

μPC141 / 305

Precision Positive Voltage Regulator

GENERAL DESCRIPTION

The μPC141/305 are precision Voltage Regulator for a wide range of applications from digital power supplies to high stability analog circuitry.

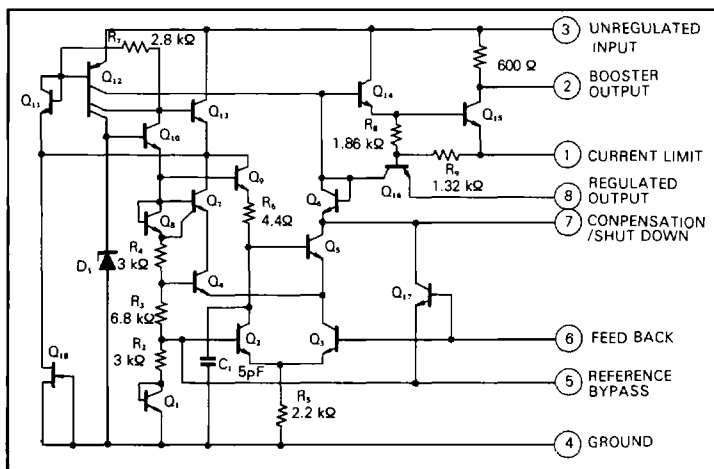
Fast response to both load and line transients, small standby power dissipation and freedom from oscillations with varying resistive load and reactive load make this type of regulator ideal for general purpose power supply systems.

Two kinds of ICs are available according to reliability the μPC141 for industry, the μPC305 for commercial.

FEATURES

- Output Voltage adjustable from 4.5 V to 30 V
- Output Currents in excess of 10 A possible by adding external transistors
- Load Regulation better than 0.1% full load with current Limiting
- DC Line Regulation guaranteed at 0.03%/V
- LM305 Direct Replacement

EQUIVALENT CIRCUIT



ORDERING INFORMATION

μPC141D



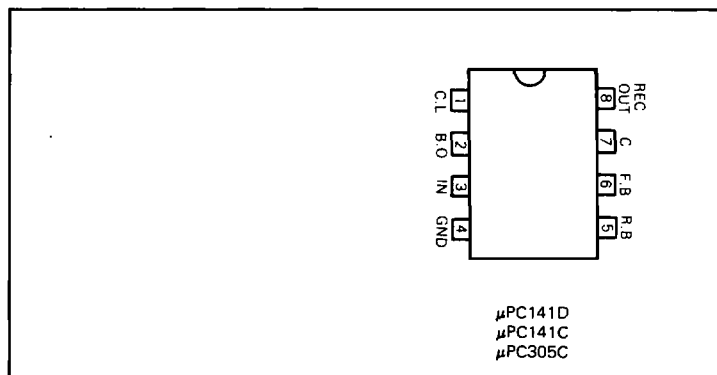
8 pin Ceramic DIP
(Dual In-Line Package)

μPC141C/μPC305C



8 pin Plastic Molded DIP
(Dual In-Line Package)

CONNECTION DIAGRAM (Top View)



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER			μPC141	μPC305	UNIT
Input Voltage			40	40	V
Input Output Voltage Differential			40	40	V
Peak Output Current			50	50	mA
Power Dissipation*	D	Package	500	—	mW
	C	Package	350	350	
Operating Temperature Range	D	Package	−20 to +80	—	°C
	C	Package	−20 to +70	0 to 70	
Storage Temperature Range	D	Package	−55 to +150	—	°C
	C	Package	−55 to +125	−55 to +125	

* See thermal information in chapter 11.

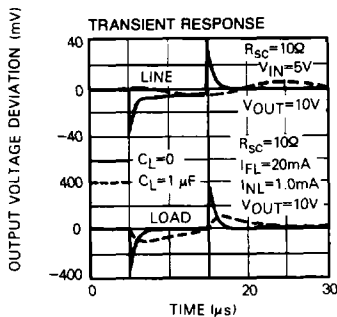
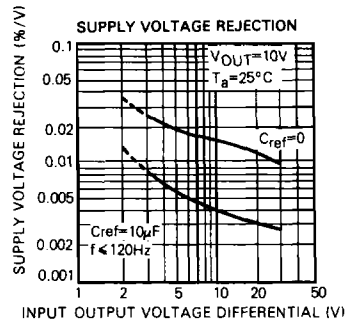
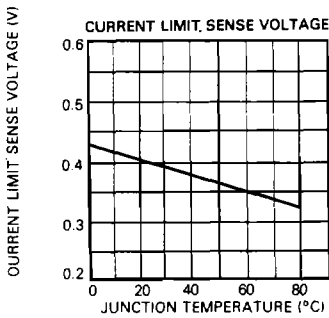
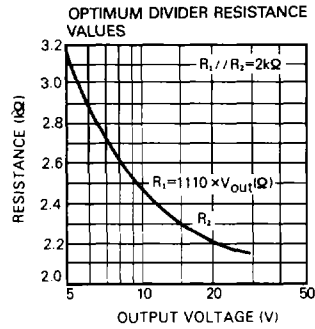
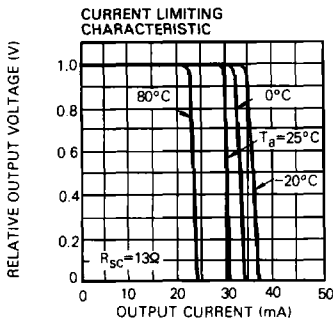
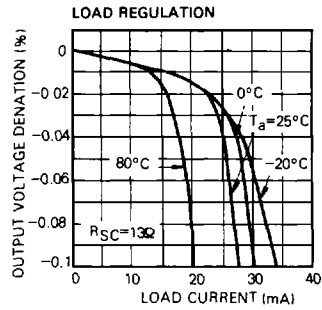
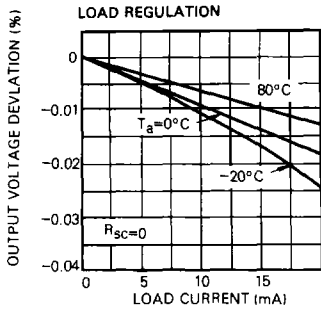
ELECTRICAL CHARACTERISTICS

CHARACTERISTIC		MIN.	TYP.	MAX.	UNIT	CONDITIONS
Input Voltage Range		8.0		40	V	
Output Voltage Range		4.5		30	V	
Input Output Voltage Differential		3.0		30	V	
Load Regulation			0.02	0.05	%	$0 \leq I_o \leq 12 \text{ mA}, R_{sc} = 18 \Omega$
Line Regulation			0.025	0.06	%/V	$V_{IN} - V_{OUT} \leq 5 \text{ V}$
			0.015	0.03	%/V	$V_{IN} - V_{OUT} > 5 \text{ V}$
Ripple Rejection			0.003		%/V	$C_{REF} = 10 \mu\text{F}, f = 120 \text{ Hz}$
Temperature Stability	141 A/D		0.3	1.0	%	$-20^\circ\text{C} \leq T_a \leq 80^\circ\text{C}$
	141 C		0.3	1.0	%	$-20^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$
	305C		0.3	1.0	%	$0^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$
Feedback Sense Voltage		1.65	1.8	1.90	V	
Standby Current Drain			0.005		%	$10 \text{ Hz} \leq f \leq 10 \text{ kHz}, C_{REF} = 0$
			0.002		%	$C_{REF} = 0.1 \mu\text{F}$
Long Term Stability			0.1		%	
Standby Current Drain			1.0	2.0	mA	$V_{IN} = 40 \text{ V}$

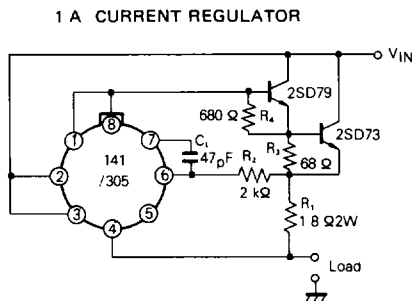
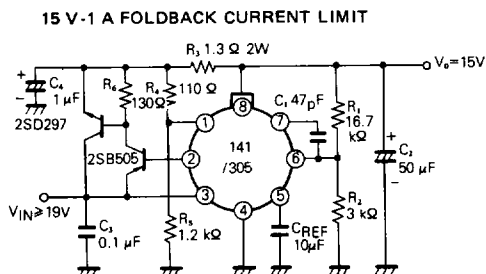
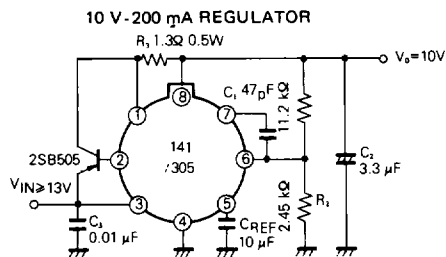
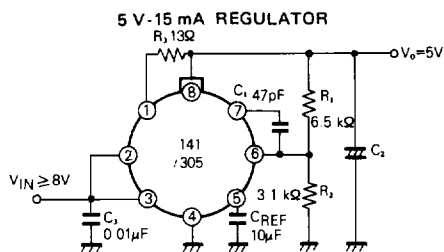
C_{REF} : Bypass capacitor of Pin 5

R_{sc} : Output current sense resistor

TYPICAL PERFORMANCE CHARACTERISTICS (T_a = 25°C)



APPLICATIONS



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