



# R1MX55

## LINEAR INTEGRATED CIRCUIT

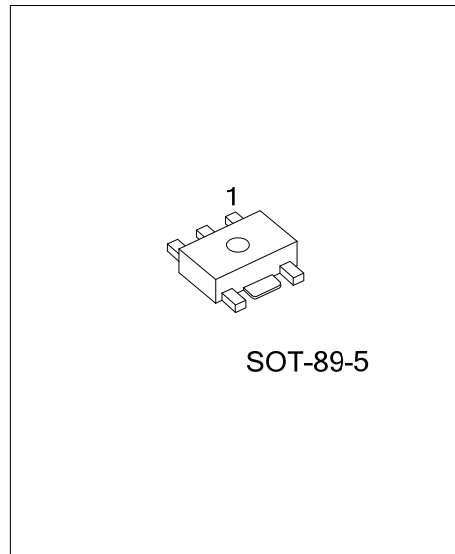
### VOLTAGE REGULATOR

#### ■ DESCRIPTION

As the UTC linear intergrated LDO, the **R1MX55** shows a high current, high accuracy, low-dropout voltage. The feature 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,
  - \* Over heat protection function
  - \* Adjustable DC output voltage
  - \* 30mA / 2.44V
- Output low dropout voltage regulator



Lead-free: R1MX55L  
Halogen-free: R1MX55G

#### ■ ORDERING INFORMATION

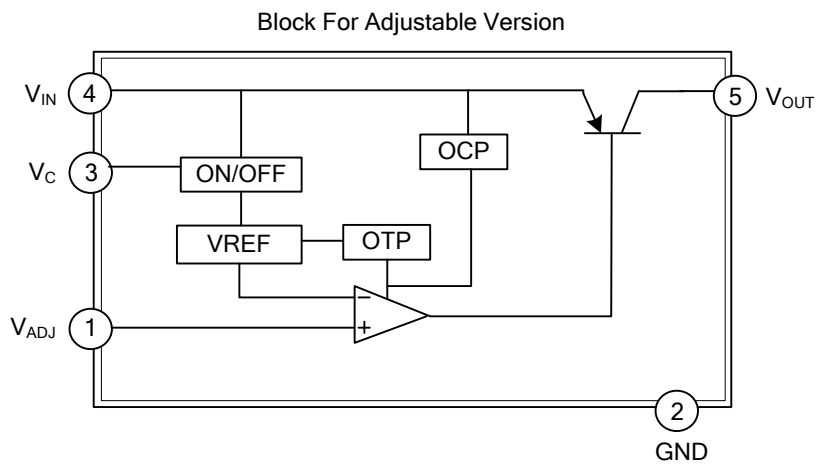
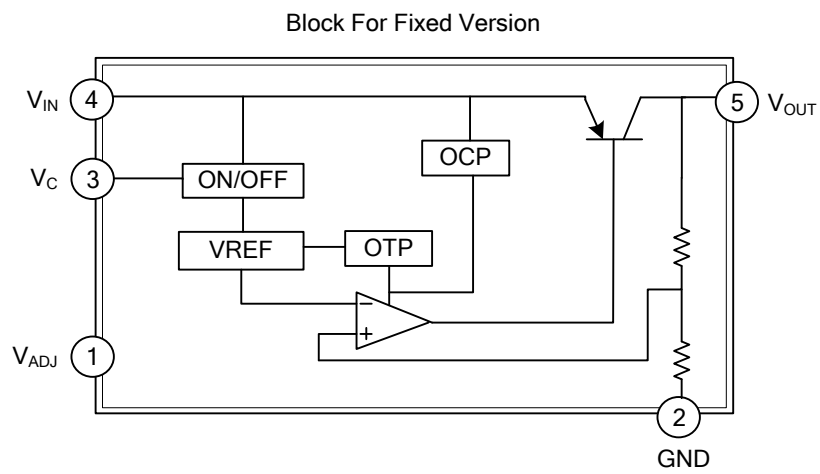
Ordering Number			Package	Packing
Normal	Lead Free	Halogen Free		
R1MX55-AB5-R	R1MX55L-AB5-R	R1MX55G-AB5-R	SOT-89-5	Tape Reel

<p>R1MX55L-AB5-R</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AB5: SOT-89-5</p> <p>(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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### ■ PIN DESCRIPTIONS

PIN NO.	PIN NAME	FUNCTION
1	V <sub>ADJ</sub>	Output voltage adjustment
2	GND	Ground
3	V <sub>C</sub>	ON/OFF control
4	V <sub>IN</sub>	DC input
5	V <sub>OUT</sub>	DC output

■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNITS
Input Voltage (Note 2)	$V_{IN}$	9	V
ON/OFF Control Voltage (Note 2)	$V_C$	9	V
Output Adjustment pin Voltage (Note 2)	$V_{ADJ}$	5	V
Output Current	$I_{OUT}$	500	mA
Power Dissipation	$P_D$	900	mW
Junction Temperature	$T_J$	150	°C
Operating Temperature	$T_{OPR}$	-40 ~ +85	°C
Storage Temperature	$T_{STG}$	-55 ~ +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.

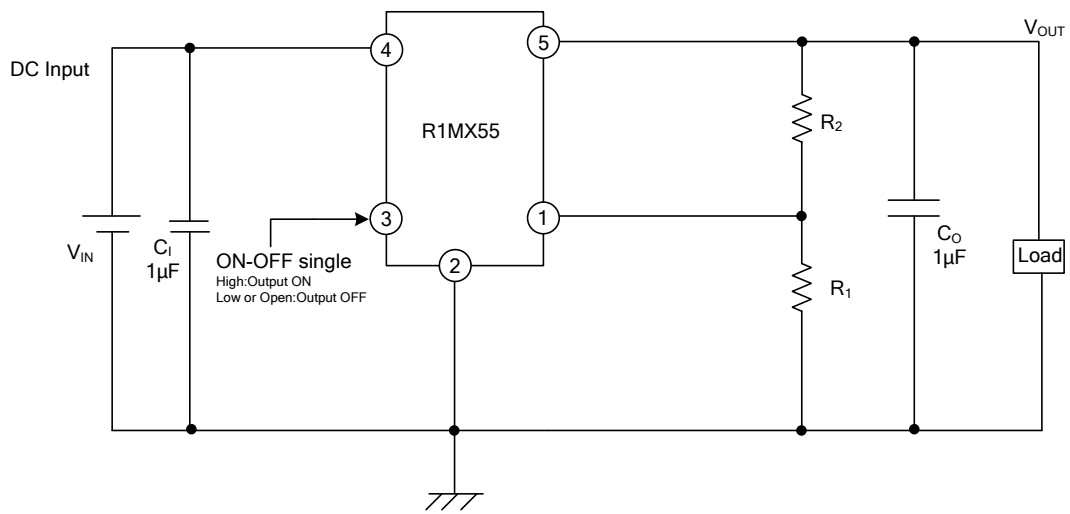
### ■ ELECTRICAL CHARACTERISTICS

( $V_{IN}=3.5V$ ,  $V_{OUT}=2.44V$  ( $R_1=R_2=100K\Omega$ ),  $I_{OUT}=30mA$ ,  $V_C=1.8V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

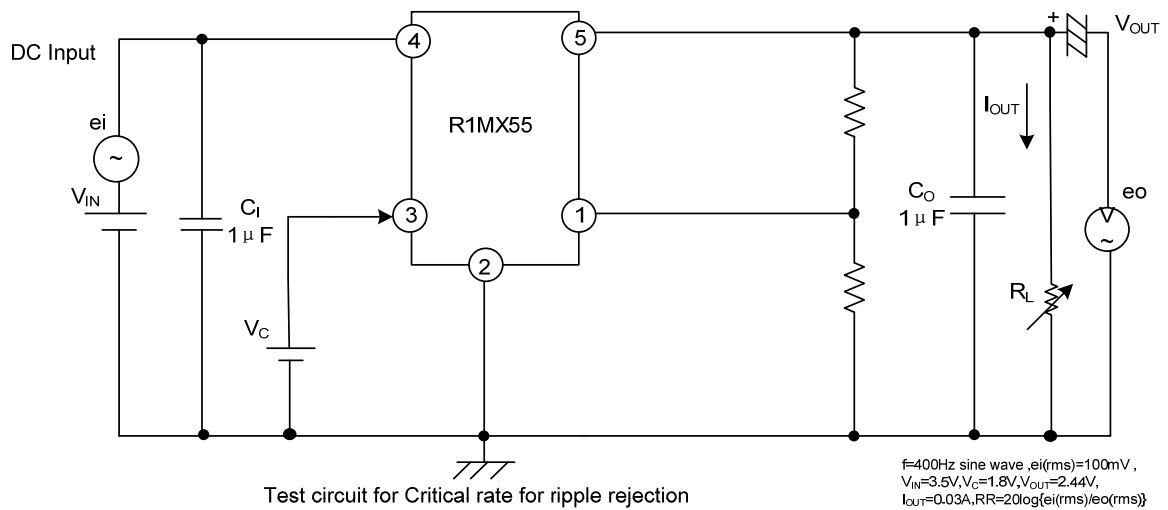
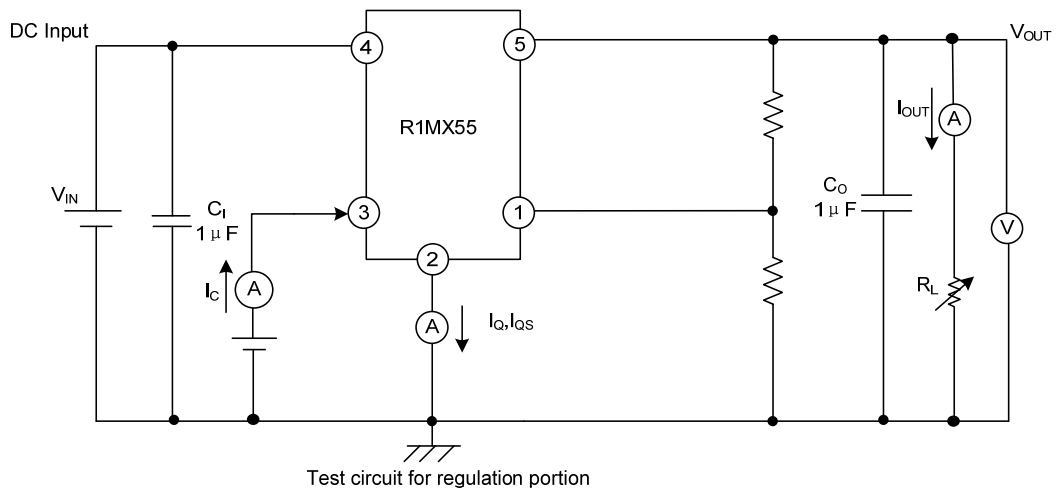
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Voltage	$V_{IN}$		2.6		9.0	V
Output Voltage	$V_{OUT}$		1.3		5.0	V
Load Regulation	$\Delta V_{OUT}$	$I_{OUT}=5\sim 500mA$		10	100	mV
Line Regulation	$\Delta V_{OUT}$	$V_{IN}=3.5\sim 8.5V$		6	20	mV
Ripple Rejection	RR			55		dB
Dropout Voltage	$V_D$	$I_{OUT}=500mA$			0.7	V
Reference Voltage	$V_{REF}$		1.196	1.22	1.244	V
Temperature Coefficient of Output Voltage	$T_C V_{OUT}$	$T_J=25\sim 75^\circ C$ , $I_{OUT}=10mA$		$\pm 0.1$		mV/°C
Output Noise Voltage	$V_{NO(RMS)}$	$10Hz < f < 100kHz$		100		$\mu V$
On-State Voltage for Control	$V_{C(ON)}$	(Note)	1.8			V
On-State Current for Control	$I_{C(ON)}$	$V_C=1.8V$		20	70	$\mu A$
Off-State Voltage for Control	$V_{C(OFF)}$				0.4	V
Quiescent Current	$I_Q$	$I_{OUT}=0A$		0.8	1.2	mA
Output Off-State Consumption Current	$I_{QS}$	$V_C=0.2V$			1	$\mu A$

Note: In case that the control terminal (3th pin) is non-connection, output voltage should be OFF state.

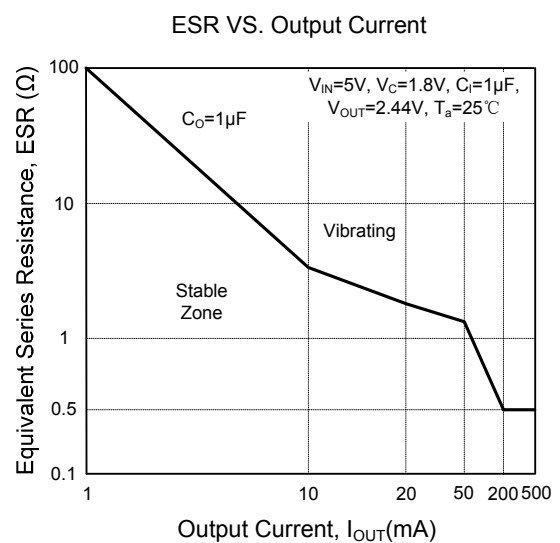
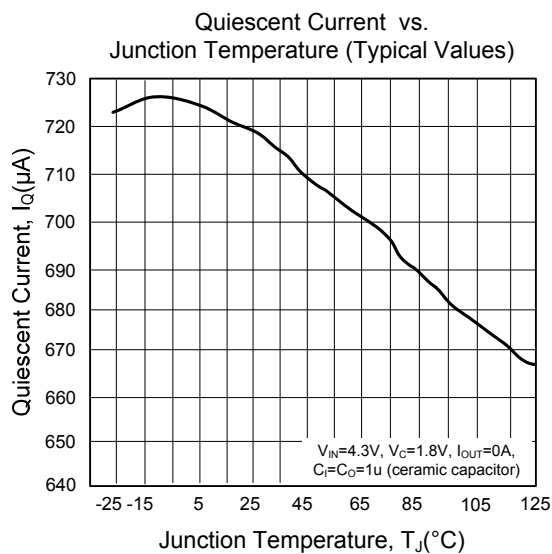
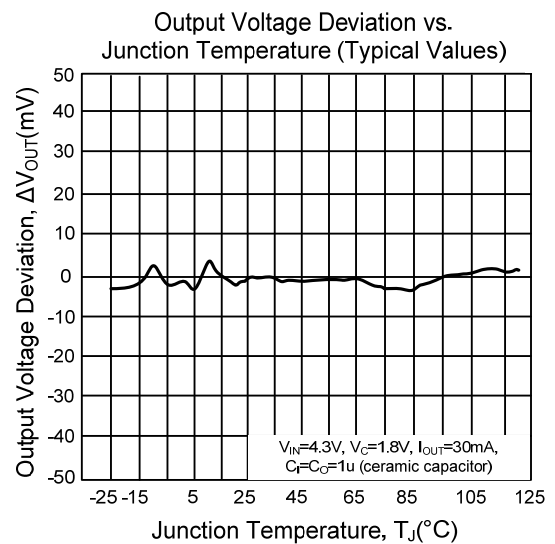
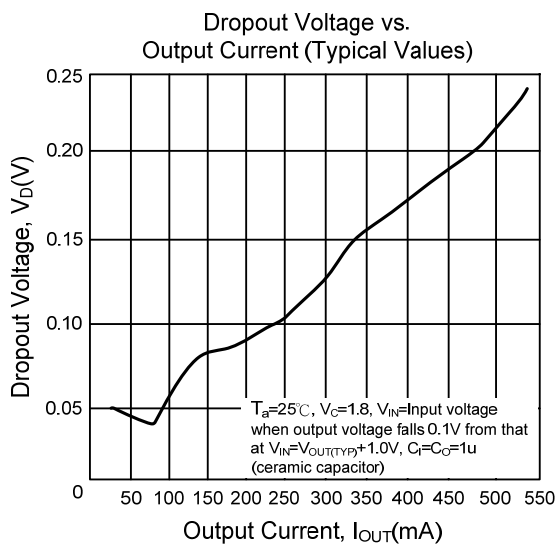
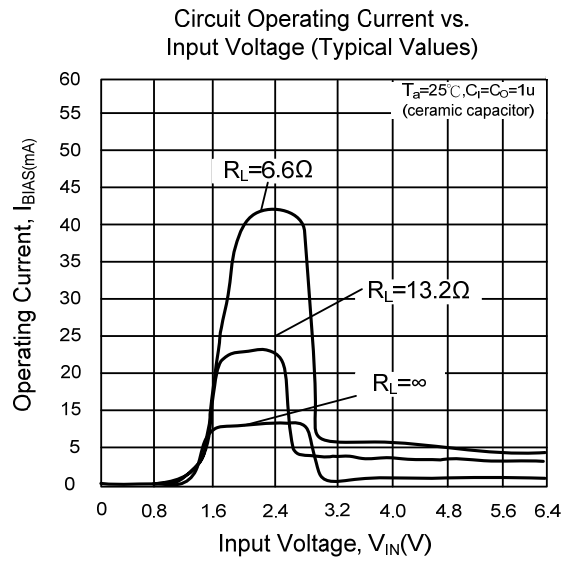
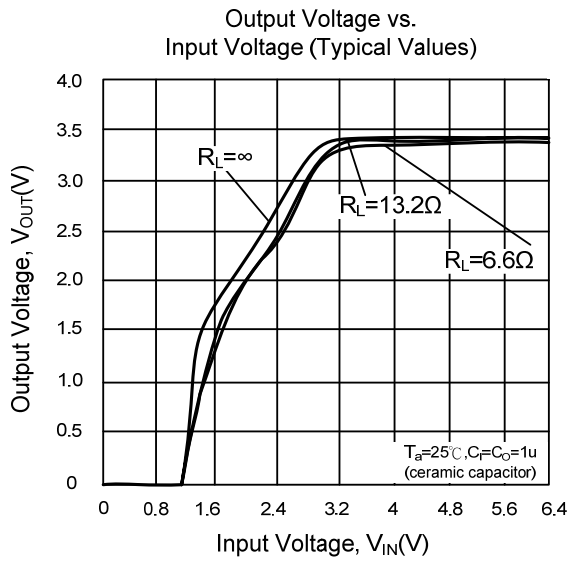
## ■ TYPICAL APPLICATION CIRCUIT



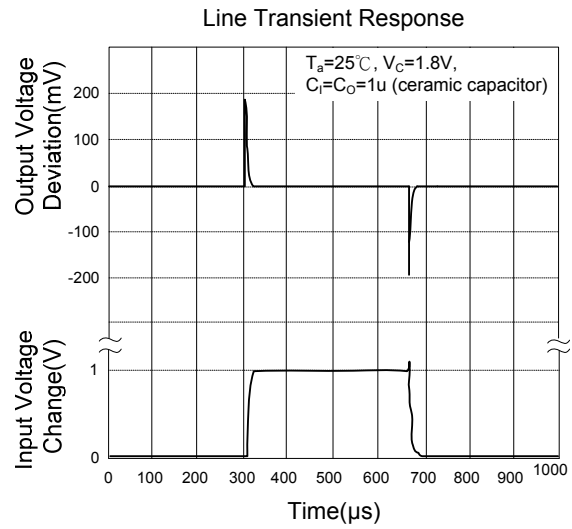
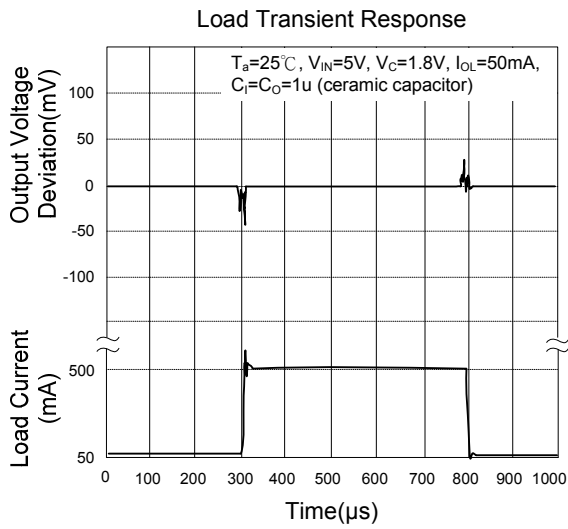
## ■ ELECTRICAL CHARACTERISTICS MEASURING CIRCUIT



## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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