

Negative Three Terminal Voltage Regulators

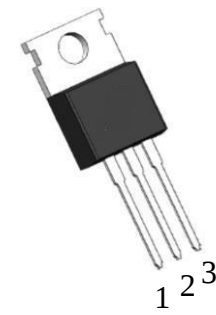
负三端稳压管

RCP79XX

产品特性 Features

输出电压 Output Voltage	稳压管 Regulators
-5V	RCP7905
-12V	RCP7912
-15V	RCP7915
最大输出电流 Max Output Current	1.5A
过载保护 Internal thermal overload prection	
短路电流限制 Internal short-current limiting	
输出端最大安全工作区域 Output transistor safe-area compensation	
输出电压精度在 4%以内 Output voltage offered in 4% tolerance	

封装形式 Package



1:GND 2:Input 3:Output

功能图 Functional diagram

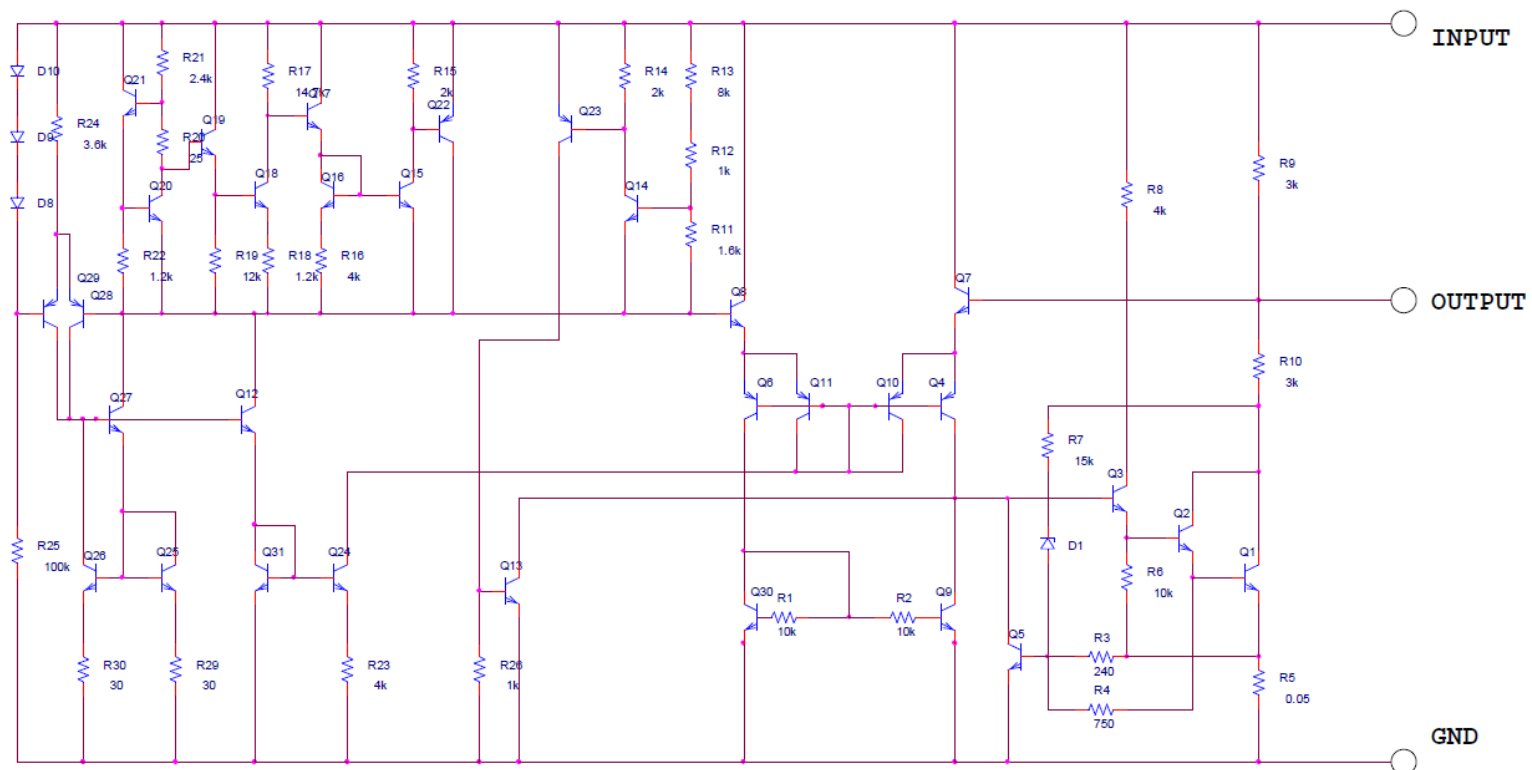
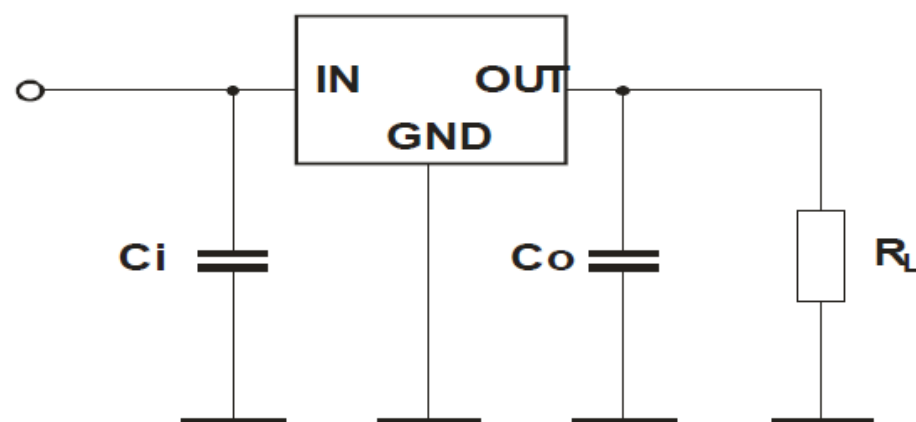


Fig.1

典型应用电路 Typical application circuit



$$C_i = 0.33\mu F, C_o = 0.1\mu F$$

Fig.2

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绝对最大额定值 **Absolute Maximum Rating** ($T_a = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit		Unit
输入电压 Input Voltage	V_{in}	for -5V to -12V	-35	V
		-15V	-40	
功率损耗 Power Dissipation	P_D	Internal Limited		W
结温 Junction Temperature	T_j	+125		$^{\circ}\text{C}$
存储温度 Storage Temperature Range	T_{STG}	-65~+150		$^{\circ}\text{C}$
结-壳的热阻 Thermal Resistance -Junction to Case	$R_{\theta JC}$	5		$^{\circ}\text{C/W}$
结-环境的热阻 Thermal Resistance -Junction to Ambient	$R_{\theta JA}$	60		$^{\circ}\text{C/W}$

RCP7905 电参数特性 Electrical Characteristics

($V_{in} = -10\text{V}$, $I_{out} = 500\text{mA}$, $0^{\circ}\text{C} \leq T_j \leq 125^{\circ}\text{C}$, $C_{in} = 0.33\mu\text{F}$, $C_{out} = 0.1\mu\text{F}$; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
输出电压 Output voltage	V_{out}	$T_j = 25^{\circ}\text{C}$	-4.80	-5	-5.20	V
		$-7.0\text{V} \leq V_{in} \leq -20\text{V}$, $5\text{mA} \leq I_{out} \leq 1\text{A}$, $P_D \leq 15\text{W}$	-4.75	-5	-5.25	
线性调节 Line Regulation	REGline	$T_j = 25^{\circ}\text{C}$	$-7.0\text{V} \leq V_{in} \leq -25\text{V}$		8	mV
			$-8\text{V} \leq V_{in} \leq -12\text{V}$		2	
负载调节 Load Regulation	REGload	$T_j = 25^{\circ}\text{C}$	$5\text{mA} \leq I_{out} \leq 1.5\text{A}$		35	
			$250\text{mA} \leq I_{out} \leq 750\text{mA}$		10	50
静态电流 Quiescent Current	I_q	$I_{out} = 0$, $T_j = 25^{\circ}\text{C}$	--	3.2	8	mA
静态电流变化 Quiescent Current Change	ΔI_q	$-7.0\text{V} \leq V_{in} \leq -25\text{V}$	--	--	1.3	
		$5\text{mA} \leq I_{out} \leq 1\text{A}$	--	--	0.5	
输出电压纹波 Output Noise Voltage	V_n	$10\text{Hz} \leq f \leq 100\text{kHz}$, $T_j = 25^{\circ}\text{C}$	--	40	--	μV
浪涌衰减 Ripple Rejection Ratio	RR	$f = 120\text{Hz}$, $\Delta V_i = 10\text{V}$	62	74	--	dB
衰减电压 Voltage Drop	V_{drop}	$I_{out} = 1\text{A}$, $T_j = 25^{\circ}\text{C}$	--	2	--	V
短路电流 Output Short Circuit Current	I_{os}	$T_j = 25^{\circ}\text{C}$	--	200	--	mA
峰值电流 Peak Output Current	$I_{o peak}$	$T_j = 25^{\circ}\text{C}$	--	2.2	--	A
输出电压特性 Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out} = 5\text{mA}$, $0^{\circ}\text{C} \leq T_j \leq 125^{\circ}\text{C}$	--	-0.2	--	$\text{mV}/^{\circ}\text{C}$

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RCP7912 电参数特性 Electrical Characteristics

($V_{in} = -19V$, $I_{out} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in} = 0.33\mu F$, $C_{out} = 0.1\mu F$; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
输出电压 Output voltage	Vout	$T_j = 25^{\circ}C$	-11.5	-12	-12.5	V
		$-15.5V \leq V_{in} \leq -27V$, $5mA \leq I_{out} \leq 1A$, $PD \leq 15W$	-11.4	-12	-12.6	
线性调节 Line Regulation	REGline	$T_j = 25^{\circ}C$	$-14.5V \leq V_{in} \leq -30V$ -- 14 $-16V \leq V_{in} \leq -22V$ -- 5		240	mV
负载调节 Load Regulation	REGload	$T_j = 25^{\circ}C$	$5mA \leq I_{out} \leq 1.5A$ -- 40 $250mA \leq I_{out} \leq 750mA$ -- 10		240	
静态电流 Quiescent Current	Iq	$I_{out} = 0$, $T_j = 25^{\circ}C$	--	3.2	8	mA
静态电流变化 Quiescent Current Change	ΔIq	$-14.5V \leq V_{in} \leq -30V$ -- $5mA \leq I_{out} \leq 1A$ --	--	--	1.3	
输出电压纹波 Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	40	--	μV
浪涌衰减 Ripple Rejection Ratio	RR	$f = 120Hz$, $\Delta V_i = 10V$	62	74	--	dB
衰减电压 Voltage Drop	Vdrop	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V
短路电流 Output Short Circuit Current	Ios	$T_j = 25^{\circ}C$	--	200	--	mA
峰值电流 Peak Output Current	I _{o peak}	$T_j = 25^{\circ}C$	--	2.2	--	A
输出电压特性 Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out} = 5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-0.2	--	mV/ $^{\circ}C$

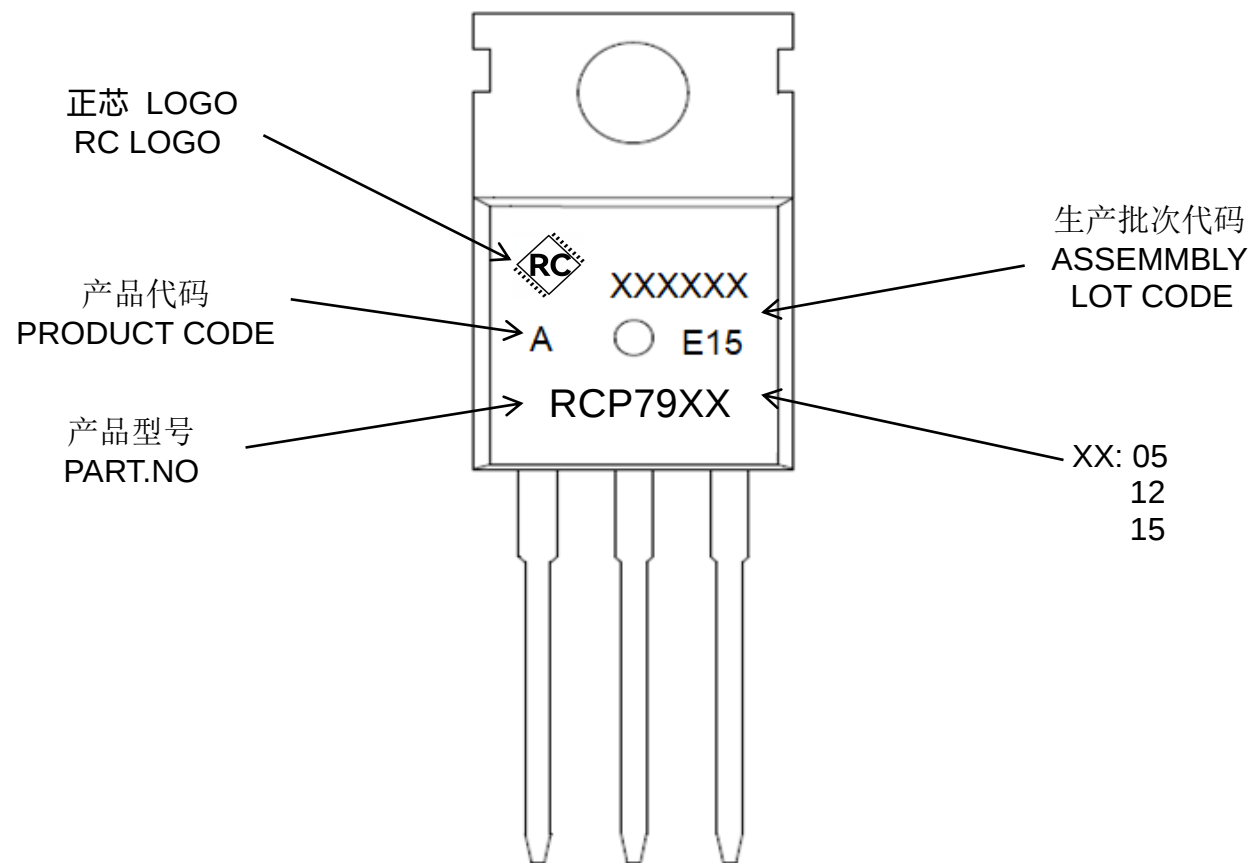
RCP7915 电参数特性 Electrical Characteristics

($V_{in} = -23V$, $I_{out} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in} = 0.33\mu F$, $C_{out} = 0.1\mu F$; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
输出电压 Output voltage	Vout	$T_j = 25^{\circ}C$	-14.4	-15	-15.6	V
		$-18V \leq V_{in} \leq -30V$, $5mA \leq I_{out} \leq 1A$, $PD \leq 15W$	-14.25	-15	-15.75	
线性调节 Line Regulation	REGline	$T_j = 25^{\circ}C$	$-17.5V \leq V_{in} \leq -30V$ -- 15 $-20V \leq V_{in} \leq -26V$ -- 5		300	mV
负载调节 Load Regulation	REGload	$T_j = 25^{\circ}C$	$5mA \leq I_{out} \leq 1.5A$ -- 50 $250mA \leq I_{out} \leq 750mA$ -- 10		300	
静态电流 Quiescent Current	Iq	$I_{out} = 0$, $T_j = 25^{\circ}C$	--	3.2	8	mA
静态电流变化 Quiescent Current Change	ΔIq	$-7.0V \leq V_{in} \leq -25V$ -- $5mA \leq I_{out} \leq 1A$ --	--	--	1.3	
输出电压纹波 Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	40	--	μV
浪涌衰减 Ripple Rejection Ratio	RR	$f = 120Hz$, $\Delta V_i = 10V$	62	74	--	dB
衰减电压 Voltage Drop	Vdrop	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V
短路电流 Output Short Circuit Current	Ios	$T_j = 25^{\circ}C$	--	200	--	mA
峰值电流 Peak Output Current	I _{o peak}	$T_j = 25^{\circ}C$	--	2.2	--	A
输出电压特性 Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out} = 5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-0.2	--	mV/ $^{\circ}C$

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印记 Marking:



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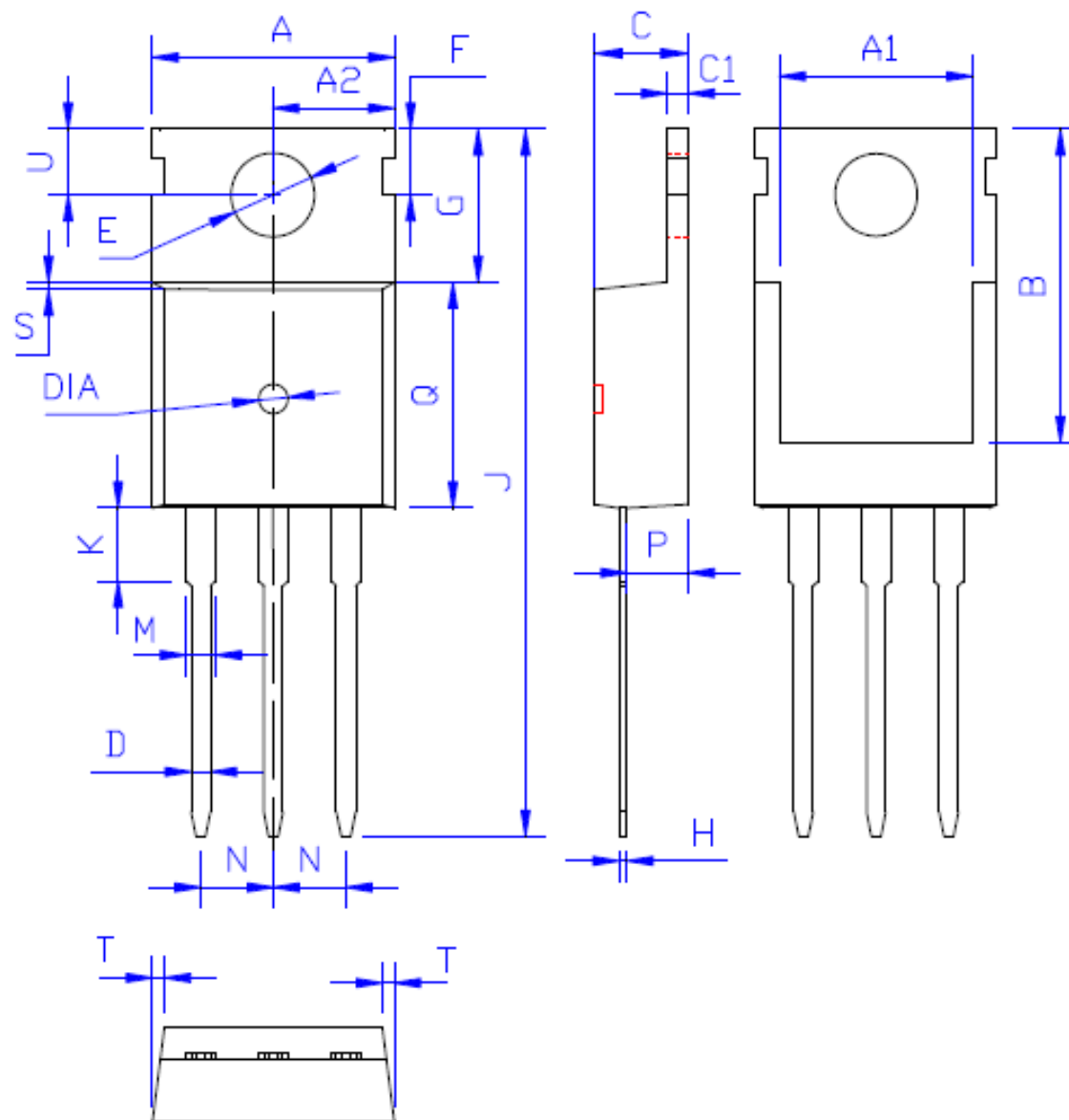
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外形尺寸:

Package Dimension:

TO-220



DIM	MILLIMETERS
A	10.00±0.30
A1	8.00±0.30
A2	5.00±0.30
B	13.20±0.40
C	4.50±0.20
C1	1.30±0.20
D	0.80±0.20
E	3.60±0.20
F	3.00±0.30
G	6.60±0.40
H	0.50±0.20
J	28.88±0.50
K	3.00±0.30
M	1.30±0.30
N	Typical 2.54
P	2.40±0.40
Q	9.20±0.40
S	0.25±0.15
T	0.25±0.15
U	2.80±0.30
DIA	宽 1.50±0.10 深 0.50 MAX

(Unit: mm)