



## R200LD10

## LINEAR INTEGRATED CIRCUIT

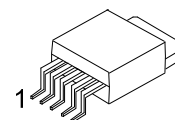
### VOLTAGE REGULATOR

#### DESCRIPTION

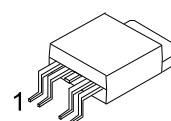
The UTC **R200LD10** shows a high current, high accuracy, low-dropout voltage. The features are: low dropout voltage, very low ground current. Cause the series have been designed for high current loads, so they are also used in lower current, extremely low dropout-critical systems (in which their tiny dropout voltage and ground current values are important attributes).

#### FEATURES

- \* Built-in ON/OFF function,
  - \* Over current protection function,
  - \* ASO protection function
  - \* Overheat protection function
  - \* 0.3A / 3.3V(R1=2KΩ)
- Output low dropout voltage regulator



TO-252-5

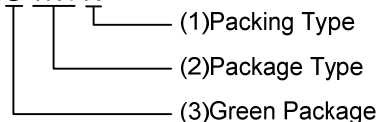


TO-252-4

#### ORDERING INFORMATION

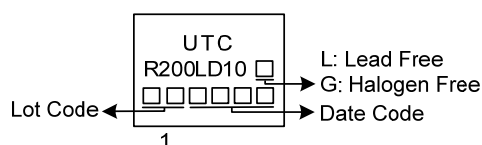
Ordering Number		Package	Packing
Lead Free	Halogen Free		
R200LD10L-TN4-L	R200LD10G-TN4-L	TO-252-4	Tape Reel (Reserve Feed)
R200LD10L-TN4-R	R200LD10G-TN4-R	TO-252-4	Tape Reel (Standard Feed)
R200LD10L-TN4-T	R200LD10G-TN4-T	TO-252-4	Tube
R200LD10L-TN5-R	R200LD10G-TN5-R	TO-252-5	Tape Reel
R200LD10L-TN5-T	R200LD10G-TN5-T	TO-252-5	Tube

R200LD10G-TN4-R



- (1) R: Tape Reel (Standard Feed), T: Tube  
L: Tape Reel (Reserve Feed)  
(2) TN4: TO-252-4, TN5: TO-252-5  
(3) G: Halogen Free and Lead Free, L: Lead Free

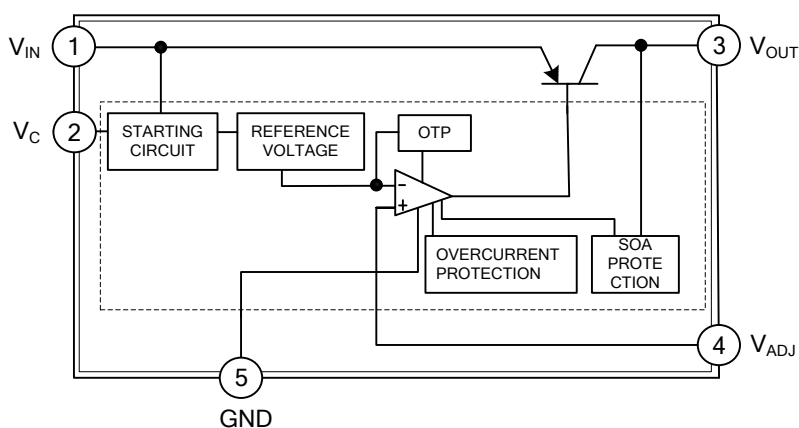
#### MARKING



## ■ PIN DESCRIPTIONS

PIN NO.	PIN NAME	PIN FUNCTION
1	$V_{IN}$	DC Input Voltage.
2	$V_C$	On/Off Control
3	$V_{OUT}$	DC Output Voltage.
4	$V_{ADJ}$	Output Voltage Adjustment
5	GND	Ground

## ■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage (Note 2)	$V_{IN}$	24	V
ON/OFF Control Terminal Voltage (Note 2)	$V_C$	24	V
Output Adjustment Pin Voltage (Note 2)	$V_{ADJ}$	5	V
Output Current	$I_{OUT}$	1	A
Power Dissipation (with infinite heat sink)	$P_D$	8	W
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Operating Temperature	$T_{OPR}$	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^{\circ}\text{C}$

Notes: 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.

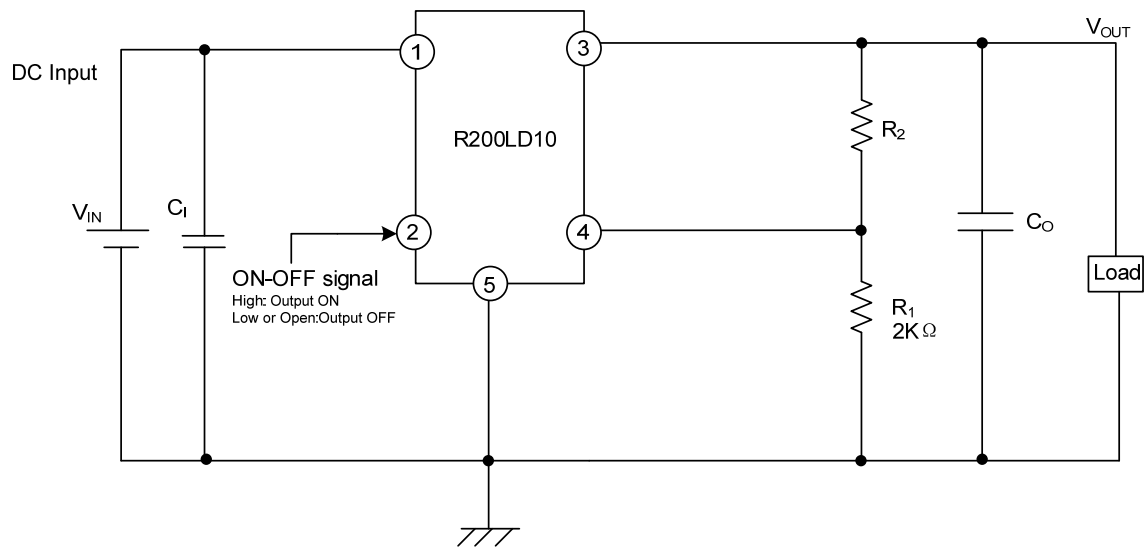
■ ELECTRICAL CHARACTERISTICS

( $V_{IN}=5\text{V}$ ,  $V_{OUT}=3.3\text{V}$  ( $R_1=2\text{k}\Omega$ ),  $I_{OUT}=0.3\text{A}$ ,  $V_C=2.7\text{V}$ ,  $T_J=25^{\circ}\text{C}$ ,  $C_I=0.33\mu\text{F}$ ,  $C_O=10\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN}$		3.5		24	V
Output Voltage	$V_{OUT}$		3.0		20	V
Load Regulation	$\Delta V_{OUT}/\Delta I_{OUT}$	$I_{OUT} = 5\text{mA} \sim 1\text{A}$			1.0	%
Line Regulation	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = 4 \sim 10\text{V}$ , $I_{OUT}=5\text{mA}$			1.0	
Ripple Rejection	RR	Refer to Fig 3		60		dB
Dropout Voltage	$V_D$	$V_{IN}=3.5\text{V}$			0.5	V
Reference Voltage	$V_{REF}$		2.583	2.65	2.717	
Temperature Coefficient of Reference Voltage	$T_C V_{REF}$	$T_J = 0 \sim 125^{\circ}\text{C}$ , $I_{OUT} = 5\text{mA}$		$\pm 1.0$		%
On-State Voltage for Control	$V_{C(ON)}$	(Note)	2.0			V
On-State Current for Control	$I_{C(ON)}$				200	$\mu\text{A}$
On-State Voltage for Control	$V_{C(OFF)}$	$I_{OUT}=0\text{A}$			0.8	V
On-State Current for Control	$I_{C(OFF)}$	$I_{OUT}=0\text{A}$ , $V_C=0.4\text{V}$			-2	$\mu\text{A}$
Quiescent Current	$I_Q$	$I_{OUT}=0\text{A}$			8	mA
Output Off-State Consumption Current	$I_{QS}$	$V_C=0.4\text{V}$			5	$\mu\text{A}$

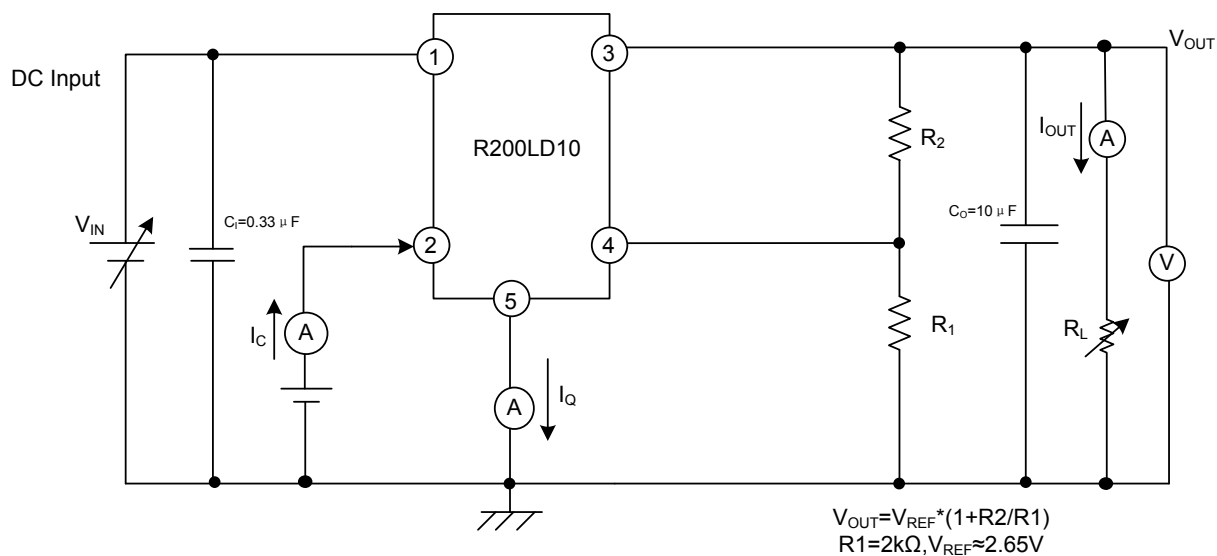
Note: In case of  $V_C$  pin, output voltage turns OFF.

## ■ TYPICAL APPLICATION CIRCUIT

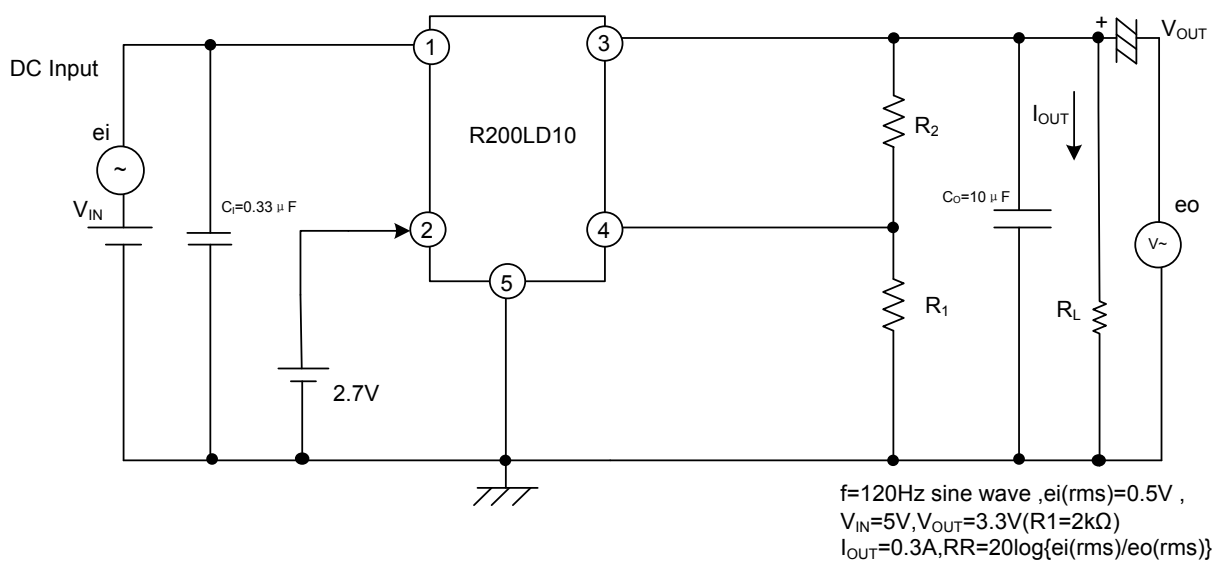


# ■ TEST CIRCUIT

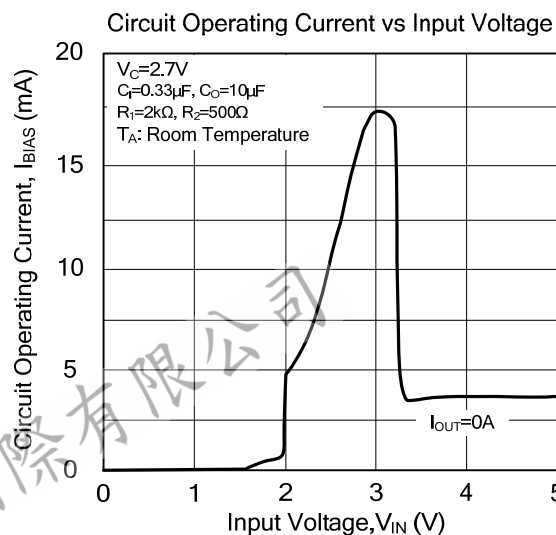
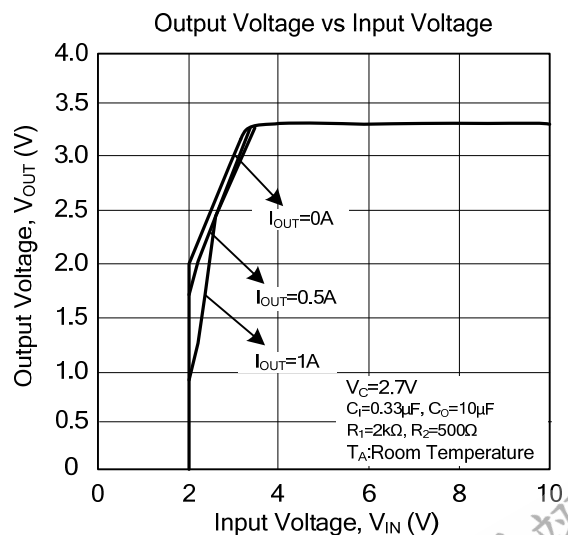
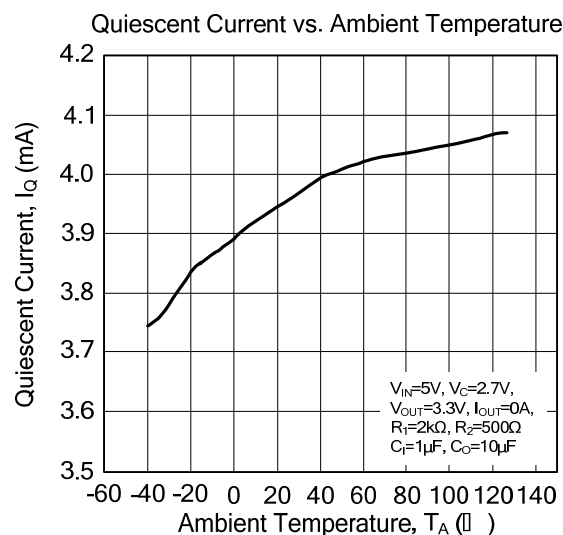
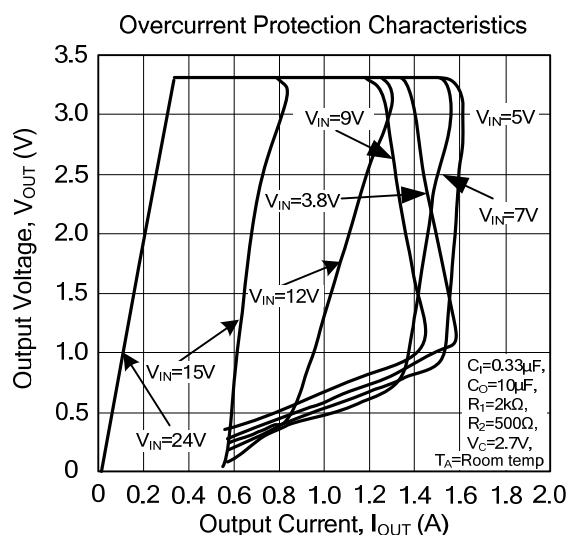
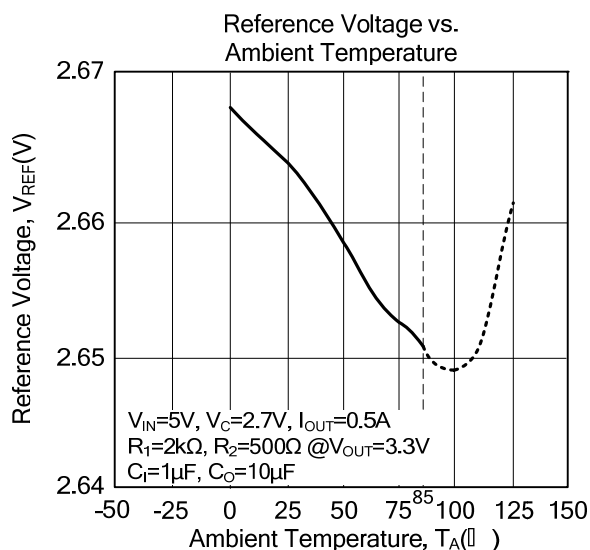
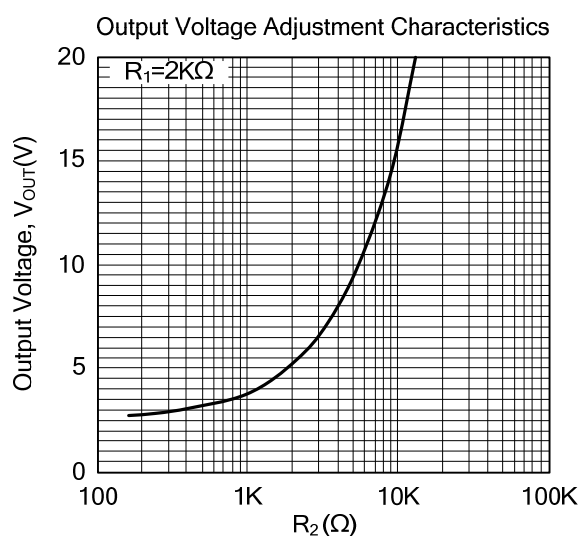
## For Standard Measuring Circuit of Regulation Portion



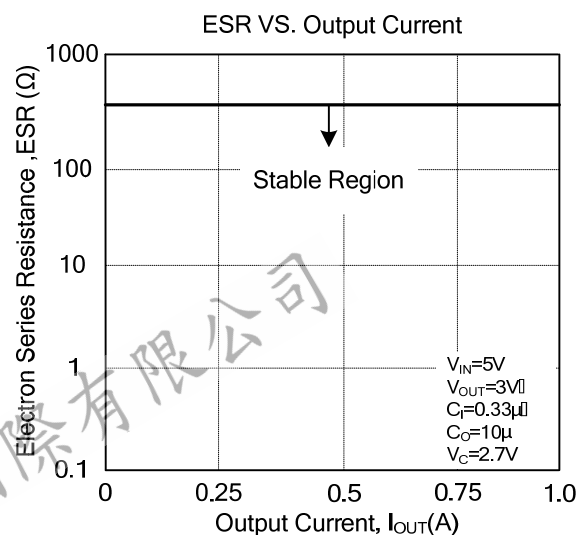
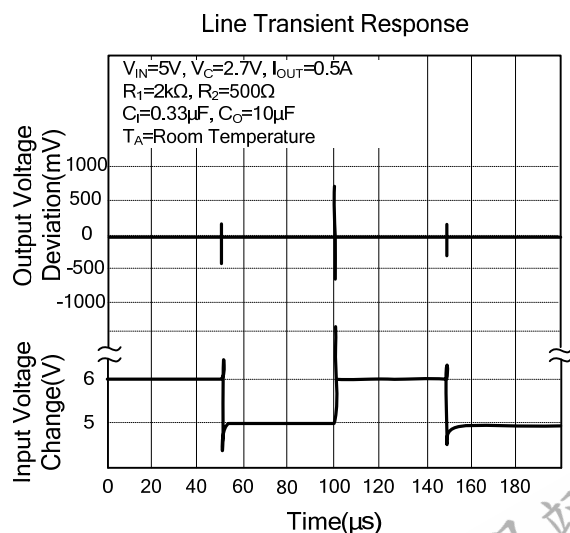
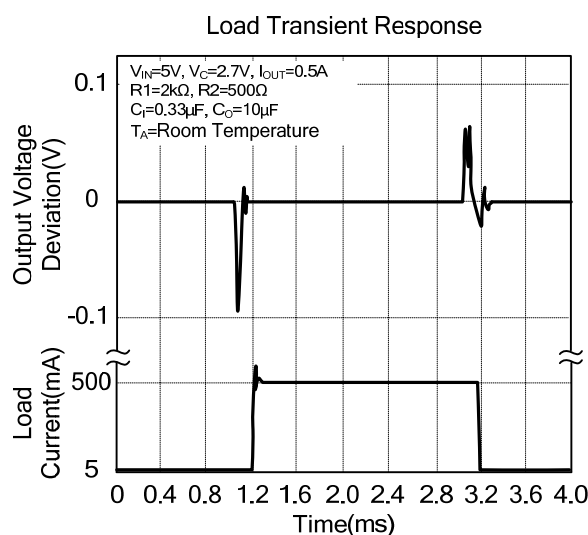
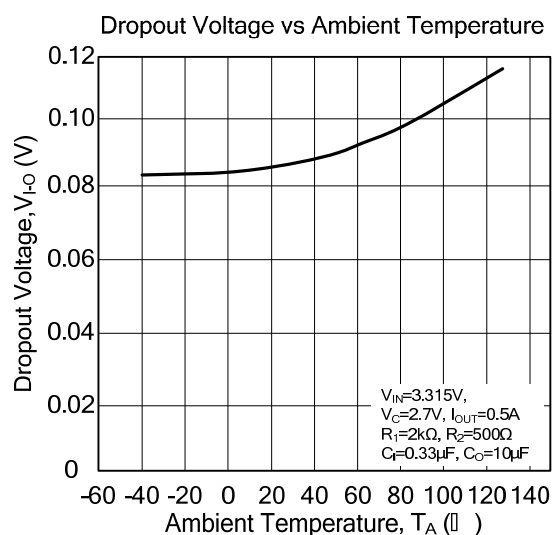
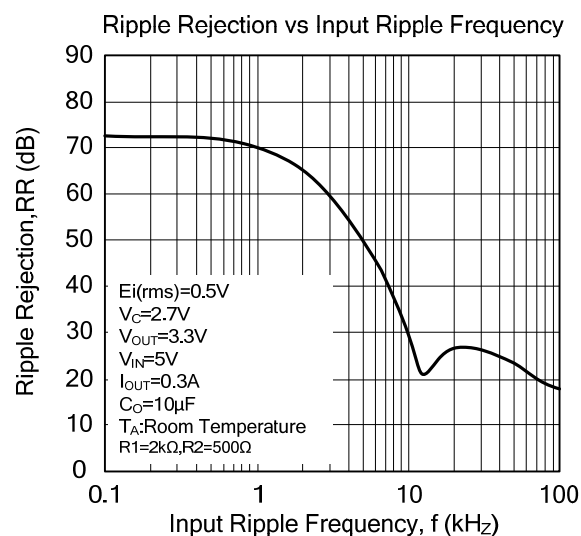
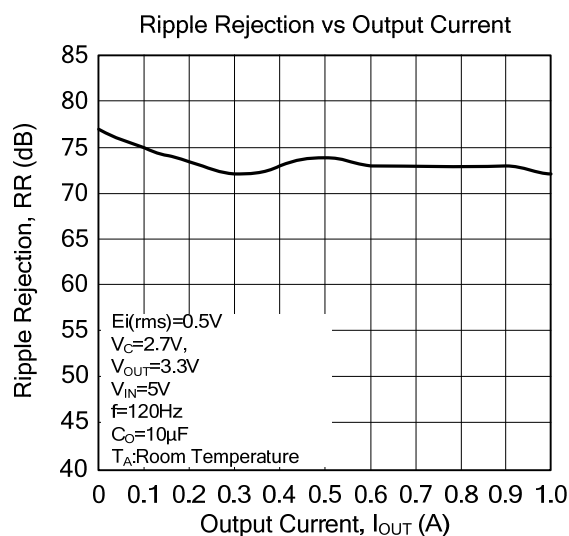
## For Standard Measuring Circuit of Ripple Rejection Critical Rate



# TYPICAL CHARACTERISTICS



# TYPICAL CHARACTERISTICS (Cont.)



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