



UR6225

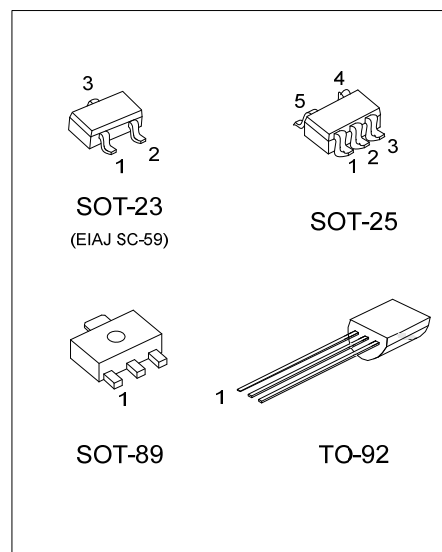
CMOS IC

POSITIVE VOLTAGE
REGULATOR

■ DESCRIPTION

The UTC **UR6225** is a positive voltage output, three-pin regulator that provides a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The UTC **UR6225** consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Transient responses to load variations have improved in comparison to the existing series.



■ FEATURES

- * Maximum Output Current: 300mA (Within Max. Power Dissipation, $V_{OUT} = 5.0V$)
- * Output Voltage Range: 1.5V ~ 6.0V in 0.1V Increments (1.5V ~ 1.9V for Custom Products)
- * Highly Accurate: Output Voltage $\pm 2\%$ ($\pm 1\%$ for Semi-Custom Products)
- * Low Power Consumption: Typ. 2.0 μA @ $V_{OUT} = 5.0V$
- * Output Voltage Temperature Characteristics: Typ. $\pm 100ppm/^{\circ}C$
- * Input Stability : Typ. 0.2%/V
- * Small Input-Output Differential: $I_{OUT} = 100mA$ @ $V_{OUT} = 5.0V$ with a 0.12V Differential.

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
UR6225L-xx-AB3-C-R	UR6225G-xx-AB3-C-R	SOT-89	G	I	O	-	-	Tape Reel
UR6225L-xx-AE3-3-R	UR6225G-xx-AE3-3-R	SOT-23	G	O	I	-	-	Tape Reel
UR6225L-xx-AF5-C-R	UR6225G-xx-AF5-C-R	SOT-25	I	G	N	N	O	Tape Reel
UR6225L-xx-AF5-F-R	UR6225G-xx-AF5-F-R	SOT-25	G	I	O	N	N	Tape Reel
UR6225L-xx-T92-C-B	UR6225G-xx-T92-C-B	TO-92	G	I	O	-	-	Tape Box
UR6225L-xx-T92-C-K	UR6225G-xx-T92-C-K	TO-92	G	I	O	-	-	Bulk
UR6225L-xx-T92-B-B	UR6225G-xx-T92-B-B	TO-92	O	G	I	-	-	Tape Box
UR6225L-xx-T92-B-K	UR6225G-xx-T92-B-K	TO-92	O	G	I	-	-	Bulk

Notes: Pin Assignment: I: V_{IN} O: V_{OUT} G: V_{SS} N: No Connection

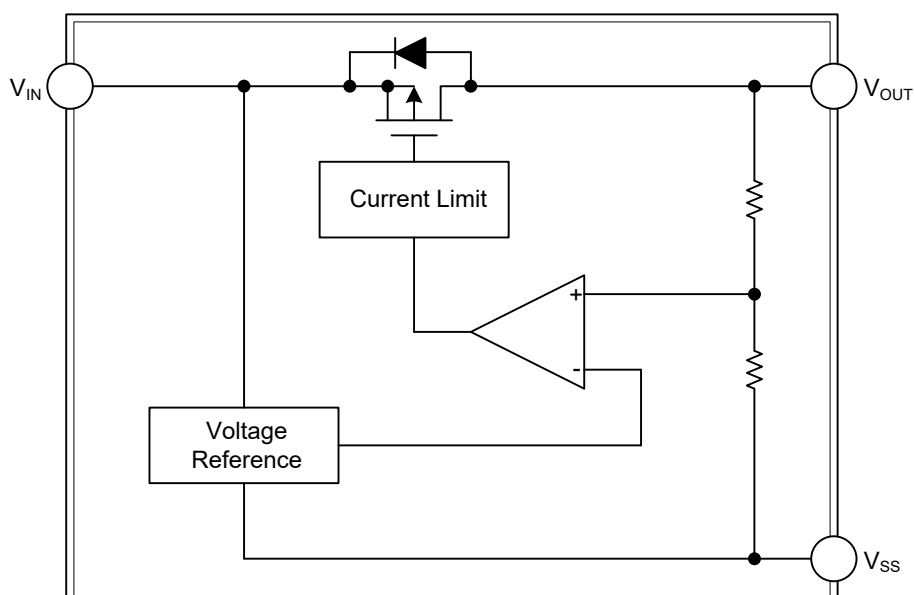
xx: Output Voltage, refer to Marking Information.

UR6225G-xx-AB3-C-R	(1) Packing Type (2) Pin Assignment (3) Package Type (4) Output Voltage Code (5) Green Package	(1) R: Tape Reel, K: Bulk, B: Tape Box (2) refer to Pin Assignment (3) AB3: SOT-89, AE3: SOT-23, AF5: SOT-25, T92: TO-92 (4) xx: refer to Marking Information (5) G: Halogen Free and Lead Free, L: Lead Free
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	15:1.5V 18:1.8V 20:2.0V	UR6225 1 2 3 Date Code → Voltage Code L: Lead Free G: Halogen Free
SOT-25	21:2.1V 25:2.5V 26:2.6V 27:2.7V 28:2.8V 2J:2.85V	F2XX 1 2 3 4 5 Voltage Code → Pin Code L: Lead Free G: Halogen Free
SOT-23	30:3.0V 31:3.1V 33:3.3V 35:3.5V 36:3.6V 38:3.8V	F2XX 1 2 3 Voltage Code → Pin Code L: Lead Free G: Halogen Free
TO-92	40:4.0V 45:4.5V 50:5.0V 60:6.0V	UTC UR6225 1 2 3 Pin Code → Voltage Code → Date Code L: Lead Free G: Halogen Free

BLOCK DIAGRAM



■ **ABSOLUTE MAXIMUM RATINGS** (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		V _{IN}	10	V
Output Current		I _{OUT}	300	mA
Output Voltage		V _{OUT}	V _{SS} -0.3 ~ V _{IN} +0.3	V
Power Dissipation	SC-23/SOT-25	P _D	350	mW
	SOT-89		500	mW
	TO-92		625	mW
Junction Temperature		T _J	+125	°C
Operating Temperature		T _{OPR}	-40 ~ +85	°C
Storage Temperature		T _{STG}	-40~+125	°C

Note: 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.

■ **ELECTRICAL CHARACTERISTICS** (T_A=25°C, unless otherwise specified)

UR6225-6.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V _{OUT} (E)(Note2)	I _{OUT} =40mA, V _{IN} =7.0V	5.880	6.000	6.120	V
Maximum Output Current	1	I _{OUT} (MAX)	V _{IN} =7.0V, V _{OUT} (E)≥5.4V	250			mA
Minimum Load Current		I _{OUT} (MIN)	V _{IN} =V _{OUT} +1V			50	μA
Load Stability	1	ΔV _{OUT}	V _{IN} =7.0V, 1mA≤I _{OUT} ≤100mA		40	80	mV
Input-Output Voltage	1	V _{DIF1}	I _{OUT} =100mA		120		mV
Differential (Note3)	1	V _{DIF2}	I _{OUT} =200mA		380		mV
Supply Current	2	I _{SS}	V _{IN} =7.0V		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I _{OUT} =40mA 7.0V≤V _{IN} ≤10V		0.2	0.3	%/V
Input Voltage		V _{IN}	I _{OUT} =5mA			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	I _{OUT} =40mA -40°C≤T _{OPR} ≤85°C		±100		ppm/°C

UR6225-5.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V _{OUT} (E)(Note2)	I _{OUT} =40mA, V _{IN} =6.0V	4.900	5.000	5.100	V
Maximum Output Current	1	I _{OUT} (MAX)	V _{IN} =6.0V, V _{OUT} (E)≥4.5V	250			mA
Minimum Load Current		I _{OUT} (MIN)	V _{IN} =V _{OUT} +1V			50	μA
Load Stability	1	ΔV _{OUT}	V _{IN} =6.0V, 1mA≤I _{OUT} ≤100mA		40	80	mV
Input-Output Voltage	1	V _{DIF1}	I _{OUT} =100mA		120		mV
Differential(Note3)	1	V _{DIF2}	I _{OUT} =200mA		380		mV
Supply Current	2	I _{SS}	V _{IN} =6.0V		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I _{OUT} =40mA 6.0V≤V _{IN} ≤10V		0.2	0.3	%/V
Input Voltage		V _{IN}	I _{OUT} =5mA			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	I _{OUT} =40mA -40°C≤T _{OPR} ≤85°C		±100		ppm/°C

■ ELECTRICAL CHARACTERISTICS (Cont.)

UR6225-4.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=5.5V$	4.410	4.500	4.59	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=5.5V$, $V_{OUT(E)} \geq 4.05V$	200			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=5.5V$, $1mA \leq I_{OUT} \leq 100mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100mA$		170		mV
	1	V_{DIF2}	$I_{OUT}=200mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=5.5V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $5.5V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-4.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=5.0V$	3.920	4.000	4.080	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=5.0V$, $V_{OUT(E)} \geq 3.6V$	200			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=5.0V$, $1mA \leq I_{OUT} \leq 100mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100mA$		170		mV
	1	V_{DIF2}	$I_{OUT}=200mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=5.0V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $5.0V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-3.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=4.8V$	3.724	3.800	3.876	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.8V$, $V_{OUT(E)} \geq 3.42V$	165			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.8V$, $1mA \leq I_{OUT} \leq 86mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86mA$		180		mV
	1	V_{DIF2}	$I_{OUT}=172mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.8V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.8V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

■ ELECTRICAL CHARACTERISTICS (Cont.)

UR6225-3.6V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=4.6V$	3.528	3.600	3.672	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.6V$, $V_{OUT(E)} \geq 3.24V$	165			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.6V$, $1mA \leq I_{OUT} \leq 86mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86mA$		180		mV
	1	V_{DIF2}	$I_{OUT}=172mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.6V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.6V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-3.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=4.5V$	3.430	3.500	3.570	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.5V$, $V_{OUT(E)} \geq 3.15V$	165			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.5V$, $1mA \leq I_{OUT} \leq 86mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86mA$		180		mV
	1	V_{DIF2}	$I_{OUT}=172mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.5V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.5V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-3.3V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=4.3V$	3.234	3.300	3.366	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.3V$, $V_{OUT(E)} \geq 2.97V$	165			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.3V$, $1mA \leq I_{OUT} \leq 86mA$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86mA$		180		mV
	1	V_{DIF2}	$I_{OUT}=172mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.3V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.3V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

■ ELECTRICAL CHARACTERISTICS (Cont.)

UR6225-3.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA, V_{IN}=4.0V$	2.940	3.000	3.060	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.0V, V_{OUT(E)} \geq 2.7V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.0V, 1mA \leq I_{OUT} \leq 80mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=80mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=160mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.0V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.0V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-3.1V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA, V_{IN}=4.0V$	3.038	3.1	3.162	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=4.0V, V_{OUT(E)} \geq 2.7V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.0V, 1mA \leq I_{OUT} \leq 80mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=80mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=160mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=4.0V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $4.0V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-2.85V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA, V_{IN}=3.85V$	2.793	2.850	2.907	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=3.85V, V_{OUT(E)} \geq 2.565V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.85V, 1mA \leq I_{OUT} \leq 77mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=77mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=154mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.85V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $3.85V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

ELECTRICAL CHARACTERISTICS (Cont.)

UR6225-2.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=3.8V$	2.744	2.800	2.856	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=3.8V$, $V_{OUT(E)} \geq 2.52V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.8V$, $1mA \leq I_{OUT} \leq 76mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=76mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=152mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.8V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $3.8V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-2.7V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=3.7V$	2.646	2.700	2.754	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=3.7V$, $V_{OUT(E)} \geq 2.43V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.7V$, $1mA \leq I_{OUT} \leq 76mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=76mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=152mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.7V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $3.7V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

UR6225-2.6V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT(E)}$ (Note2)	$I_{OUT}=40mA$, $V_{IN}=3.6V$	2.548	2.600	2.652	V
Maximum Output Current	1	$I_{OUT(MAX)}$	$V_{IN}=3.6V$, $V_{OUT(E)} \geq 2.34V$	150			mA
Minimum Load Current		$I_{OUT(MIN)}$	$V_{IN}=V_{OUT}+1V$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.6V$, $1mA \leq I_{OUT} \leq 72mA$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=72mA$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=144mA$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.6V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $3.6V \leq V_{IN} \leq 10V$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5mA$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40mA$ $-40^{\circ}C \leq T_{OPR} \leq 85^{\circ}C$		± 100		ppm/ $^{\circ}C$

■ ELECTRICAL CHARACTERISTICS (Cont.)

UR6225-2.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=3.5\text{V}$	2.45	2.500	2.55	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=3.5\text{V}$, $V_{OUT}(E)\geq 2.25\text{V}$	125			mA
Minimum Load Current		$I_{OUT}(\text{MIN})$	$V_{IN}=V_{OUT}+1\text{V}$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.5\text{V}$, $1\text{mA}\leq I_{OUT}\leq 70\text{mA}$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=70\text{mA}$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=140\text{mA}$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.5\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.5\text{V}\leq V_{IN}\leq 10\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5\text{mA}$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $-40^{\circ}\text{C}\leq T_{OPR}\leq 85^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

UR6225-2.1V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=3.1\text{V}$	2.058	2.100	2.142	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=3.1\text{V}$, $V_{OUT}(E)\geq 1.89\text{V}$	125			mA
Minimum Load Current		$I_{OUT}(\text{MIN})$	$V_{IN}=V_{OUT}+1\text{V}$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.1\text{V}$, $1\text{mA}\leq I_{OUT}\leq 62\text{mA}$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=62\text{mA}$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=124\text{mA}$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.1\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.1\text{V}\leq V_{IN}\leq 10\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5\text{mA}$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $-40^{\circ}\text{C}\leq T_{OPR}\leq 85^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

UR6225-2.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=3.0\text{V}$	1.960	2.000	2.040	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=3.0\text{V}$, $V_{OUT}(E)\geq 1.8\text{V}$	100			mA
Minimum Load Current		$I_{OUT}(\text{MIN})$	$V_{IN}=V_{OUT}+1\text{V}$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.0\text{V}$, $1\text{mA}\leq I_{OUT}\leq 60\text{mA}$		45	90	mV
Input-Output Voltage	1	V_{DIF1}	$I_{OUT}=60\text{mA}$		180		mV
Differential(Note3)	1	V_{DIF2}	$I_{OUT}=120\text{mA}$		400		mV
Supply Current	2	I_{SS}	$V_{IN}=3.0\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.0\text{V}\leq V_{IN}\leq 10\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5\text{mA}$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $-40^{\circ}\text{C}\leq T_{OPR}\leq 85^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

■ ELECTRICAL CHARACTERISTICS(Cont.)

UR6225-1.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=2.8\text{V}$	1.764	1.800	1.836	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=2.8\text{V}$, $V_{OUT}(E)\geq 1.62\text{V}$	100			mA
Minimum Load Current		$I_{OUT}(\text{MIN})$	$V_{IN}=V_{OUT}+1\text{V}$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=2.8\text{V}$, $1\text{mA}\leq I_{OUT}\leq 60\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=56\text{mA}$		400		mV
	1	V_{DIF2}	$I_{OUT}=112\text{mA}$		600		mV
Supply Current	2	I_{SS}	$V_{IN}=2.8\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $2.8\text{V}\leq V_{IN}\leq 10\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5\text{mA}$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $-40^{\circ}\text{C}\leq T_{OPR}\leq 85^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

UR6225-1.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$	1.470	1.500	1.530	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=2.5\text{V}$, $V_{OUT}(E)\geq 1.35\text{V}$	100			mA
Minimum Load Current		$I_{OUT}(\text{MIN})$	$V_{IN}=V_{OUT}+1\text{V}$			50	μA
Load Stability	1	ΔV_{OUT}	$V_{IN}=2.5\text{V}$, $1\text{mA}\leq I_{OUT}\leq 60\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=56\text{mA}$		400		mV
	1	V_{DIF2}	$I_{OUT}=112\text{mA}$		600		mV
Supply Current	2	I_{SS}	$V_{IN}=2.5\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $2.5\text{V}\leq V_{IN}\leq 10\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}	$I_{OUT}=5\text{mA}$			10	V
Output Voltage Temperature Characteristics	1	$\frac{\Delta V_{OUT}}{\Delta T_{OPR} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $-40^{\circ}\text{C}\leq T_{OPR}\leq 85^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

Notes: 1. $V_{OUT}(T)$ =Specified Output Voltage.

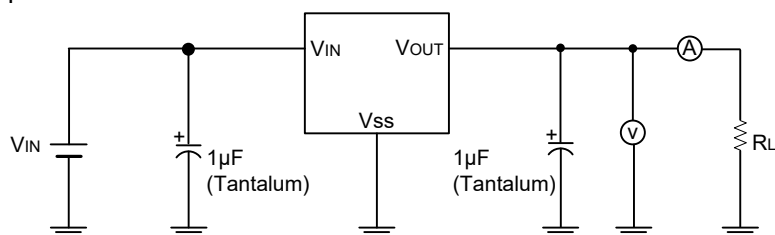
2. $V_{OUT}(E)$ =Effective Output Voltage (i.e. the output voltage when " $V_{OUT}(T)+1.0\text{V}$ " is provided at the V_{IN} pin while maintaining a certain I_{OUT} value).

3. $V_{DIF} = \{V_{IN1}(\text{Note4}) - V_{OUT}(E)\}$

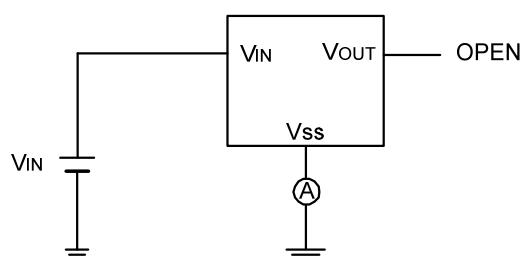
4. V_{IN1} = The input voltage at the time 98% of $V_{OUT}(E)$ is output (input voltage has been gradually reduced).

■ TEST CIRCUITS

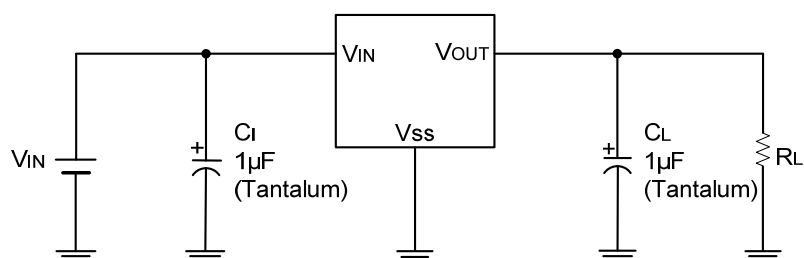
Circuit 1



Circuit 2

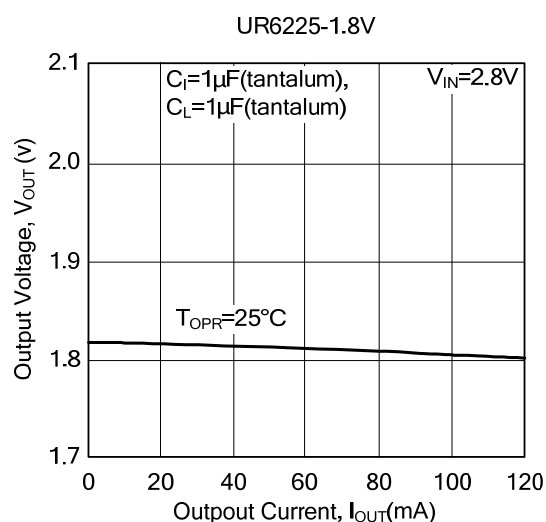
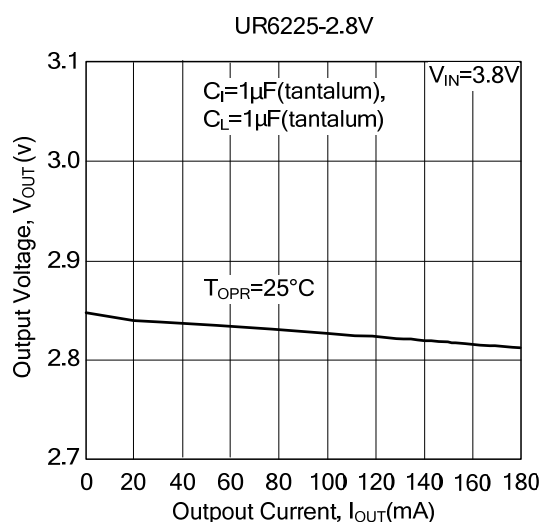
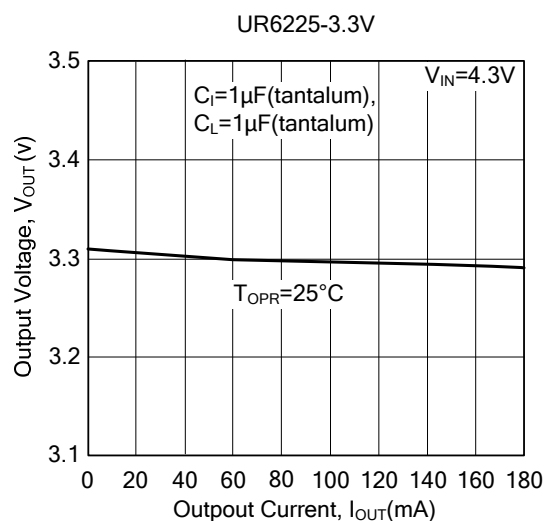
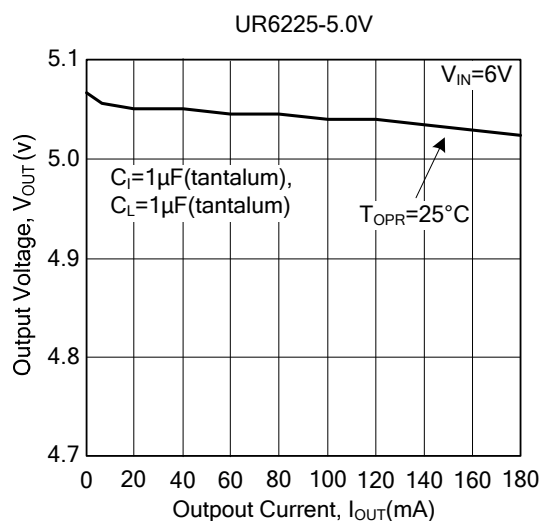


■ TYPICAL APPLICATION CIRCUIT

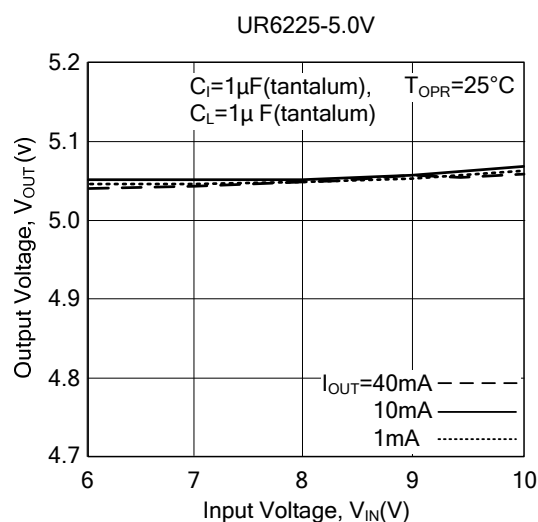
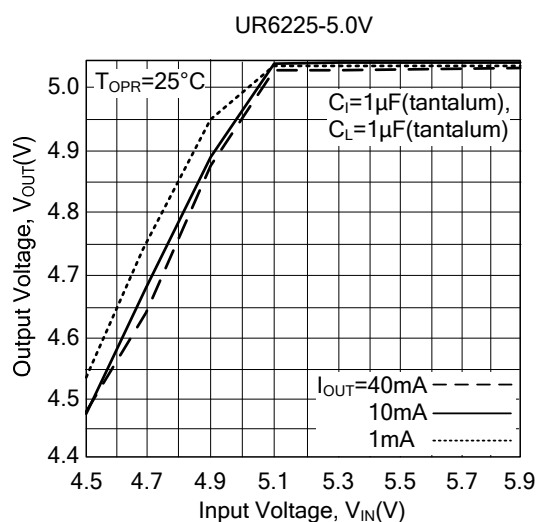


■ TYPICAL CHARACTERISTIC

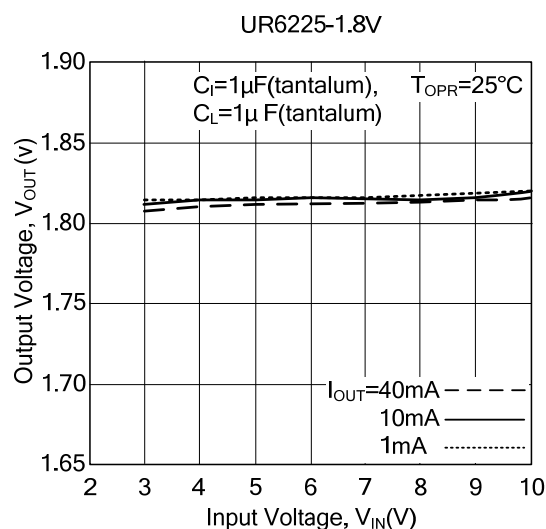
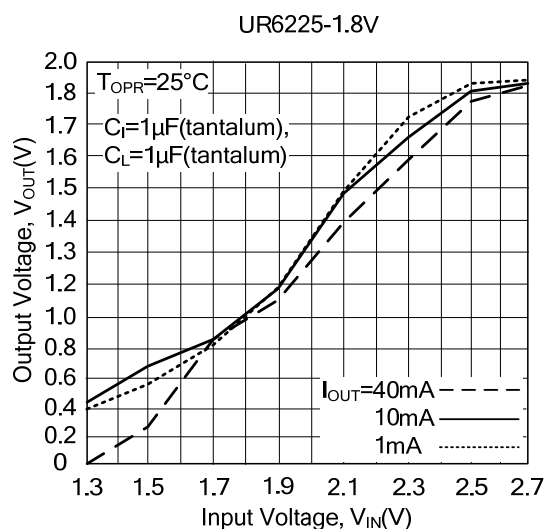
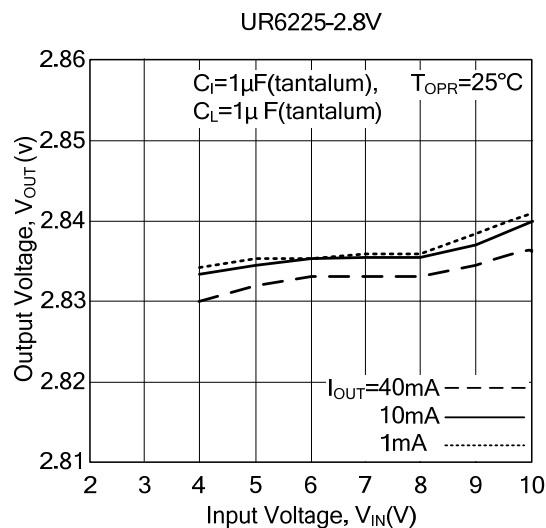
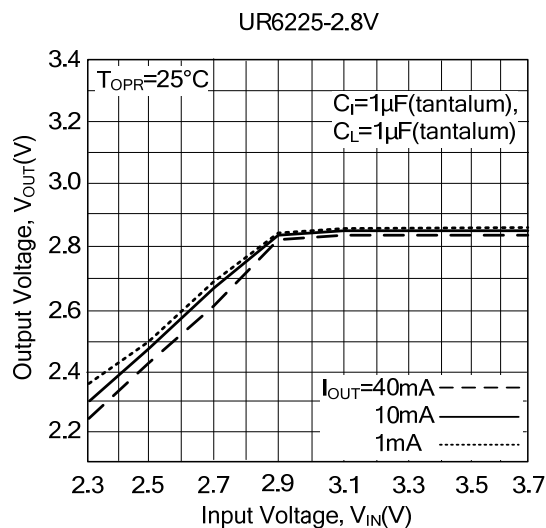
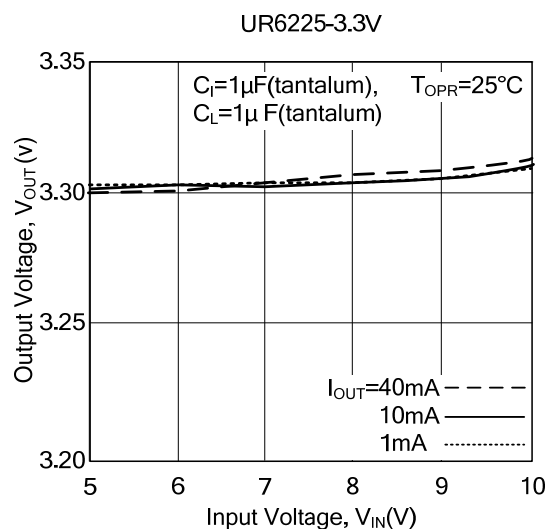
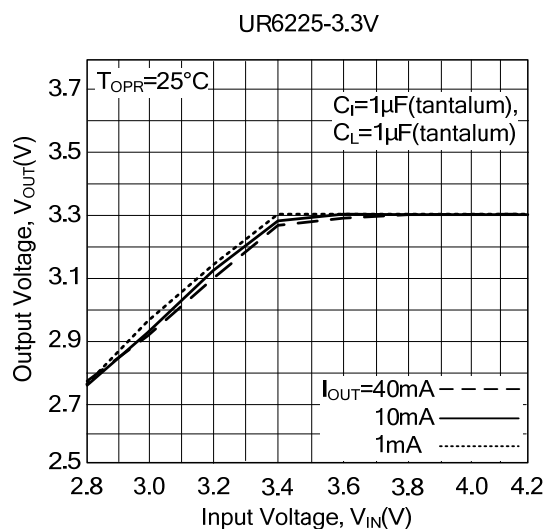
(1) OUTPUT VOLTAGE VS. OUTPUT CURRENT



(2) OUTPUT VOLTAGE VS. INPUT VOLTAGE

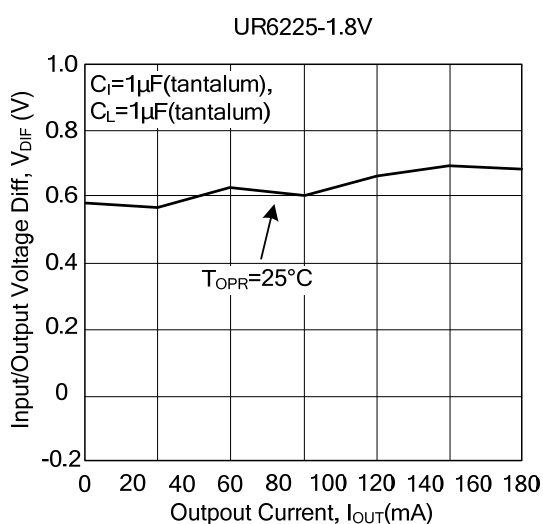
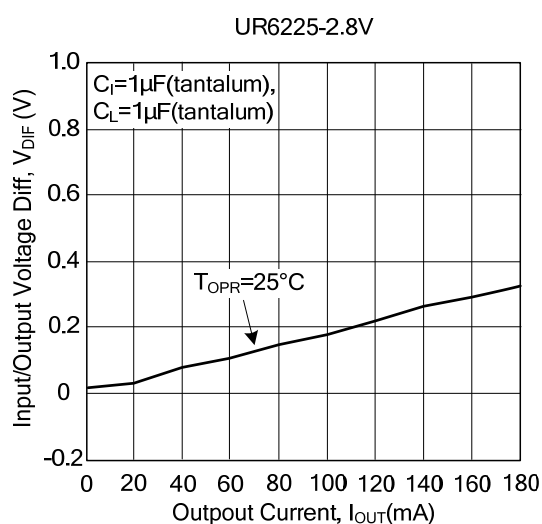
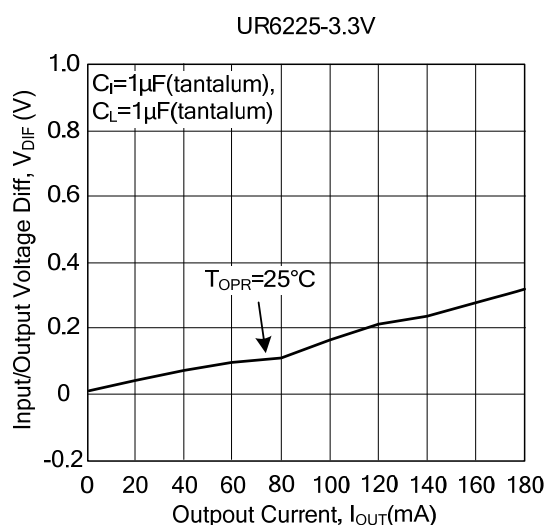
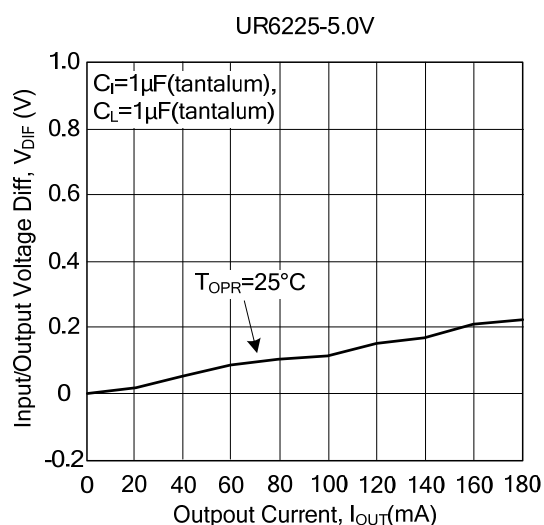


■ TYPICAL CHARACTERISTIC (Cont.)

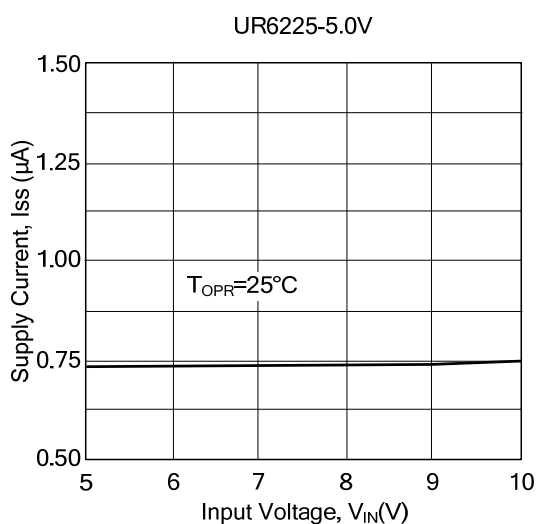
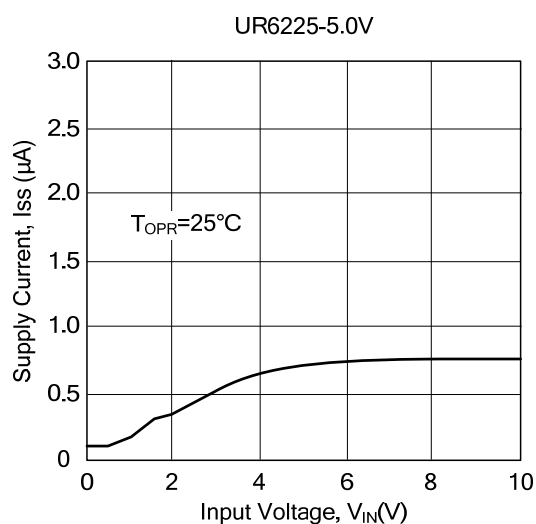


■ TYPICAL CHARACTERISTIC (Cont.)

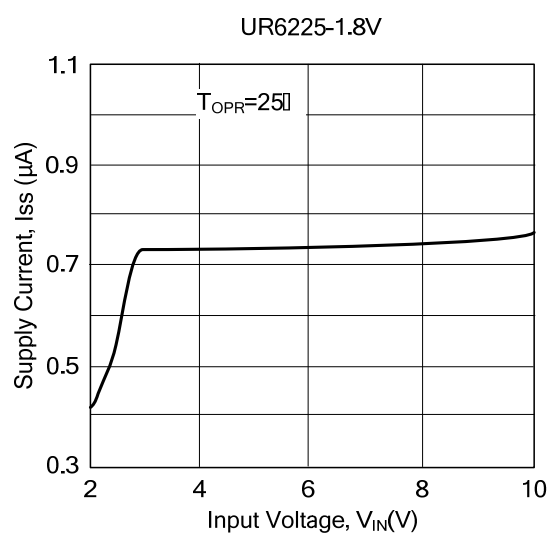
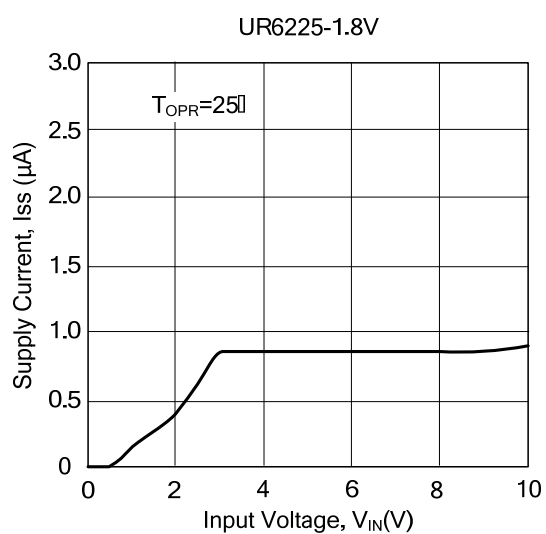
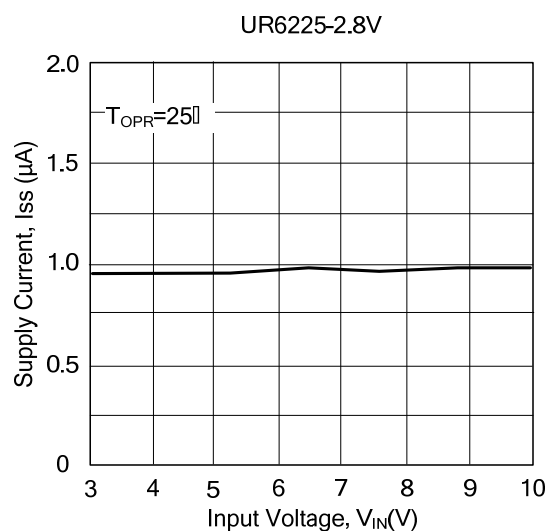
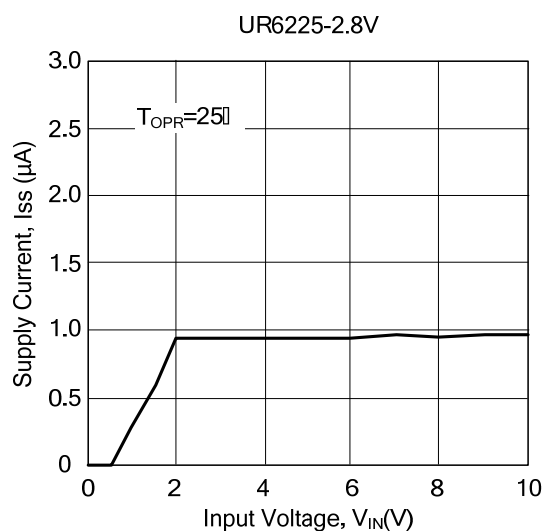
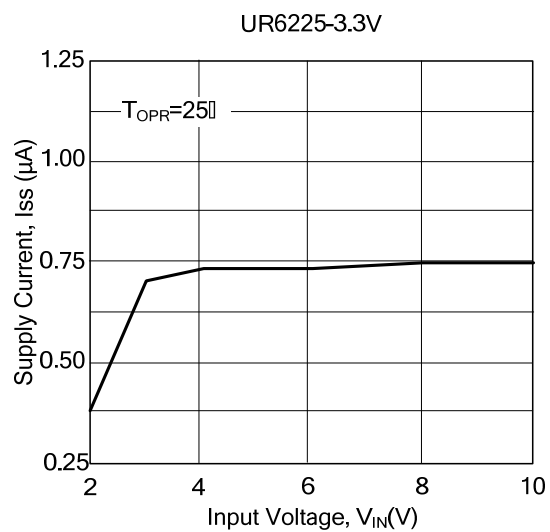
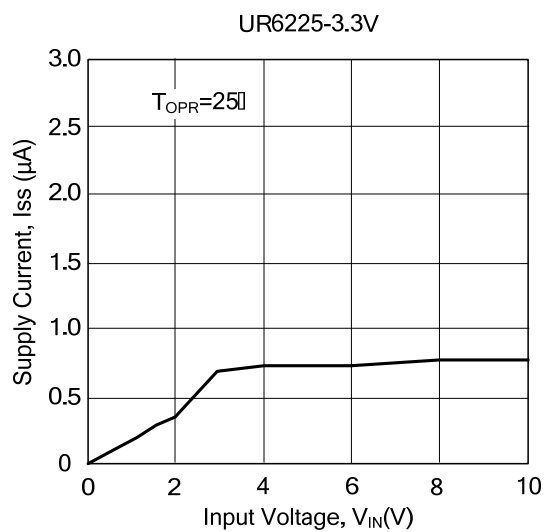
(3) INPUT/OUTPUT VOLTAGE DIFFERENTIAL VS. OUTPUT CURRENT



(4) SUPPLY CURRENT VS. INPUT VOLTAGE

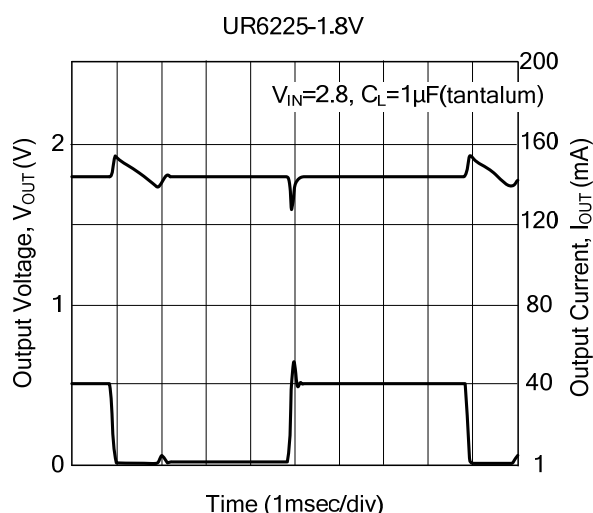
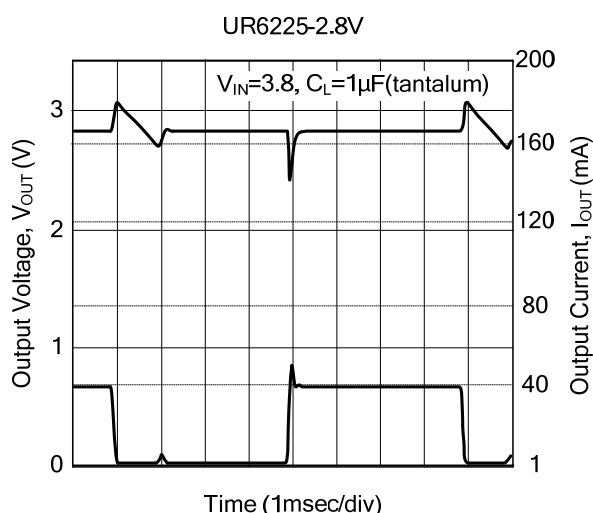
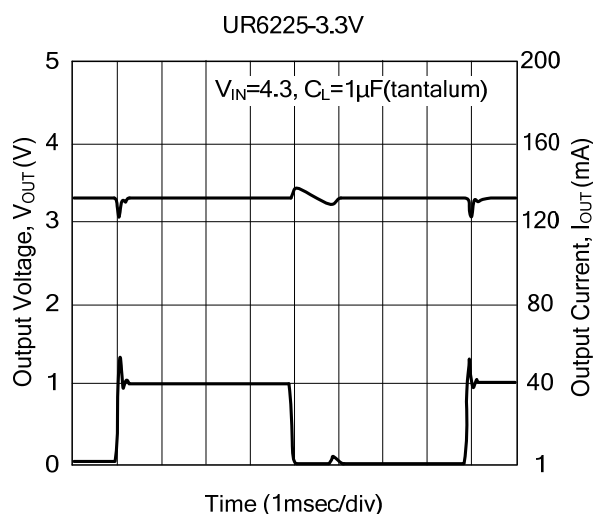
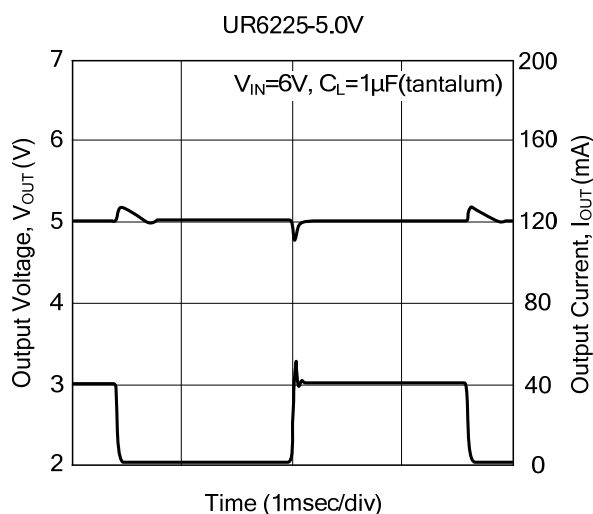


■ TYPICAL CHARACTERISTIC (Cont.)



■ TYPICAL CHARACTERISTIC (Cont.)

(5) LOAD TRANSIENT RESPONSE



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