

VOLTAGE REGULATORS RX5RA Series

■ OUTLINE

The RX5RA series, developed with C-MOS processing technology, are highly accurate, low-power-consumption, fixed three terminal voltage regulators. They include reference voltage supply, error amplifier, control transistor, and resistor network to control the output voltage. The output voltage is fixed in the IC.

The RX5RA series are both available in two different types of package : mini-power-mold and TO-92.

■ FEATURES

- Extremely low power consumption TYP. $1.0\mu\text{A}$ $V_{\text{out}} = 3.0\text{V}$
- Small input-output voltage difference TYP. 60mV $I_{\text{out}} = 1.0\text{mA}$
- Low temperature coefficient for output voltage TYP. $\pm 100\text{PPM}/^{\circ}\text{C}$
- Stable input rate TYP. $0.1\%/V$
- Accurate output voltage $\pm 2.5\%$
- Variety of output voltage levels 0.1V step
- Compact package TO-92, mini power mold

■ APPLICATIONS

- Constant-voltage power supply for battery-powered devices
- Constant-voltage power supply for camera, communication, and video equipment
- Stable standard voltage supply

■ BLOCK DIAGRAMS

Type RX5RAXXXX
(positive-voltage regulator)

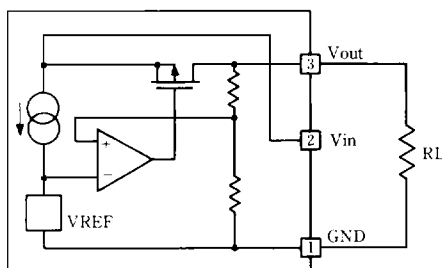


Figure 1

■ SELECTION GUIDE

You can define the output voltage and package of the RX5RA series.
 The devices are defined by the following characters.

R X 5 R A XXXX ← Type number
 ↑ ↑ ↑ ↑
 a b c d

No.	Meaning
a	Defines the packaging type E : TO-92 H : Mini power mold (SOT-89)
b	Defines output voltage (Vout) The range for Vout is 2.0V to 6.0V in units of 0.1V, with an accuracy of ±2.5%.
c	Defines the output current type A : Standard type
d	Defines the packaging method for shipment A-T1 : Taping-T1 type (See Fig.2) A-T2 : Taping-T2 type (See Fig.2) A-RF : Taping-RF type (See Fig.2) A-RR : Taping-RR type (See Fig.2) B : Gluing (Gluing is for mini power mold package as a sample) C : Electric conductive bagging (for TO-92)

Table 1

■ **ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	RATINGS	UNITS
Input Voltage	Vin	+12	V
Output Current	Iout	150	mA
Output Voltage	Vout	Vin+0.3~-0.3	V
Power Dissipation	Pd	300	mW
Operating Temperature Range	Topr	-30~+80	°C
Storage Temperature Range	Tstg	-40~+125	
Soldering Temperature	Tsolder	260°C 10Sec	

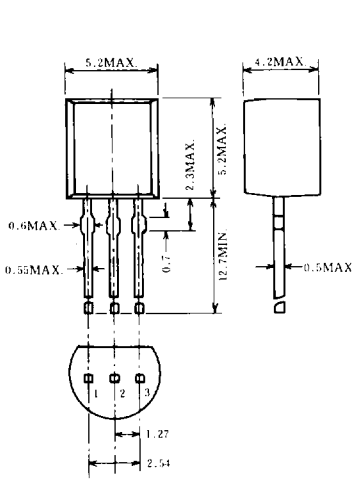
■ **ELECTRICAL CHARACTERISTICS**

Topr : 25°C

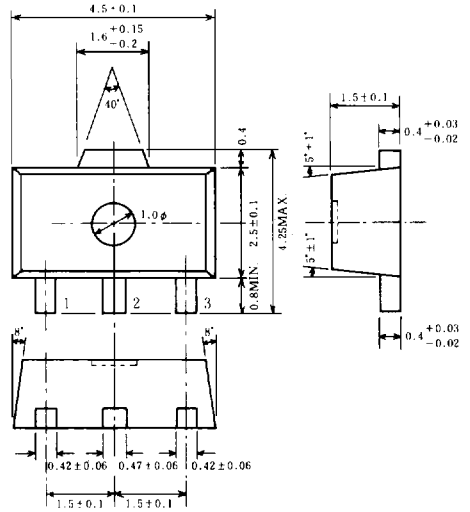
PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vout	Iout = 10mA	(Vout) × 0.975		(Vout) × 1.025	V
Output Current	Iout	Vin - Vout = 2.0V Vout = 3.0V Vout = 5.0V		40 60		mA
Load Regulation	ΔVout	Vin - Vout = 2.0V Vout = 3.0V 1mA ≤ Iout ≤ 20mA Vout = 5.0V 1mA ≤ Iout ≤ 40mA		60 40		mV
Input-Output Voltage Difference	Vdif	Iout = 1mA Vout = 3.0V = 5.0V		60 30		mV

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{ss}	$V_{in} - V_{out} = 2.0V$ $V_{out} = 3.0V$ $\angle = 5.0V$		1.1 1.3	3.3 3.9	μA
Line Regulation	$\frac{\Delta V_{out}}{V_{out} \cdot \Delta V_{in}}$	$I_{out} = 1mA$ $V_{out} + 0.5V \leq V_{in} \leq 10V$		0.1		%/V
Input Voltage	V_{in}				10	V
Temperature Coefficient	$\Delta V_{out} / \Delta T_{opr}$	$I_{out} = 10mA$ $-30^{\circ}C \leq T_{opr} \leq 80^{\circ}C$		± 100		PPM/ $^{\circ}C$

■ PACKAGE INFORMATION



TO-92



mini-power-mold

1	GND
2	V_{in}
3	V_{out}

