I_Q = 250$ mA	4.90	5.10	-40...+20
Short-circuit current, mA	I_{sc}	$U_I = 17$ V $V_Q=0$ V	500		

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Consumption current, mA, $I_q = I_I - I_Q$	I_q	$6V \leq U_I \leq 28V$ $I_Q = 150 \text{ mA}$		10	
		$6V \leq U_I \leq 28V$ $I_Q = 500 \text{ mA}$		65	
		$U_I \leq 6V$ $I_Q = 500 \text{ mA}$		80	
		$I_Q = 0 \text{ mA}$		2.0	
Drop-out voltage, V	U_{Dr}	$I_Q = 0.5A$		0.5	
		$I_Q = 0.15A$		0.3	
Change of output voltage versus load current change, mV	$\Delta U_{Q(I)}$	$5\text{mA} \leq I_O \leq 500\text{mA}$		35	
Change of output voltage versus input voltage change, mV	$\Delta U_{Q(U)}$	$6V \leq U_I \leq 28V$ $I_Q = 100\text{mA}$		50	
		$6V \leq U_I \leq 16V$ $I_Q = 100\text{mA}$		25	
Parameters of reset oscillator					
Threshold voltage of Reset output turn-on Reset, in % from U_Q	U_{RT}	$I_Q > 500 \text{ mA}$ $U_I = 6V$	94	97	
Saturation voltage, V	U_R	$R_R = 1.8 \text{ kOhm}$		0.4	
Saturation voltage, mV	U_C	$U_I = 4.5 \text{ V}$		100	
Reverse current, mA	I_R	$U_R = 5V$		1	
Charge current, mA	I_D	-	7	13	
Saturation voltage, V	U_R	$I_R = 3 \text{ mA}, U_I = 4.5V$		0.4	
Reverse current, mA	I_R	$U_R = 5V$		1	
Charge current, mA	I_D	-	7	13	
Turn-on threshold, V	U_{ST}	-	0.3	1.3	
Threshold voltage of turn- on delay, V	U_{DT}	-	2.15	2.75	
General data					
Turn-off input voltage, V	U_{Ioff}	$I_Q < 1 \text{ mA}$	40	45	
Reverse output current, mA	I_{QR}	$U_Q = 5V, U_I = \text{open}$		2.5	
Leakage current, mA	I_{QS}			500	

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STANDARD APPLICATION CIRCUIT OF IC ILE4260-2



STANDARD OPERATION DIAGRAM OF IC ILE4260-2

