



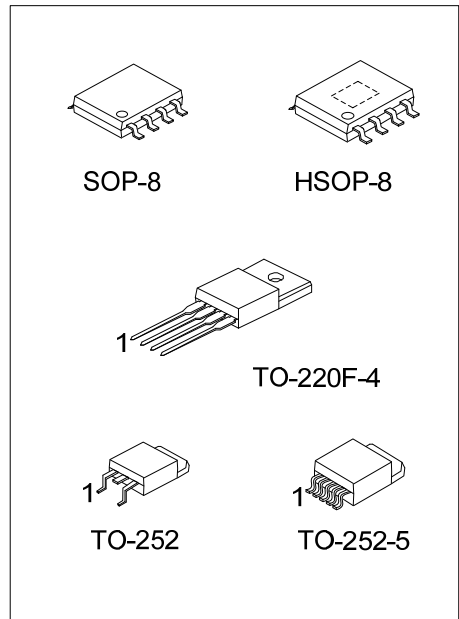
## RXXLD10

## LINEAR INTEGRATED CIRCUIT

### LOW VOLTAGE OPERATION LOW POWER-LOSS VOLTAGE REGULATORS

#### FEATURES

- \* Operating Under Low Voltage Range (Minimum: 2.35V)
- \* Low Dissipation Current
- \* Built-in Overcurrent Protection and Over Temperature Protection Functions



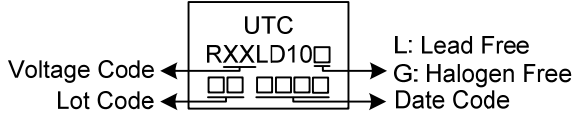
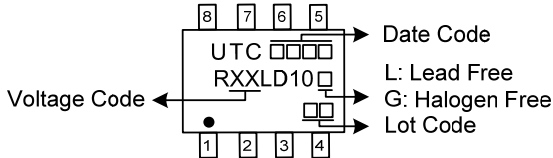
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
RXXLD10L-TF4-T	RXXLD10G-TF4-T	TO-220F-4	I	F	O	G	-	-	-	-	Tube
RXXLD10L-TN3-R	RXXLD10G-TN3-R	TO-252	I	G	O	-	-	-	-	-	Tape Reel
RXXLD10L-TN5-R	RXXLD10G-TN5-R	TO-252-5	I	F	O	N	G	-	-	-	Tape Reel
RXXLD10L-S08-R	RXXLD10G-S08-R	SOP-8	F	I	O	N	G	G	G	G	Tape Reel
RXXLD10L-SH2-R	RXXLD10G-SH2-R	HSOP-8	F	I	O	N	G	G	G	G	Tape Reel

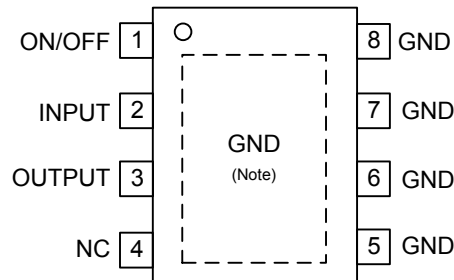
Note: Pin Assignment: I: INPUT F: ON/OFF O: OUTPUT N: NC G: GND

<p>RXXLD10G-TF4-T</p> <p>(1) Packing Type (2) Package Type (3) Green Package (4) Voltage Code</p>	<p>(1) T: Tube, R: Tape Reel (2) TF4: TO-220F-4, TN3: TO-252, TN5: TO-252-5 S08: SOP-8, SH2: HSOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free (4) XX: refer to Marking Information</p>
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### MARKING INFORMATION

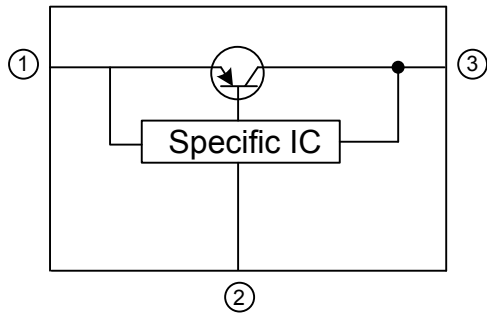
PACKAGE	VOLTAGE CODE	MARKING
TO-220F-4 TO-252 TO-252-5	15:1.5V 18:1.8V 20:2.0V 25:2.5V	
SOP-8 HSOP-8	03:3.0V 33:3.3V 05:5.0V 12:12V	

### PIN CONFIGURATION (FOR HSOP-8)

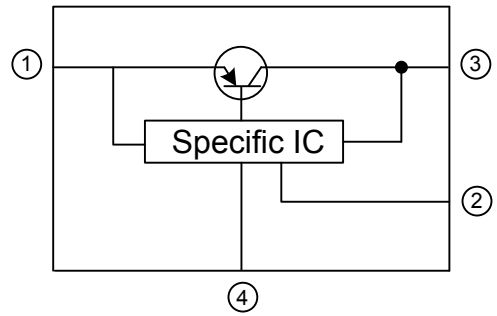


Note: Connect exposed pad to GND.

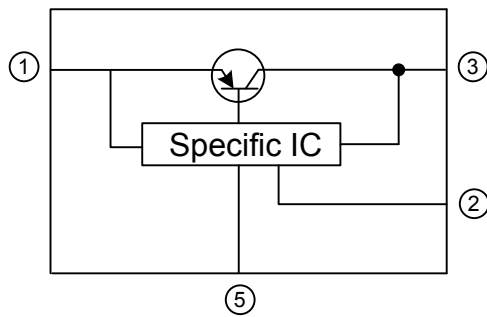
### ■ BLOCK DIAGRAM



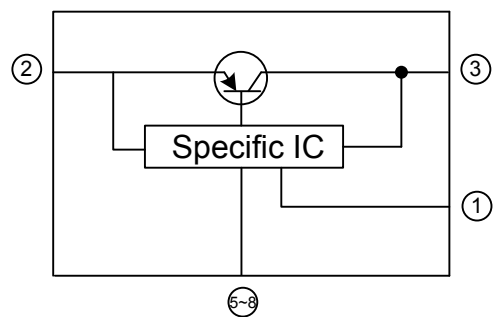
TO-252



TO-220F-4



TO-252-5



SOP-8/HSOP-8

■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		V <sub>IN</sub>	18	V
ON/OFF Control Terminal Voltage (Note 2)		V <sub>C</sub>	18	V
Output Current		I <sub>OUT</sub>	1.0	A
Power Dissipation (with infinite heat sink)	TO-220F-4/TO-252	P <sub>D</sub>	8	W
	TO-252-5			
	SOP-8			
	HSOP-8			
Junction Temperature		T <sub>J</sub>	+150	°C
Operating Temperature		T <sub>OPR</sub>	-40 ~ +85	°C
Storage Temperature		T <sub>STG</sub>	-40 ~ +150	°C

Note 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. All are open except GND and applicable terminals.

■ ELECTRICAL CHARACTERISTICS

(V<sub>IN</sub> = V<sub>OUT(TYP)</sub>+1V, I<sub>OUT</sub> = 0.5A, V<sub>C</sub> = 2.7V, T<sub>A</sub> = 25°C, unless otherwise specified.)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	R15LD10	V <sub>IN</sub>		2.35		18	V
	R18LD10			2.35		18	
	R20LD10			V <sub>OUT</sub> +0.5		18	
	R25LD10			V <sub>OUT</sub> +0.5		18	
	R03LD10			V <sub>OUT</sub> +0.5		18	
	R33LD10			V <sub>OUT</sub> +0.5		18	
	R05LD10			V <sub>OUT</sub> +0.5		18	
	R12LD10			V <sub>OUT</sub> +0.5		18	
Output Voltage	R15LD10	V <sub>OUT</sub>		1.45	1.5	1.55	V
	R18LD10			1.75	1.8	1.85	
	R20LD10			1.95	2.0	2.05	
	R25LD10			2.438	2.5	2.562	
	R03LD10			2.925	3	3.075	
	R33LD10			3.218	3.3	3.382	
	R05LD10			4.875	5	5.125	
	R12LD10			11.7	12	12.3	
Load Regulation		ΔV <sub>OUT</sub>	I <sub>OUT</sub> = 5mA ~ 1A		0.2	2	%
Line Regulation		ΔV <sub>OUT</sub>	V <sub>IN</sub> = V <sub>O(TYP)</sub> +1V~V <sub>O(TYP)</sub> +6V I <sub>OUT</sub> = 5mA		0.1	1	%
Voltage for Control (Note 1)	ON	V <sub>C(ON)</sub>		2			V
	OFF	V <sub>C(OFF)</sub>				0.8	
Current for Control	ON	I <sub>C(ON)</sub>				200	μA
	OFF	I <sub>C(OFF)</sub>	V <sub>C</sub> = 0.4V			2	
Quiescent Current		I <sub>Q</sub>	I <sub>OUT</sub> = 0A		1	2	mA
Output Off-State Dissipation Current		I <sub>QS</sub>	I <sub>OUT</sub> = 0A, V <sub>C</sub> = 0.4V			5	μA
Dropout Voltage(Note 2)		V <sub>D</sub>	I <sub>OUT</sub> = 1A		0.2	0.5	V
			I <sub>OUT</sub> = 1A (For R12LD10)		0.2	0.75	
Temperature Coefficient of Output Voltage		T <sub>C</sub> V <sub>O</sub>	T <sub>J</sub> = 0 ~ 125°C, I <sub>OUT</sub> = 5mA		±0.01		%/°C
Ripple Rejection		RR		45	60		dB

Notes: 1. In case of opening control terminal pin 2, output voltage turns off.

2. Input voltage shall be the value when output voltage is 95% in comparison with the initial value.

## ■ TEST CIRCUIT

TO-220F-4 Package

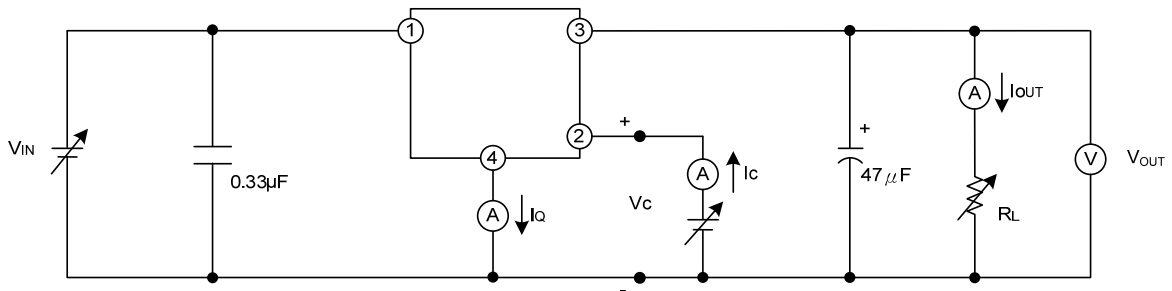


Fig.1

TO-252 Package

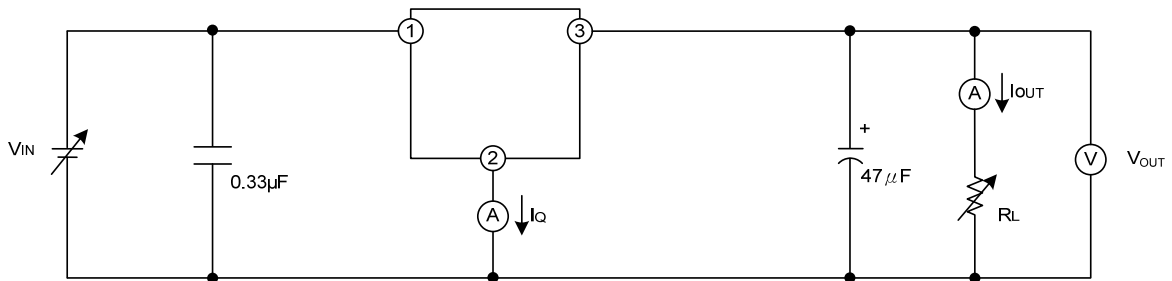


Fig.2

TO-252-5 Package

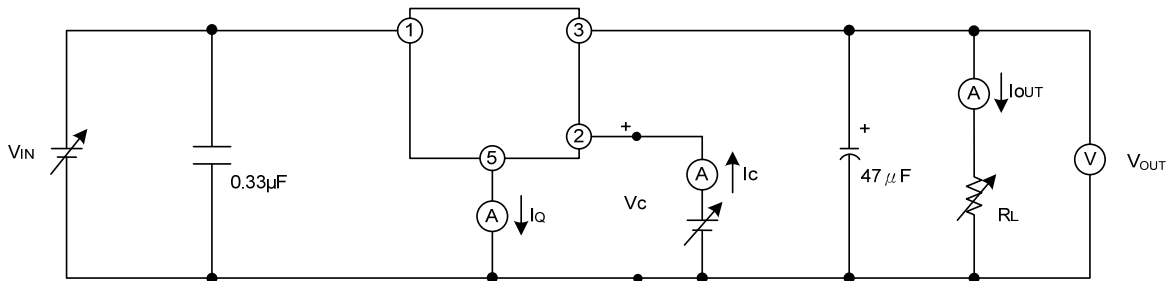


Fig.3

SOP-8/HSOP-8 Package

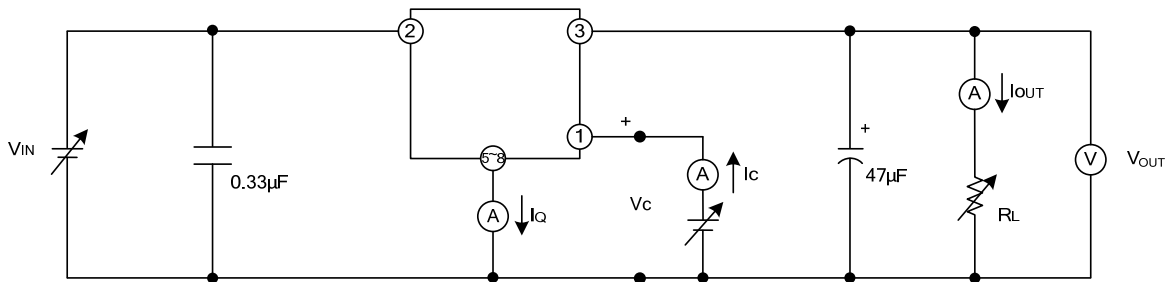
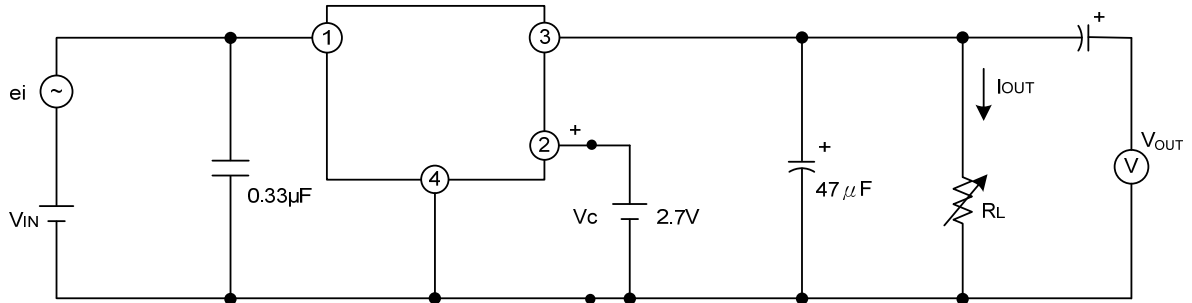


Fig. 4

## ■ TEST CIRCUIT (Cont.)

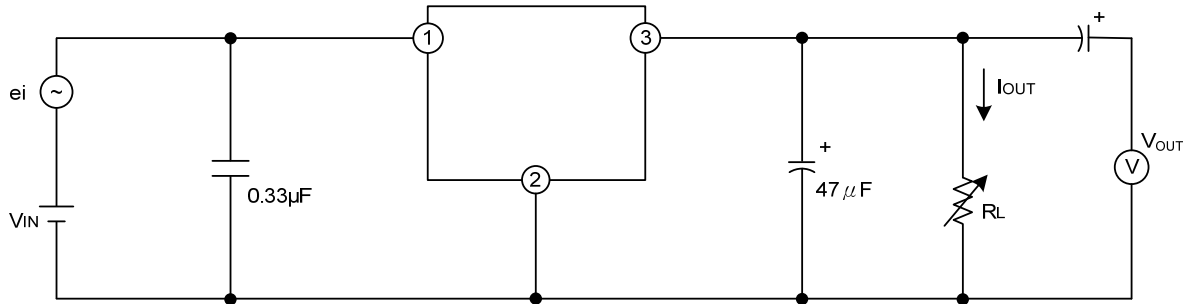
TO-220F-4 Package



$f = 120\text{Hz}$  (sine wave),  $e_i$  (rms) = 0.5V,  $V_{IN} = V_O$  (TYP)+2V,  $I_{OUT} = 0.5\text{A}$ ,  $RR = 20\log(e_i$  (rms)  $/V_o$ (rms))

Fig.5 For Ripple Rejection

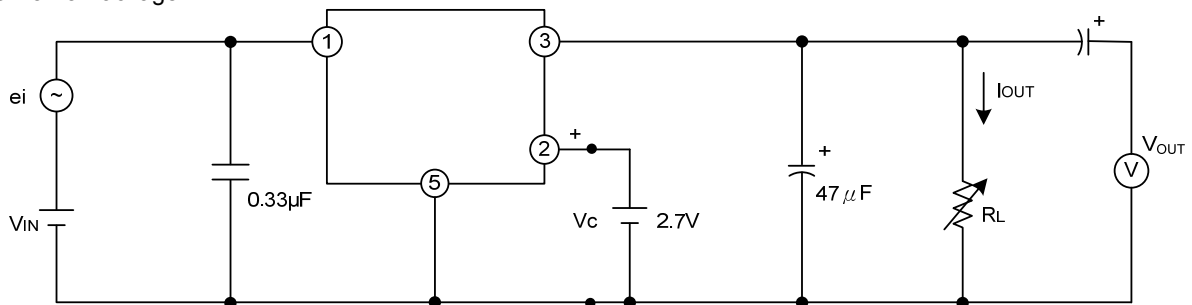
TO-252 Package



$f = 120\text{Hz}$  (sine wave),  $e_i$  (rms) = 0.5V,  $V_{IN} = V_O$  (TYP)+2V,  $I_{OUT} = 0.5\text{A}$ ,  $RR = 20\log(e_i$  (rms)  $/V_o$ (rms))

Fig.6 For Ripple Rejection

TO-252-5 Package

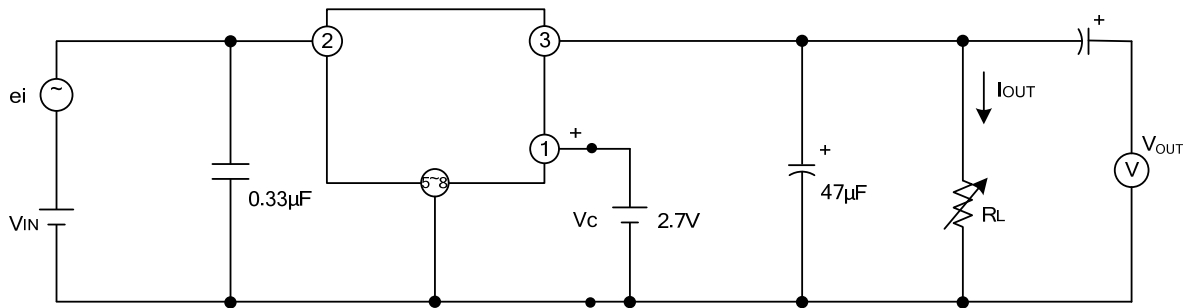


$f = 120\text{Hz}$  (sine wave),  $e_i$  (rms) = 0.5V,  $V_{IN} = V_O$  (TYP)+2V,  $I_{OUT} = 0.5\text{A}$ ,  $RR = 20\log(e_i$  (rms)  $/V_o$ (rms))

Fig.7 For Ripple Rejection

## ■ TEST CIRCUIT (Cont.)

SOP-8/HSOP-8 Package



$f = 120\text{Hz}$  (sine wave),  $e_i$  (rms) = 0.5V,  $V_{IN} = V_O$  (TYP)+2V,  $I_{OUT} = 0.5\text{A}$ ,  $RR = 20\log(e_i$  (rms) /  $V_o$ (rms))

Fig.8 For Ripple Rejection

## ■ TYPICAL APPLICATION CIRCUIT

TO-220F-4 Package

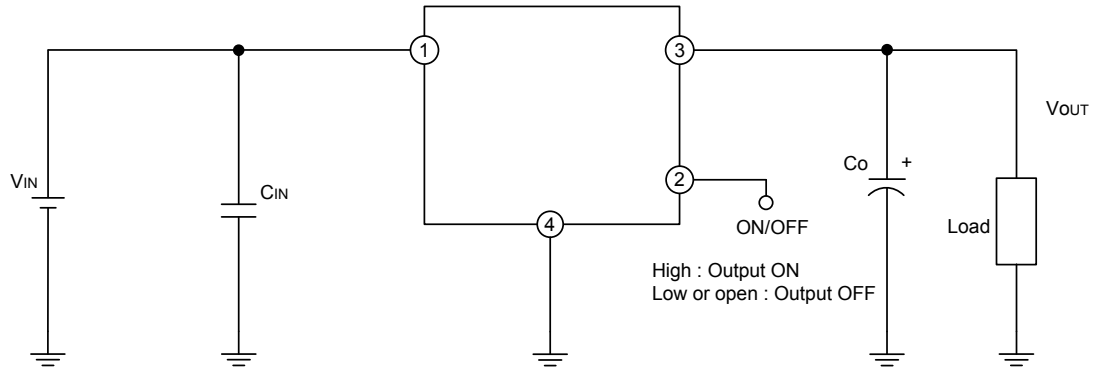


Fig. 9

TO-252 Package

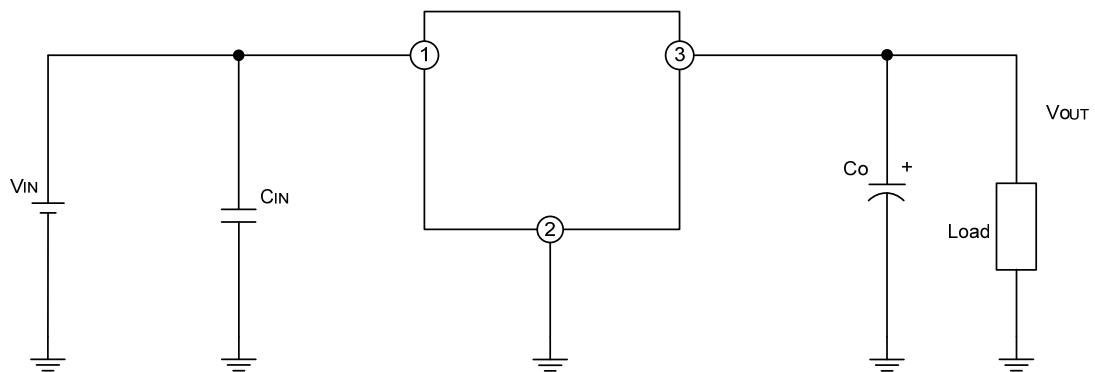


Fig. 10

TO-252-5 Package

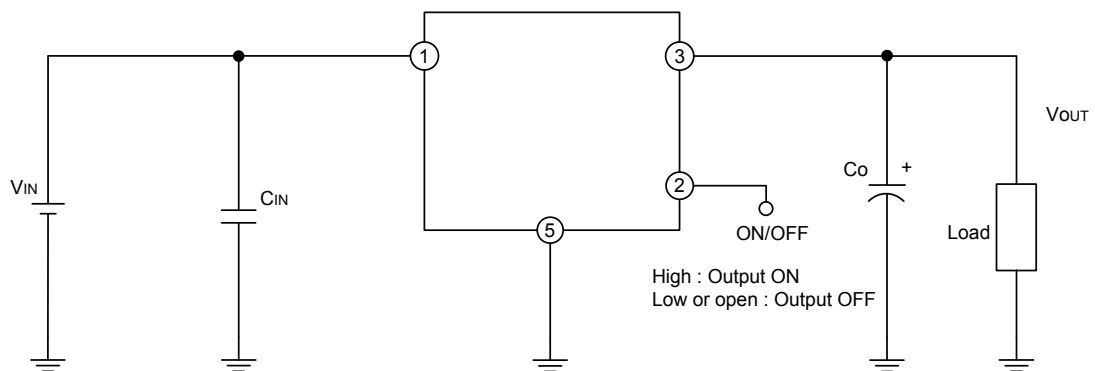


Fig. 11



### ■ TYPICAL APPLICATION CIRCUIT

SOP-8/HSOP-8 Package

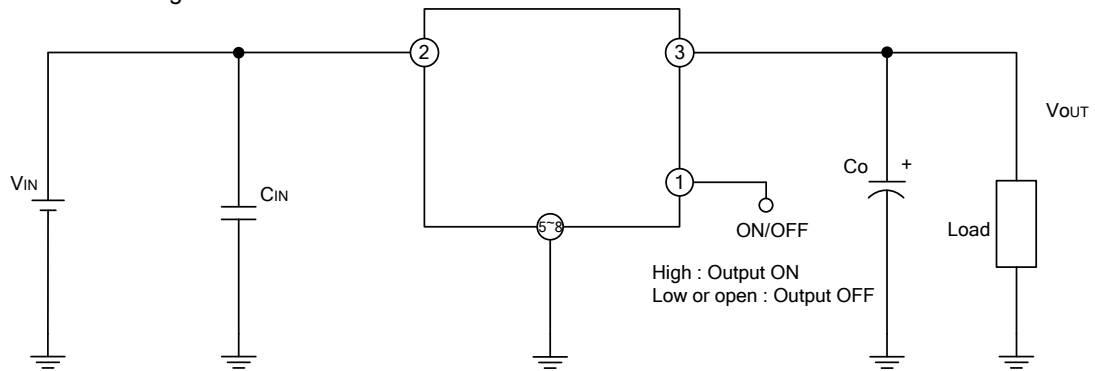
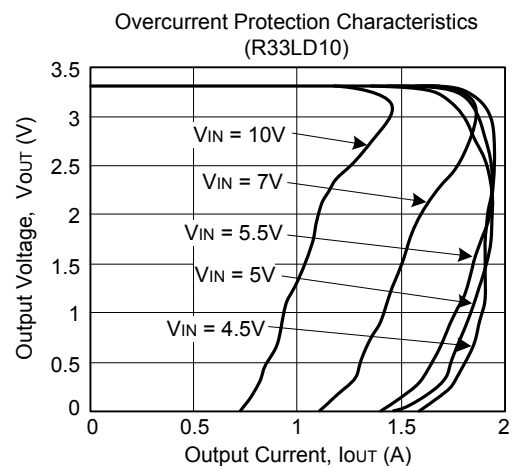
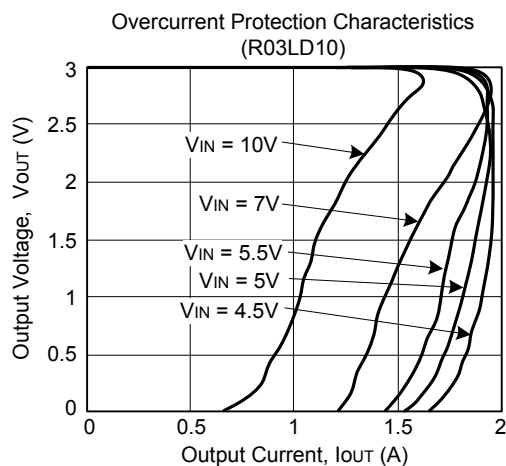
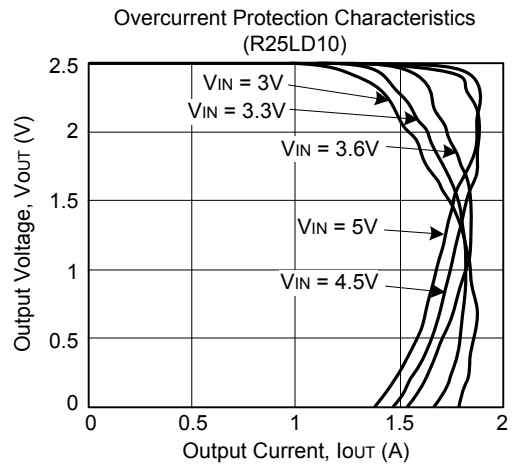
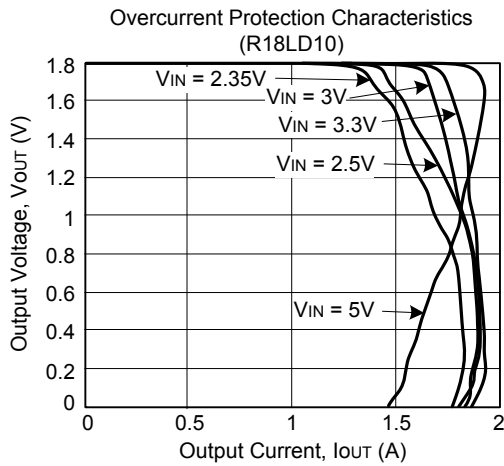
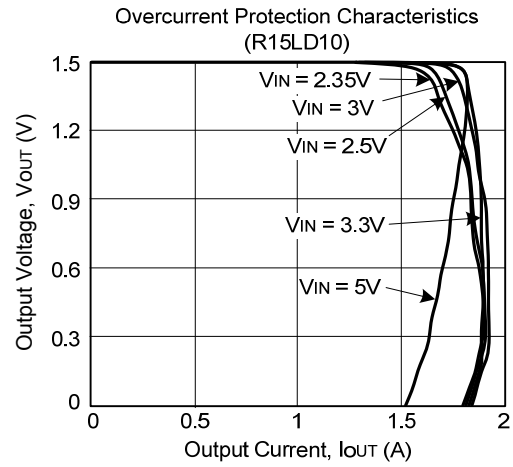
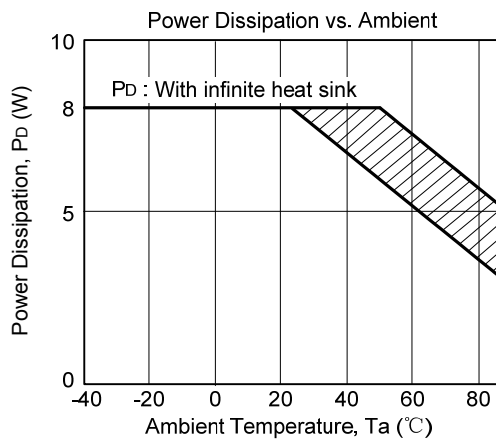
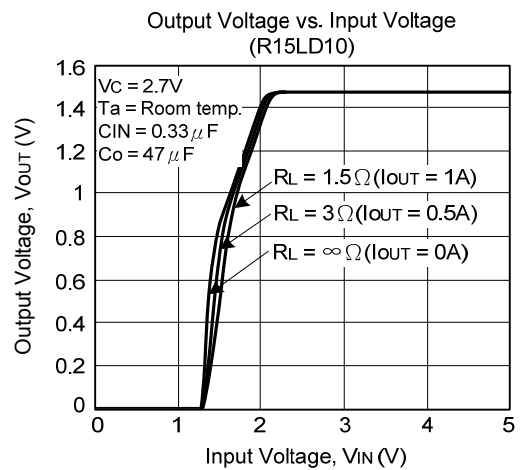
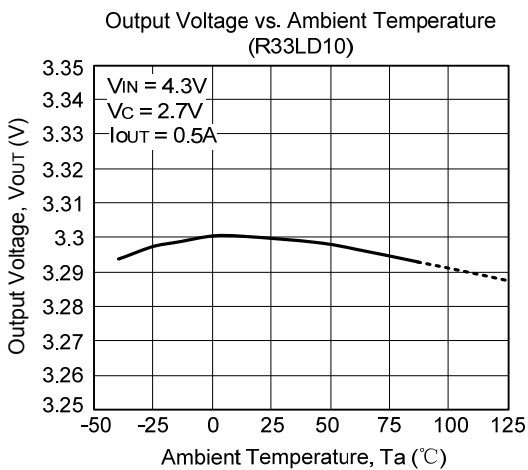
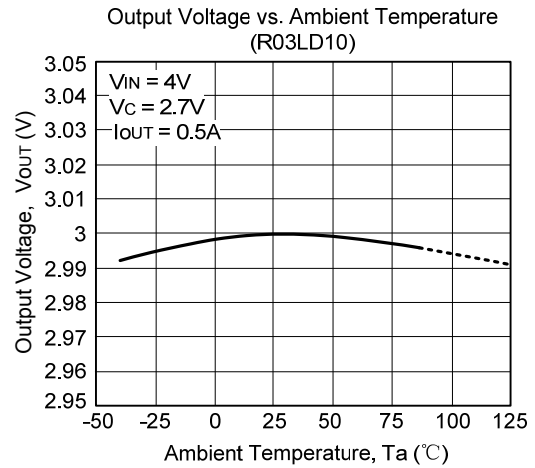
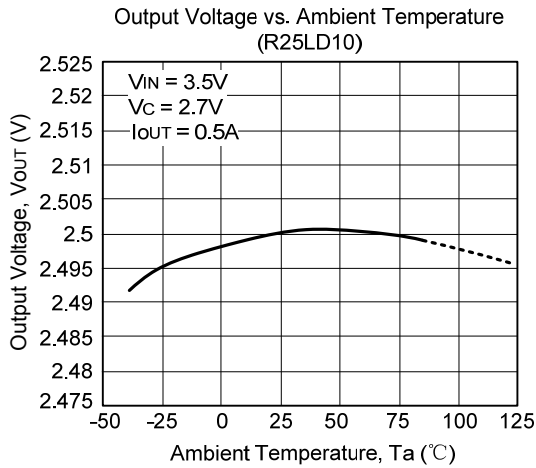
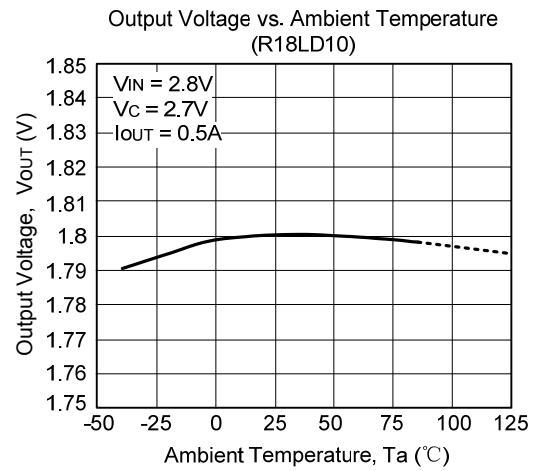
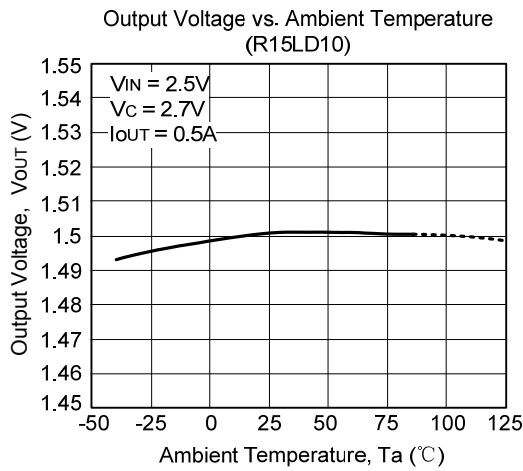


Fig. 12

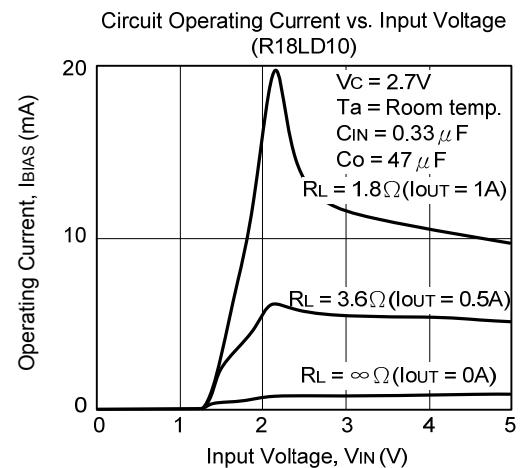
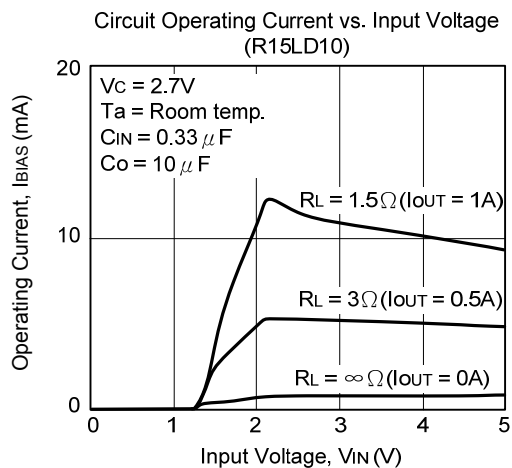
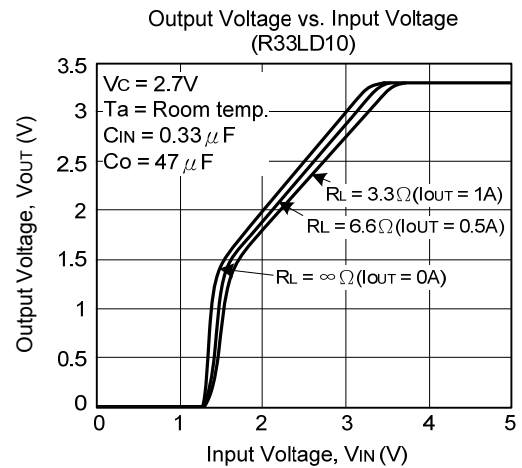
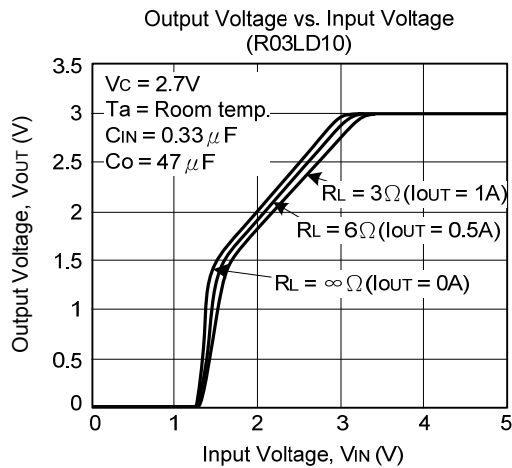
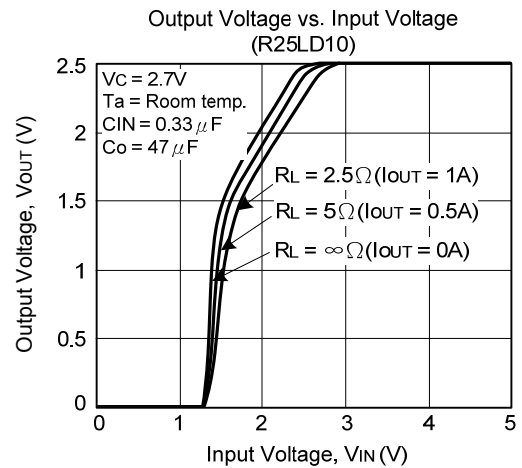
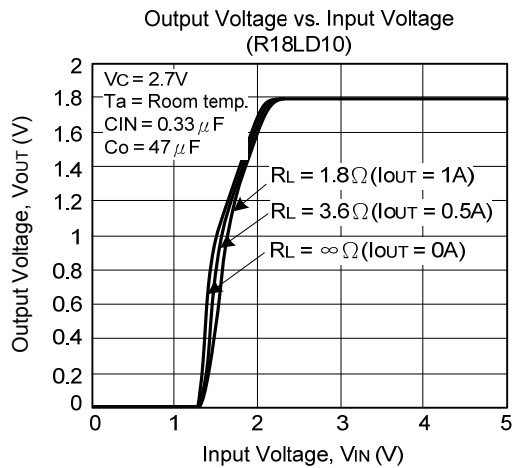
### TYPICAL CHARACTERISTICS



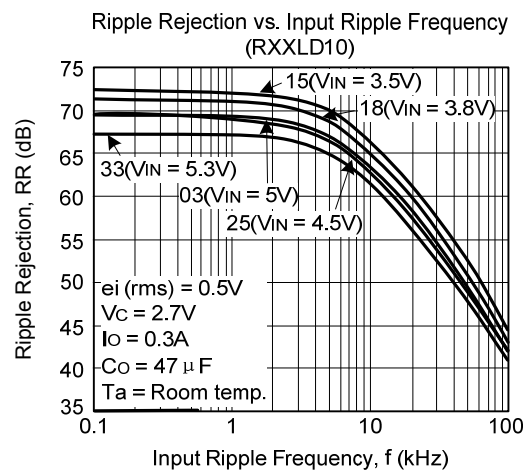
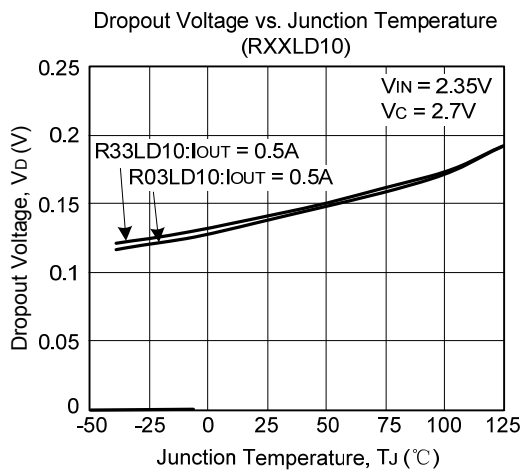
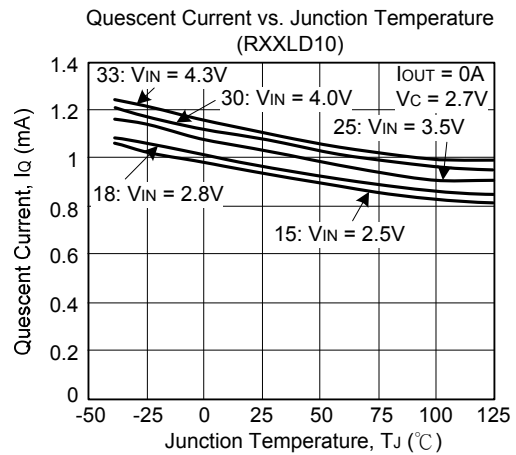
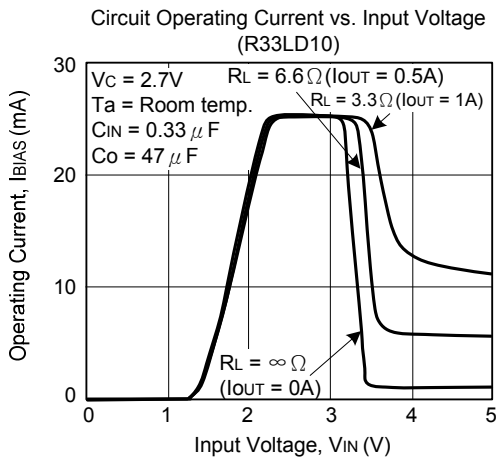
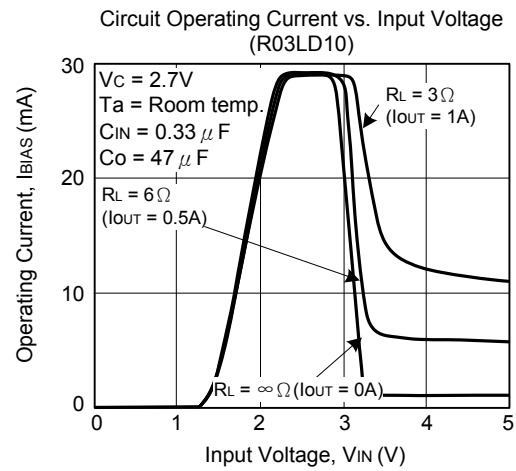
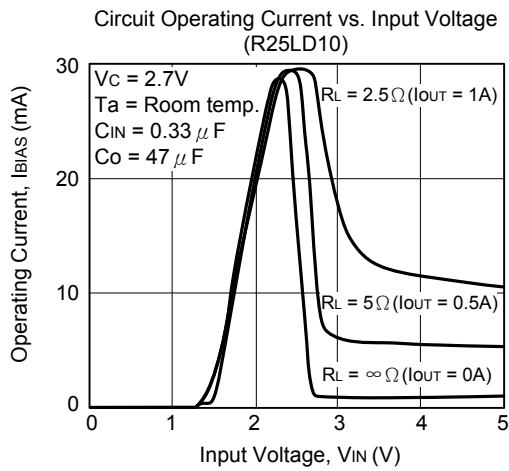
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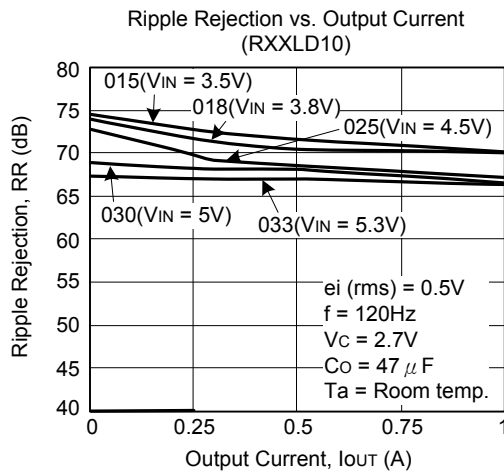
■ TYPICAL CHARACTERISTICS(cont.)



## ■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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