


UNISONIC TECHNOLOGIES CO., LTD
UR6225
CMOS IC

POSITIVE VOLTAGE REGULATOR

DESCRIPTION

The UTC **UR6225** is a positive voltage output, three-pin regulator, that provide 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 response to load variations have improved in comparison to the existing series.

FEATURES

- * Maximum output current: 250mA
(within max. power dissipation, $V_{OUT} = 5.0V$)
- * Output voltage range: 1.2V ~ 6.0V in 0.1V increments
(1.2V ~ 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.
- * Over temperature protection

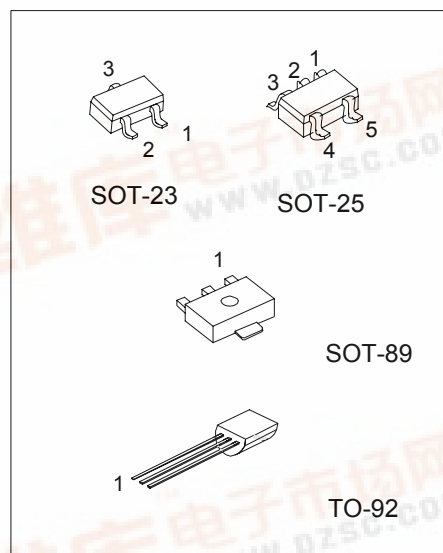
ORDERING INFORMATION

Order Number		Package	Pin Assignment					Packing
Normal	Lead Free Plating		1	2	3	4	5	
UR6225-xx-AB3-C-R	UR6225L-xx-AB3-C-R	SOT-89	G	I	O	-	-	Tape Reel
UR6225-xx-AE3-3-R	UR6225L-xx-AE3-3-R	SOT-23	O	G	I	-	-	Tape Reel
UR6225-xx-AF5-F-R	UR6225L-xx-AF5-F-R	SOT-25	G	I	O	N	N	Tape Reel
UR6225-xx-T92-C-K	UR6225L-xx-T92-C-K	TO-92	G	I	O	-	-	Bulk
UR6225-xx-T92-C-B	UR6225L-xx-T92-C-B	TO-92	G	I	O	-	-	Tape Box

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

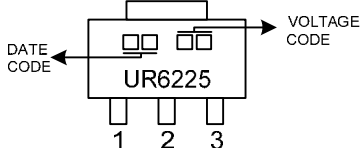
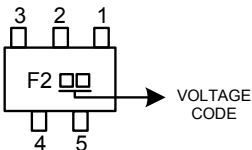
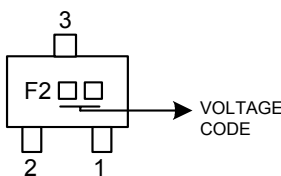
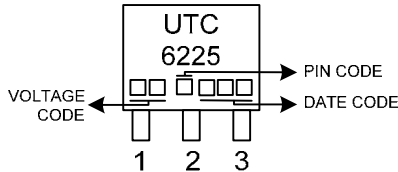
xx: Output Voltage, refer to Marking Information.

UR6225L-xx-AB3-C-R		(1)Packing Type (2)Pin Assignment (3)Package Type (4)Output Voltage Code (5)Lead Plating
		(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) L:Lead Free Plating, Blank:Pb/Sn

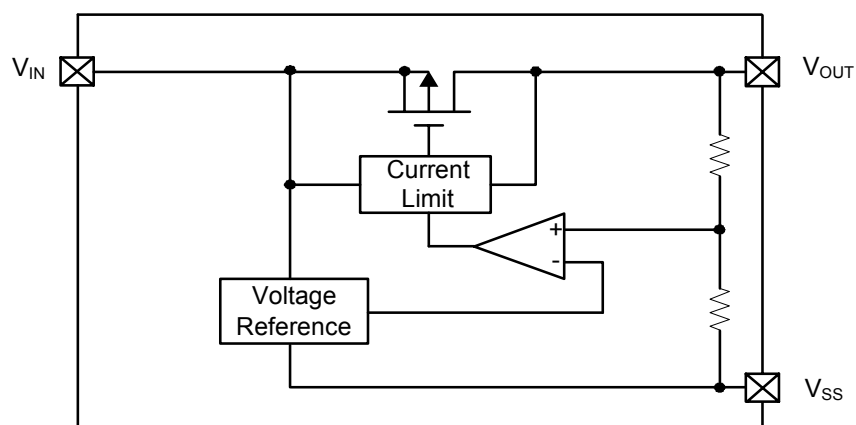


*Pb-free plating product number: UR6225L

MARKING INFORMATION

PACKAGE	VOLTAGE CODE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 4	MARKING
SOT-89	12:1.2V 15:1.5V 18:1.8V 20:2.0V 21:2.1V 25:2.5V 26:2.6V 27:2.7V 28:2.8V 2J:2.85V 30:3.0V 33:3.3V 35:3.5V 40:4.0V 45:4.5V 50:5.0V 60:6.0V	V _{SS}	V _{IN}	V _{OUT}	-	-	
SOT-25		V _{SS}	V _{IN}	V _{OUT}	NC	NC	
SOT-23		V _{OUT}	V _{SS}	V _{IN}	-	-	
TO-92		V _{SS}	V _{IN}	V _{OUT}	-	-	

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		V_{IN}	12	V
Output Current		I_{OUT}	500	mA
Output Voltage		V_{OUT}	$V_{SS}-0.3 \sim V_{IN}+0.3$	V
Continuous Total Power Dissipation	SOT-25	P_D	150	mW
	SOT-23		150	
	SOT-89		500	
	TO-92		300	
Junction Temperature		T_J	+125	°C
Operating Temperature		T_{OPR}	-40 ~ +85	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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 (Ta=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	$I_{OUT(MAX)}$	$V_{IN}=7.0V$ $V_{OUT(E)} \geq 4.5V$	250			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=7.0V$ $1mA \leq I_{OUT} \leq 100mA$		40	80	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100mA$		120	300	mV
	1	V_{DIF2}	$I_{OUT}=200mA$		380	600	mV
Supply Current	2	I_{SS}	$V_{IN}=7.0V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $7.0V \leq V_{IN} \leq 10.0V$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°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	$I_{OUT(MAX)}$	$V_{IN}=6.0V$ $V_{OUT(E)} \geq 4.5V$	250			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=6.0V$ $1mA \leq I_{OUT} \leq 100mA$		40	80	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100mA$		120	300	mV
	1	V_{DIF2}	$I_{OUT}=200mA$		380	600	mV
Supply Current	2	I_{SS}	$V_{IN}=6.0V$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40mA$ $6.0V \leq V_{IN} \leq 10.0V$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

■ ELECTRICAL CHARACTERISTICS(Cont.) (Ta=25°C, unless otherwise specified)

UR6225-4.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=5.5\text{V}$	4.410	4.500	4.59	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=5.5\text{V}$, $V_{OUT}(E)\geq 3.6\text{V}$	200			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=5.5\text{V}$ $1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100\text{mA}$		170	330	mV
	1	V_{DIF2}	$I_{OUT}=200\text{mA}$		400	630	mV
Supply Current	2	I_{SS}	$V_{IN}=5.5\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $5.5\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

UR6225-4.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=5.0\text{V}$	3.920	4.000	4.080	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=5.0\text{V}$, $V_{OUT}(E)\geq 3.6\text{V}$	200			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=5.0\text{V}$ $1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=100\text{mA}$		170	330	mV
	1	V_{DIF2}	$I_{OUT}=200\text{mA}$		400	630	mV
Supply Current	2	I_{SS}	$V_{IN}=5.0\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $5.0\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

UR6225-3.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=4.5\text{V}$	3.430	3.500	3.570	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=4.5\text{V}$, $V_{OUT}(E)\geq 2.97\text{V}$	165			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.5\text{V}$ $1\text{mA}\leq I_{OUT}\leq 86\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=172\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=4.5\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $4.5\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

■ ELECTRICAL CHARACTERISTICS(Cont.) (Ta=25°C, unless otherwise specified)

UR6225-3.3V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=4.3\text{V}$	3.234	3.300	3.366	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=4.3\text{V}$, $V_{OUT}(E)\geq 2.97\text{V}$	165			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.3\text{V}$ $1\text{mA}\leq I_{OUT}\leq 86\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=86\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=172\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=4.3\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $4.3\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

UR6225-3.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=4.0\text{V}$	2.940	3.000	3.060	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=4.0\text{V}$, $V_{OUT}(E)\geq 2.7\text{V}$	150			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=4.0\text{V}$ $1\text{mA}\leq I_{OUT}\leq 80\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=80\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=160\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=4.0\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $4.0\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

UR6225-2.85V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)(\text{Note2})$	$I_{OUT}=40\text{mA}$, $V_{IN}=3.85\text{V}$	2.793	2.85	2.907	V
Maximum Output Current	1	$I_{OUT}(\text{MAX})$	$V_{IN}=3.85\text{V}$, $V_{OUT}(E)\geq 2.565\text{V}$	150			mA
Load Stability	1	ΔV_{OUT}	$V_{IN}=3.85\text{V}$ $1\text{mA}\leq I_{OUT}\leq 77\text{mA}$		45	90	mV
Input-Output Voltage Differential(Note3)	1	V_{DIF1}	$I_{OUT}=77\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=154\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=3.85\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.85\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

■ **ELECTRICAL CHARACTERISTICS(Cont.)** (Ta=25°C, unless otherwise specified)

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)} ≥2.52V	150			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =3.8V 1mA≤I _{OUT} ≤76mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =76mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =152mA		400	700	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≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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

UR6225-2.7V (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)} ≥2.52V	150			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =3.7V 1mA≤I _{OUT} ≤76mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =76mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =152mA		400	700	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≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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

UR6225-2.6V (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)} ≥2.34V	150			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =3.6V 1mA≤I _{OUT} ≤72mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =72mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =144mA		400	700	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≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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.) (Ta=25°C, unless otherwise specified)

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
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 Differential(Note3)	1	V_{DIF1}	$I_{OUT}=70\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=140\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=3.5\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.5\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°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
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 Differential(Note3)	1	V_{DIF1}	$I_{OUT}=62\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=124\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=3.1\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.1\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°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
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 Differential(Note3)	1	V_{DIF1}	$I_{OUT}=60\text{mA}$		180	360	mV
	1	V_{DIF2}	$I_{OUT}=120\text{mA}$		400	700	mV
Supply Current	2	I_{SS}	$V_{IN}=3.0\text{V}$		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT}=40\text{mA}$ $3.0\text{V}\leq V_{IN}\leq 10.0\text{V}$		0.2	0.3	%/V
Input Voltage		V_{IN}				10	V
Thermal Shutdown					150		°C
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/°C

ELECTRICAL CHARACTERISTICS(Cont.) (Ta=25°C, unless otherwise specified)

UR6225-1.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V _{OUT(E)} (Note2)	I _{OUT} =40mA, V _{IN} =2.8V	1.764	1.800	1.836	V
Maximum Output Current	1	I _{OUT(MAX)}	V _{IN} =2.8V, V _{OUT(E)} ≥1.62V	100			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =2.8V 1mA≤I _{OUT} ≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =56mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =112mA		400	700	mV
Supply Current	2	I _{SS}	V _{IN} =2.8V		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I _{OUT} =40mA 2.8V≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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

UR6225-1.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V _{OUT(E)} (Note2)	I _{OUT} =40mA, V _{IN} =2.5V	1.470	1.500	1.530	V
Maximum Output Current	1	I _{OUT(MAX)}	V _{IN} =2.5V, V _{OUT(E)} ≥1.62V	100			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =2.5V 1mA≤I _{OUT} ≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =56mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =112mA		400	700	mV
Supply Current	2	I _{SS}	V _{IN} =2.5V		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I _{OUT} =40mA 2.5V≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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

UR6225-1.2V (Note1)

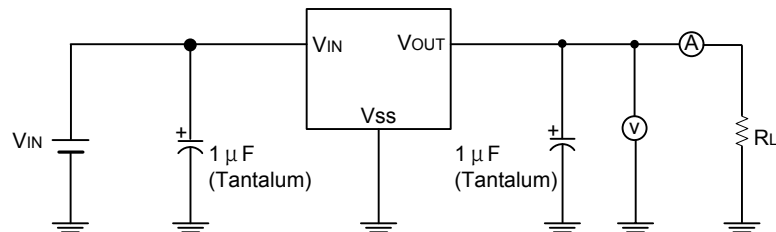
PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V _{OUT(E)} (Note2)	I _{OUT} =40mA, V _{IN} =2.5V	1.176	1.200	1.224	V
Maximum Output Current	1	I _{OUT(MAX)}	V _{IN} =2.2V, V _{OUT(E)} ≥1.62V	100			mA
Load Stability	1	ΔV _{OUT}	V _{IN} =2.2V 1mA≤I _{OUT} ≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	V _{DIF1}	I _{OUT} =56mA		180	360	mV
	1	V _{DIF2}	I _{OUT} =112mA		400	700	mV
Supply Current	2	I _{SS}	V _{IN} =2.2V		2.0	4.5	μA
Input Stability	1	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I _{OUT} =40mA 2.2V≤V _{IN} ≤10.0V		0.2	0.3	%/V
Input Voltage		V _{IN}				10	V
Thermal Shutdown					150		°C
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

Note:

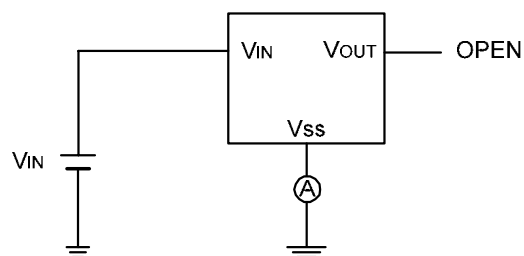
1. V_{OUT(T)}=Specified Output Voltage.
2. V_{OUT(E)}=Effective Output Voltage (i.e. the output voltage when "V_{OUT(T)}+1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value).
3. V_{DIF}= {V_{IN1}^(Note4)-V_{OUT(E)}}
4. V_{IN1}= The input voltage at the time 98% of V_{OUT(E)} is output (input voltage has been gradually reduced).

■ TEST CIRCUITS

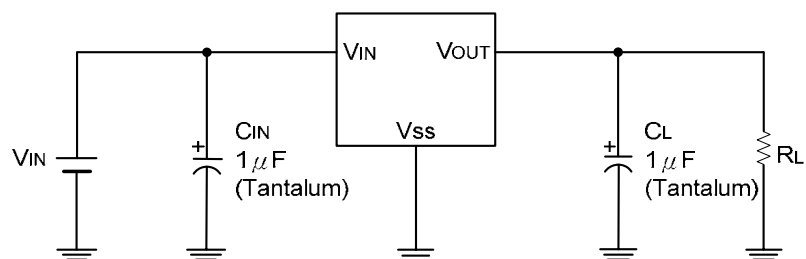
Circuit 1



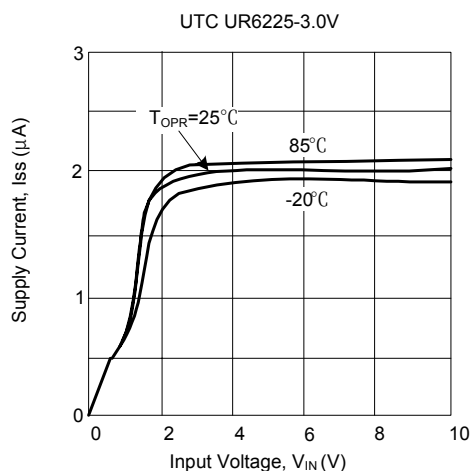
Circuit 2



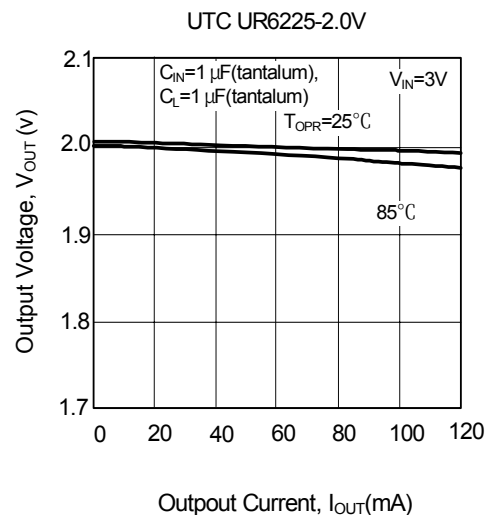
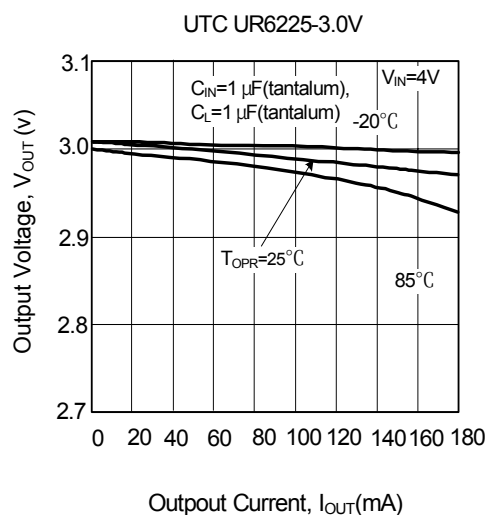
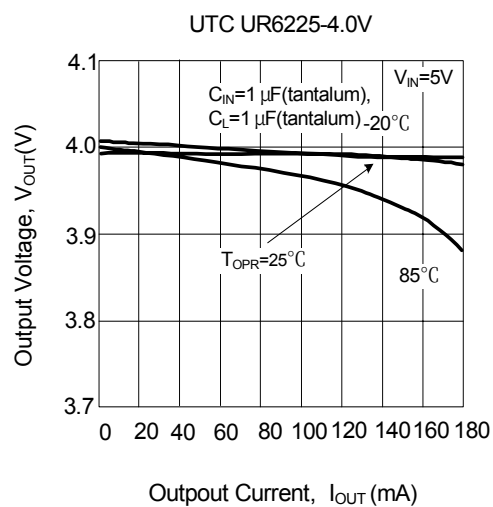
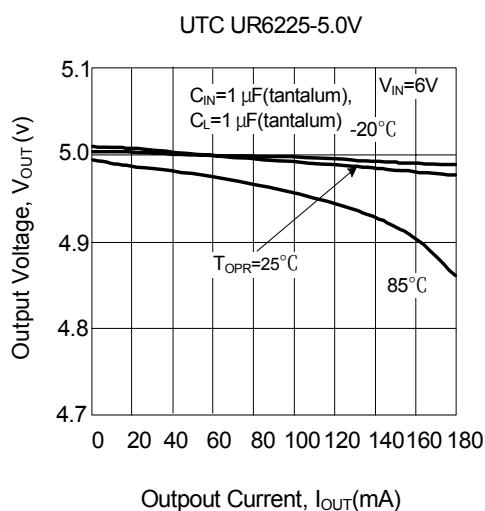
■ TYPICAL APPLICATION CIRCUIT



TYPICAL CHARACTERISTIC



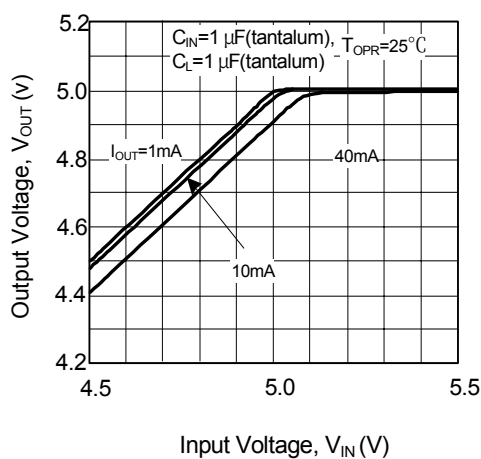
(1) OUTPUT VOLTAGE VS. OUTPUT CURRENT



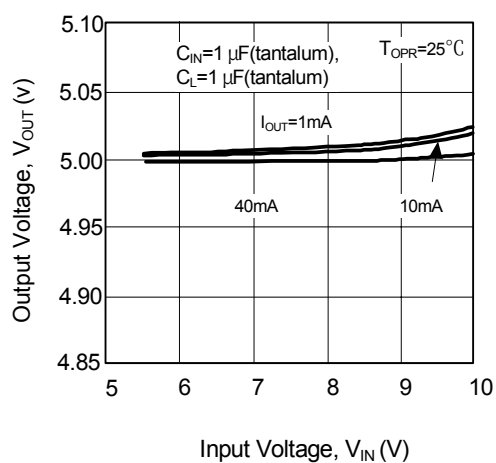
TYPICAL CHARACTERISTIC(Cont.)

(2) OUTPUT VOLTAGE VS. INPUT VOLTAGE

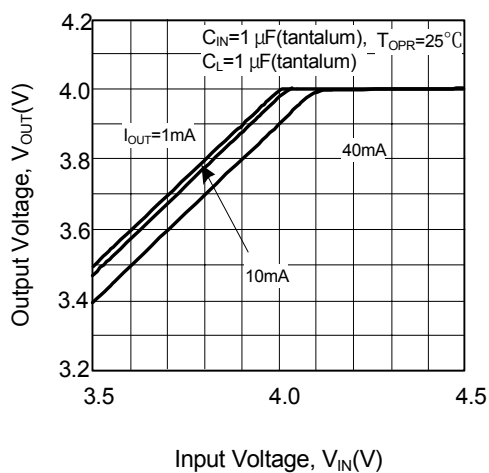
UTC UR6225-5.0V



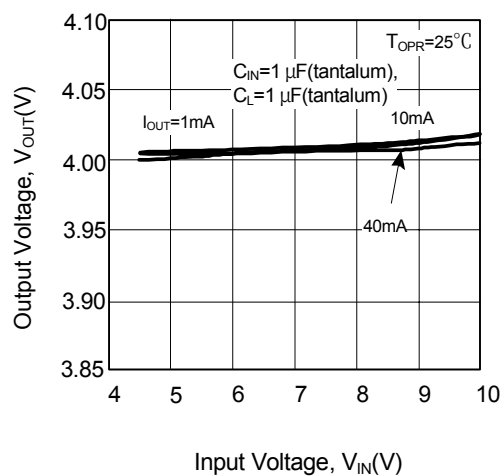
UTC UR6225-5.0V



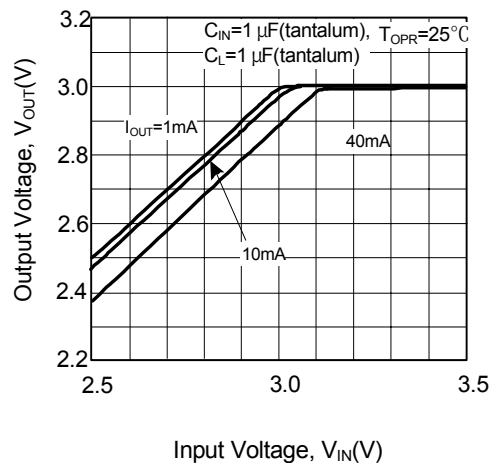
UTC UR6225-4.0V



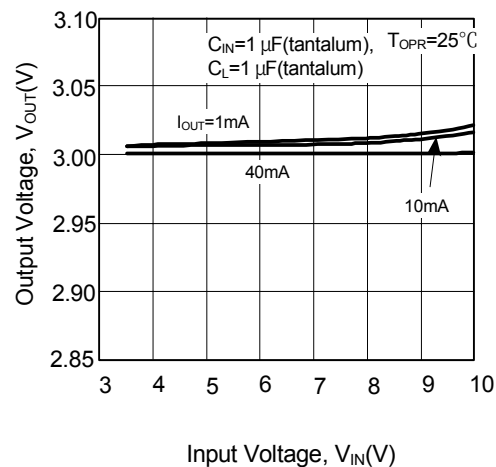
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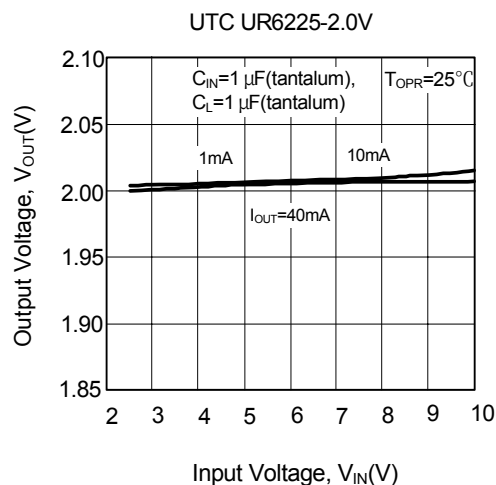
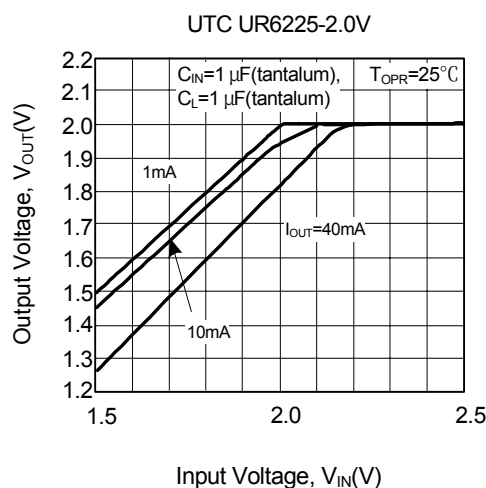
UTC UR6225-3.0V



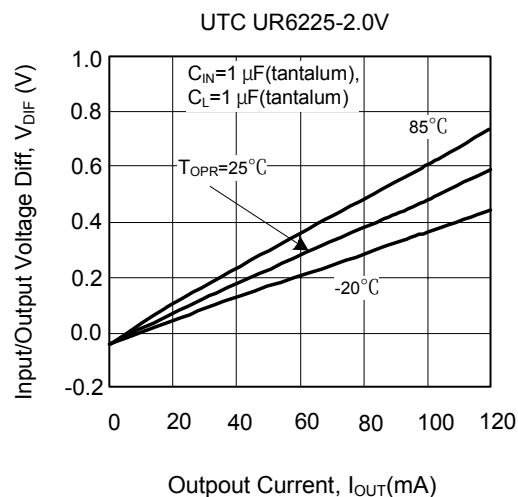
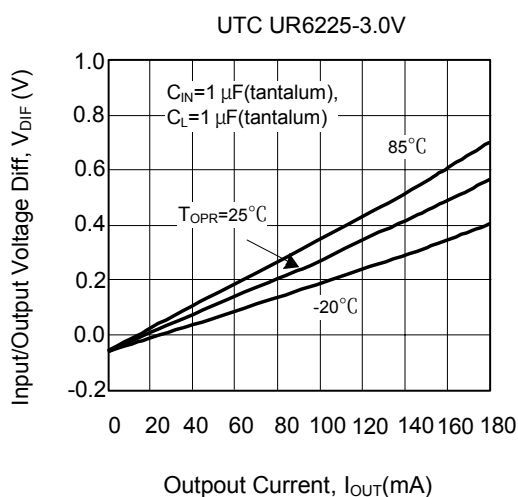
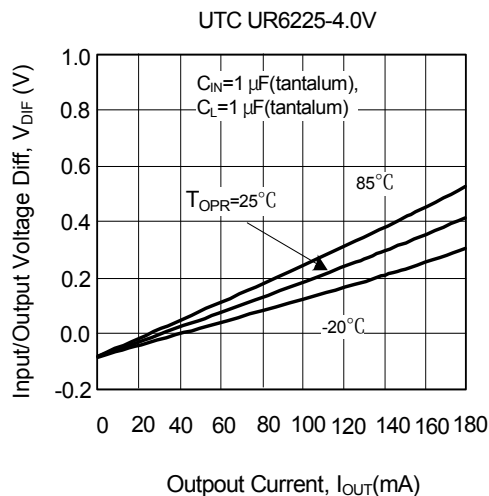
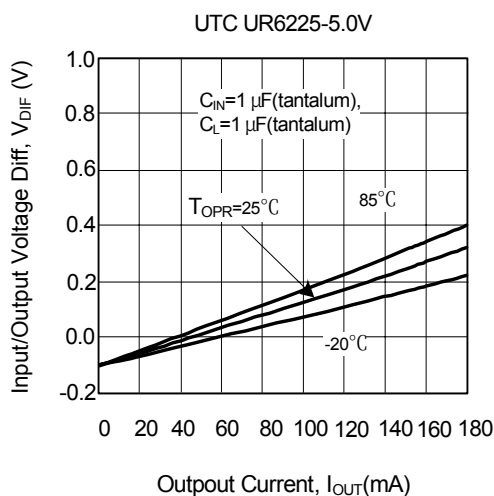
UTC UR6225-3.0V



■ TYPICAL CHARACTERISTIC(Cont.)

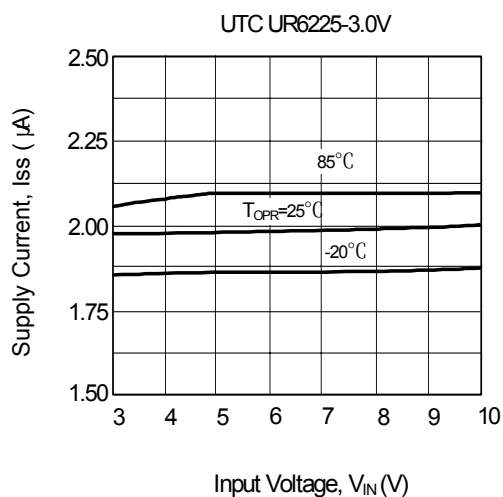
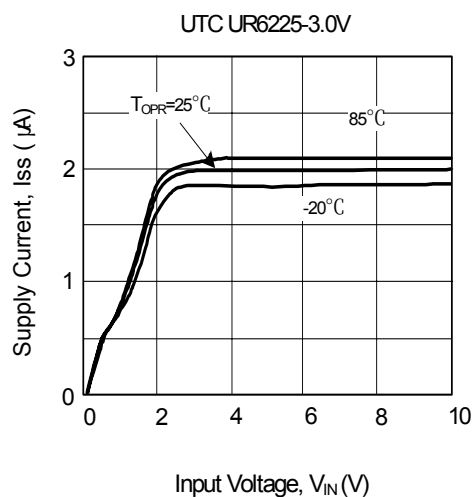
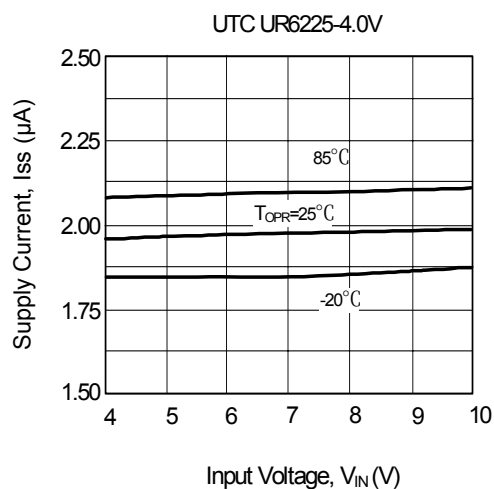
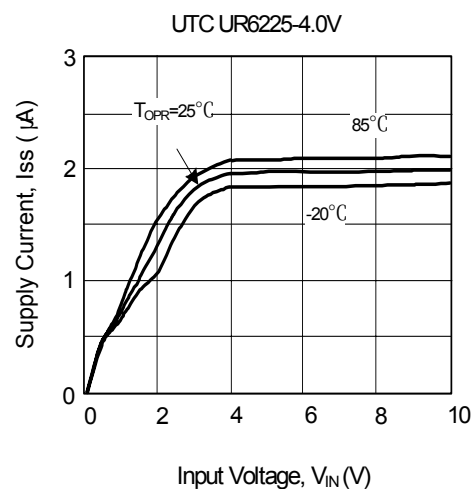
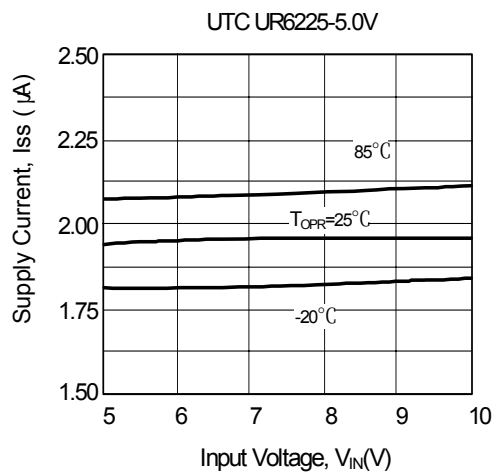
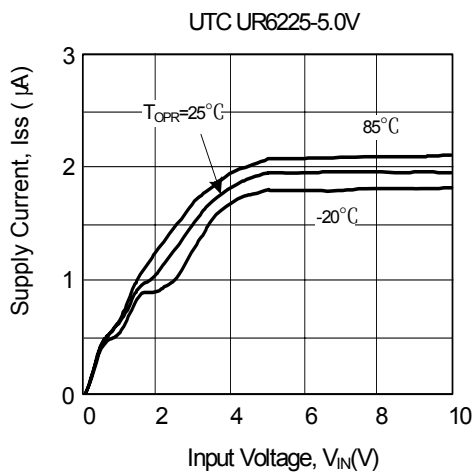


(3) INPUT/OUTPUT VOLTAGE DIFFERENTIAL VS. OUTPUT CURRENT

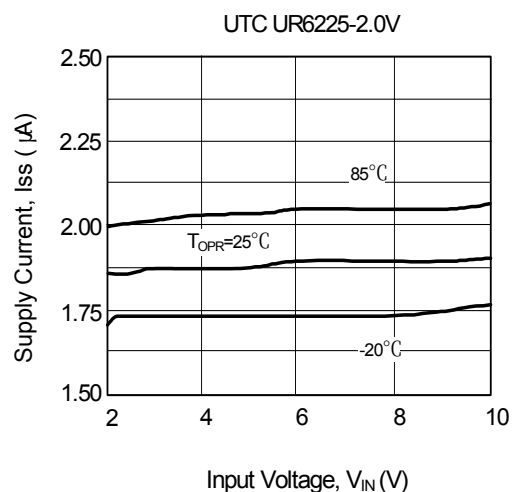
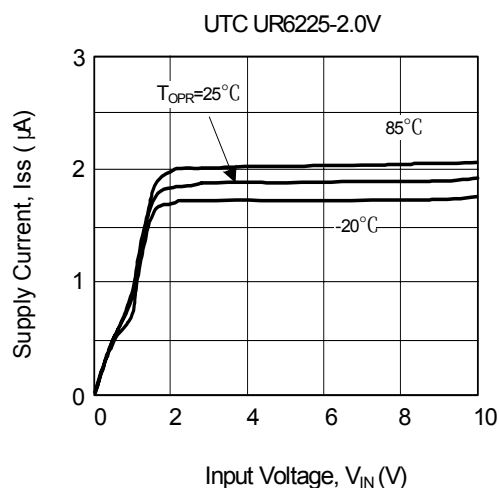


■ TYPICAL CHARACTERISTIC(Cont.)

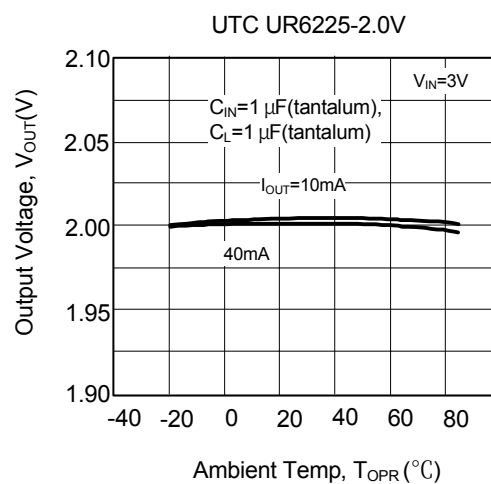
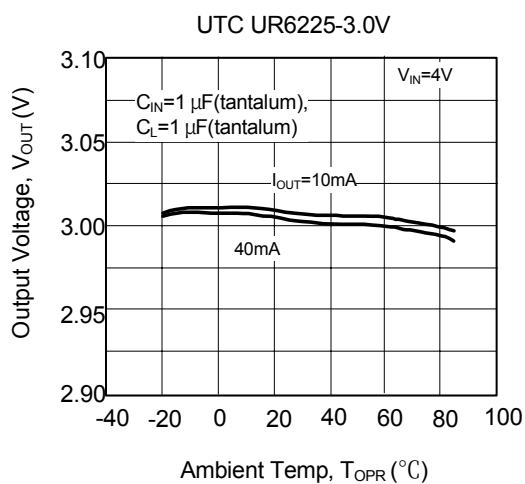
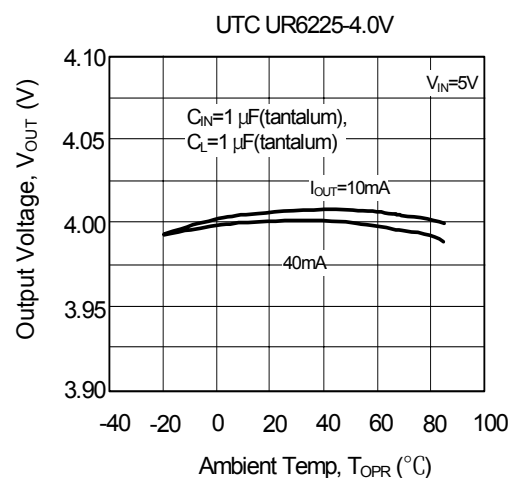
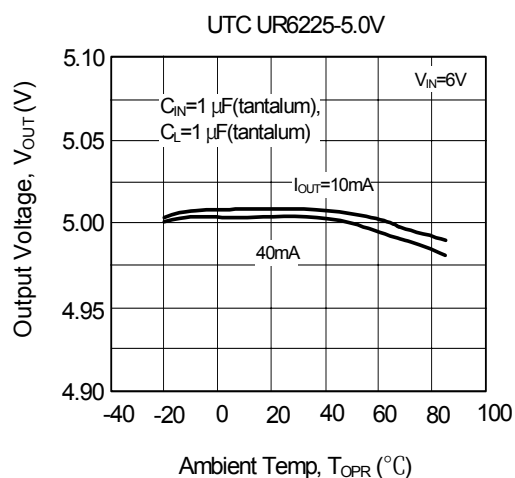
(4) SUPPLY CURRENT VS. INPUT VOLTAGE



■ TYPICAL CHARACTERISTIC(Cont.)

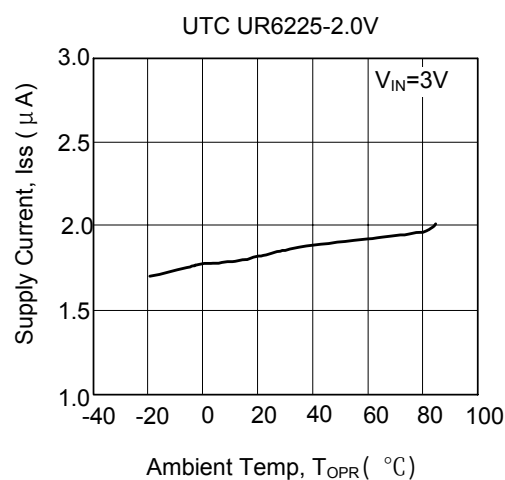
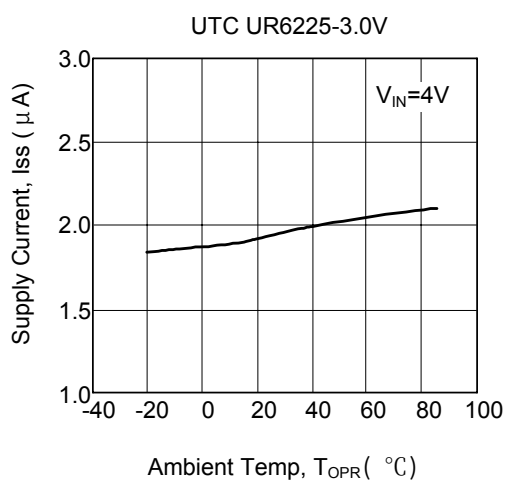
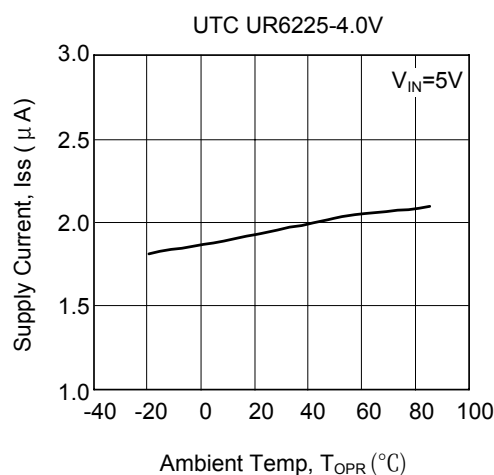
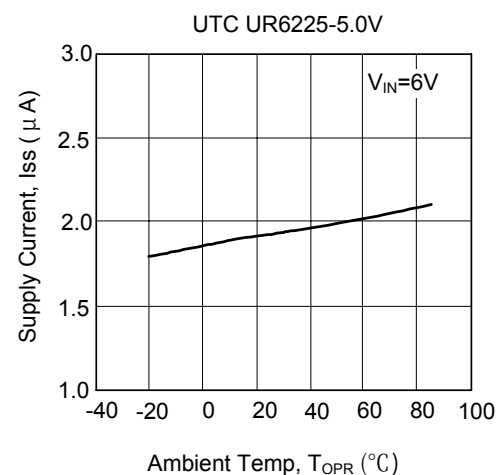


(5) OUTPUT VOLTAGE VS. AMBIENT TEMPERATURE

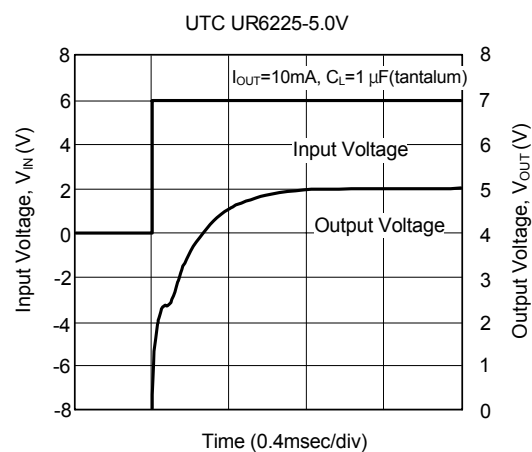
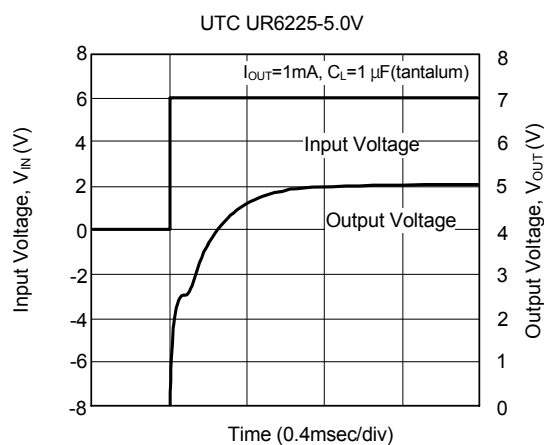


TYPICAL CHARACTERISTIC(Cont.)

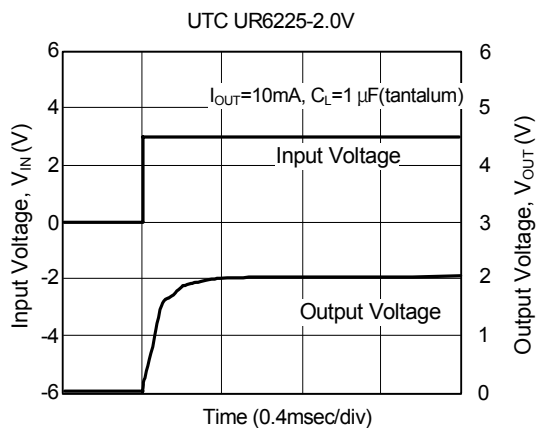
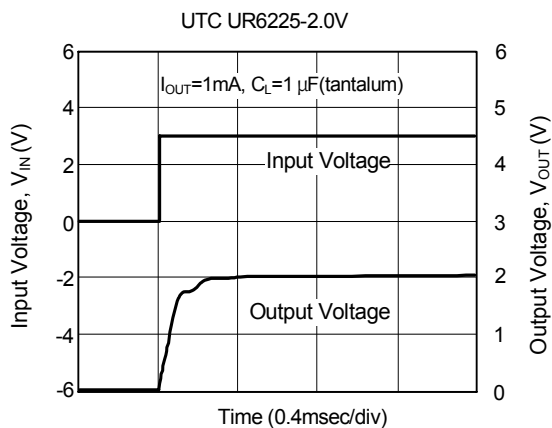
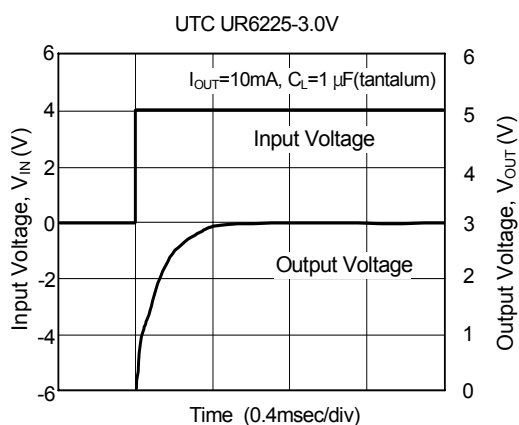
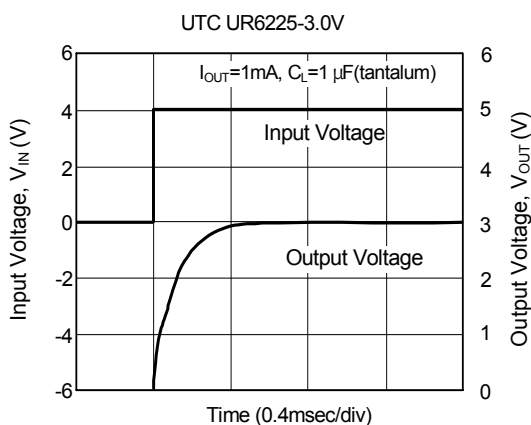
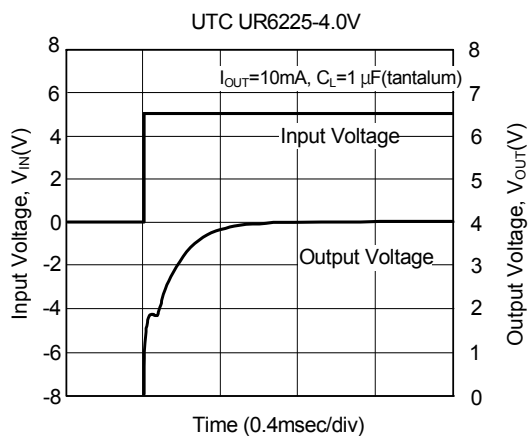
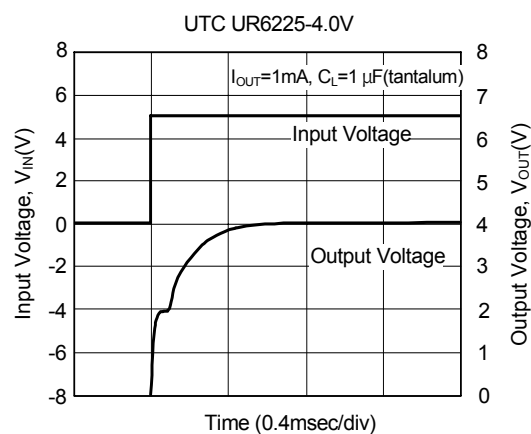
(6) SUPPLY CURRENT VS. AMBIENT TEMPERATURE



(7) INPUT TRANSIENT RESPONSE 1

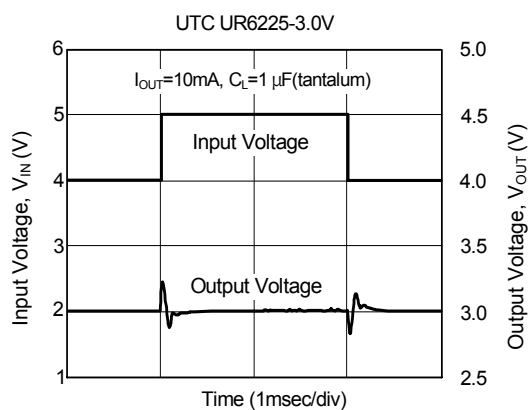
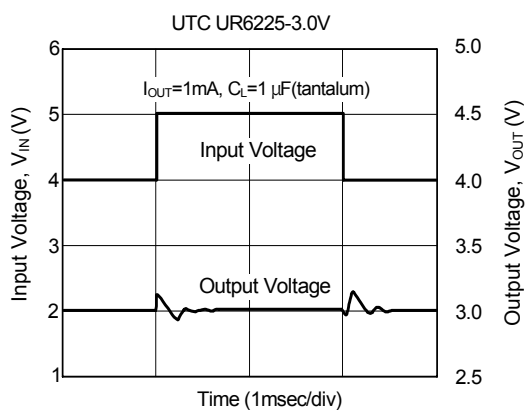
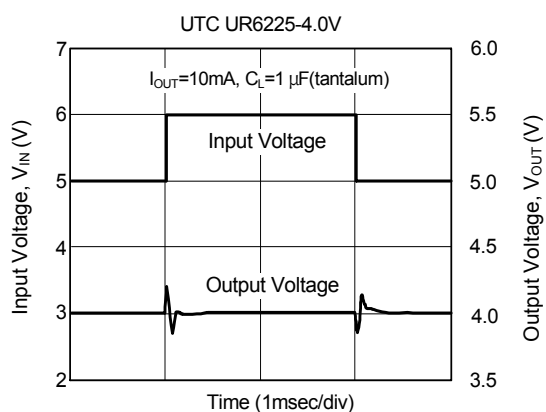
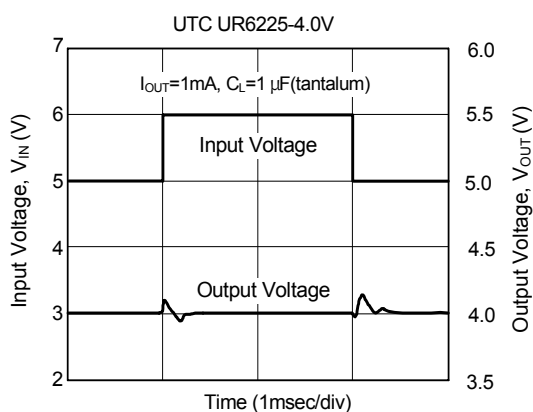
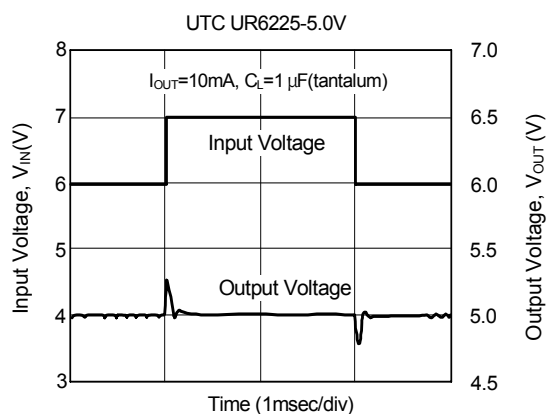
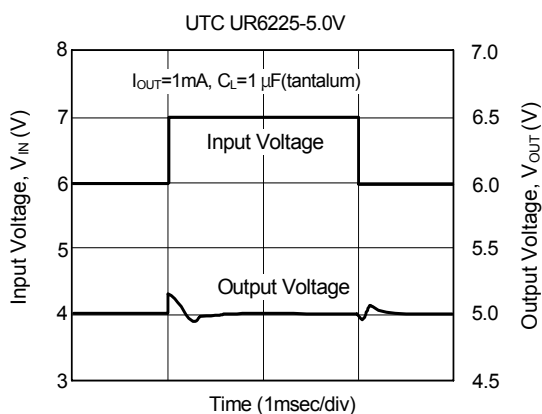


■ TYPICAL CHARACTERISTIC(Cont.)

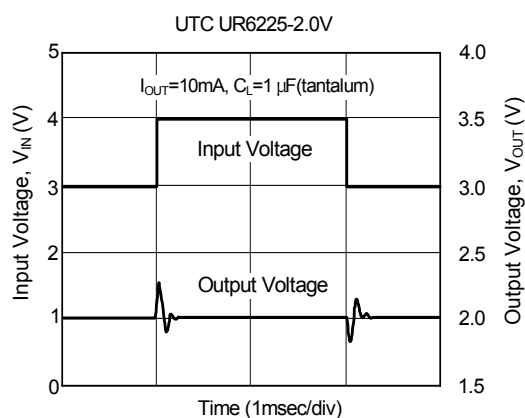
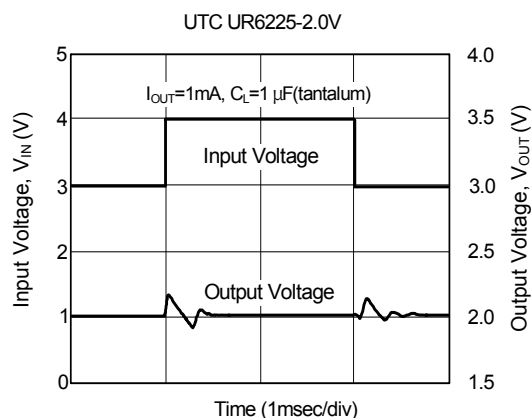


■ TYPICAL CHARACTERISTIC(Cont.)

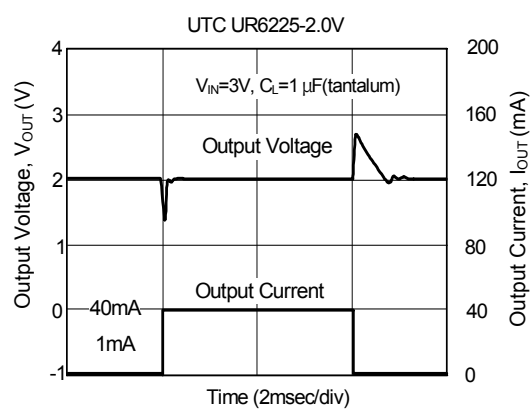
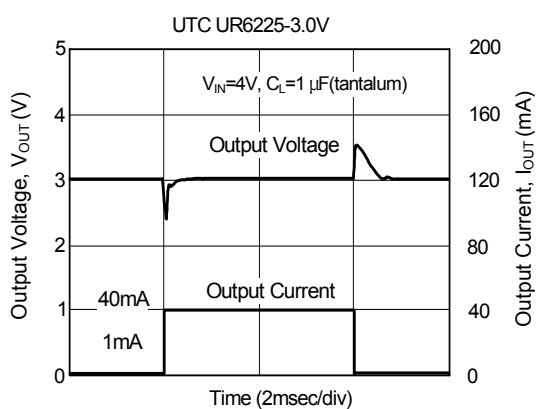
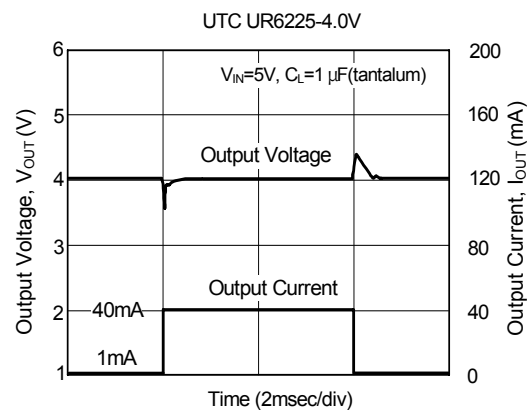
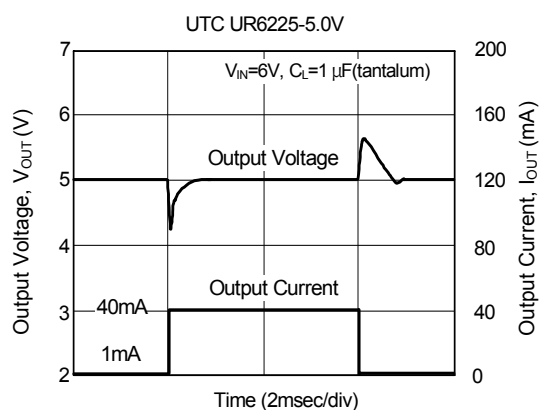
(8) INPUT TRANSIENT RESPONSE 2



■ TYPICAL CHARACTERISTIC(Cont.)

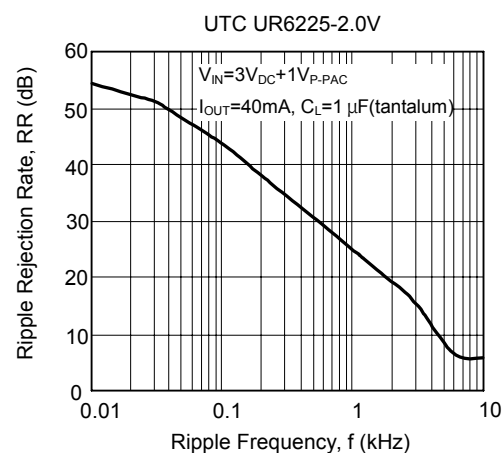
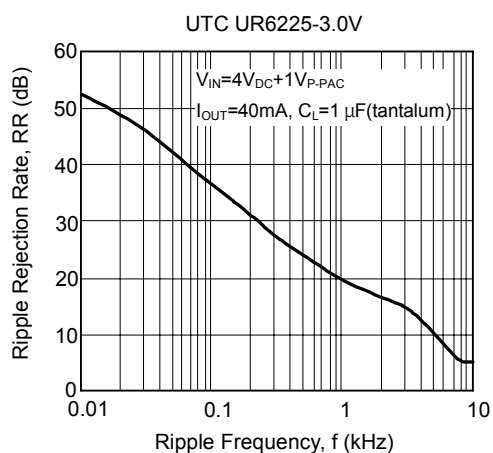
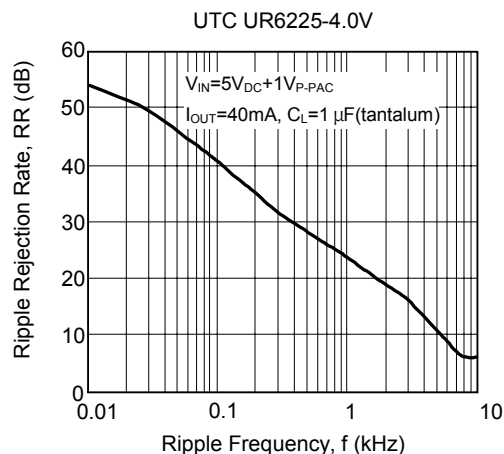
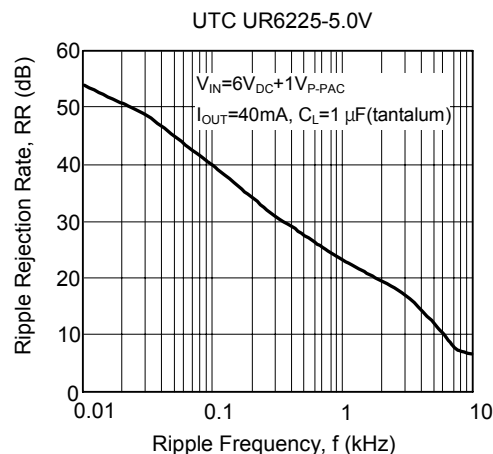


(9) LOAD TRANSIENT RESPONSE



■ TYPICAL CHARACTERISTIC(Cont.)

(10) RIPPLE REJECTION RATE



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