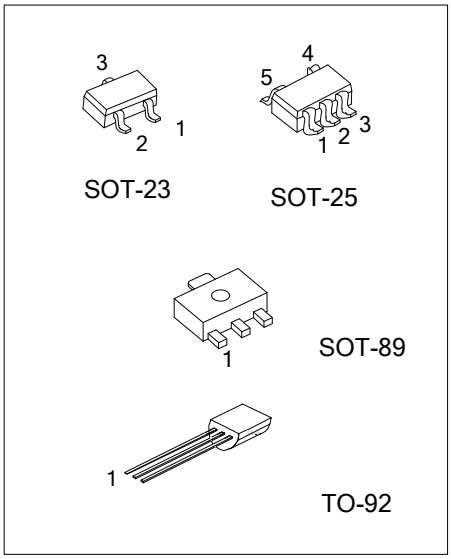
UR6225

CMOS IC

POSITIVE VOLTAGE REGULATOR



Lead-free: UR6225L
Halogen-free: UR6225G

■ 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: 300mA
  (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 ±2%
  (±1% for semi-custom products)
* Low power consumption: Typ. 2.0μA @ V_{OUT}=5.0V
* Output voltage temperature characteristics :
  Typ. ±100ppm/°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

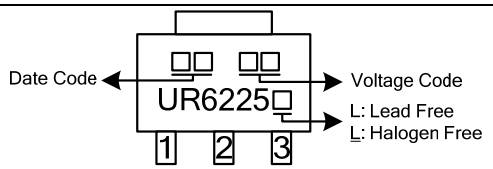
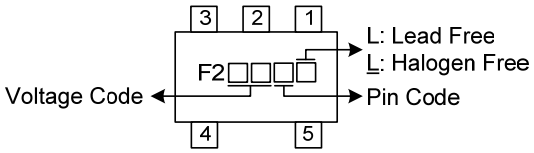
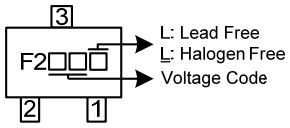
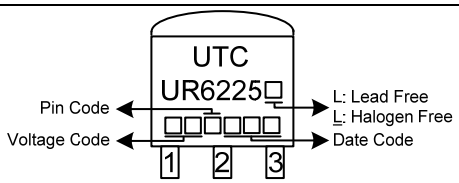
Ordering Number			Package	Pin Assignment					Packing
Normal	Lead Free	Halogen Free		1	2	3	4	5	
UR6225-xx-AB3-C-R	UR6225L-xx-AB3-C-R	UR6225G-xx-AB3-C-R	SOT-89	G	I	O	-	-	Tape Reel
UR6225-xx-AE3-3-R	UR6225L-xx-AE3-3-R	UR6225G-xx-AE3-3-R	SOT-23	O	G	I	-	-	Tape Reel
UR6225-xx-AF5-C-R	UR6225L-xx-AF5-C-R	UR6225G-xx-AF5-C-R	SOT-25	I	G	N	N	O	Tape Reel
UR6225-xx-AF5-F-R	UR6225L-xx-AF5-F-R	UR6225G-xx-AF5-F-R	SOT-25	G	I	O	N	N	Tape Reel
UR6225-xx-T92-C-K	UR6225L-xx-T92-C-K	UR6225G-xx-T92-C-K	TO-92	G	I	O	-	-	Bulk
UR6225-xx-T92-C-B	UR6225L-xx-T92-C-B	UR6225G-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.

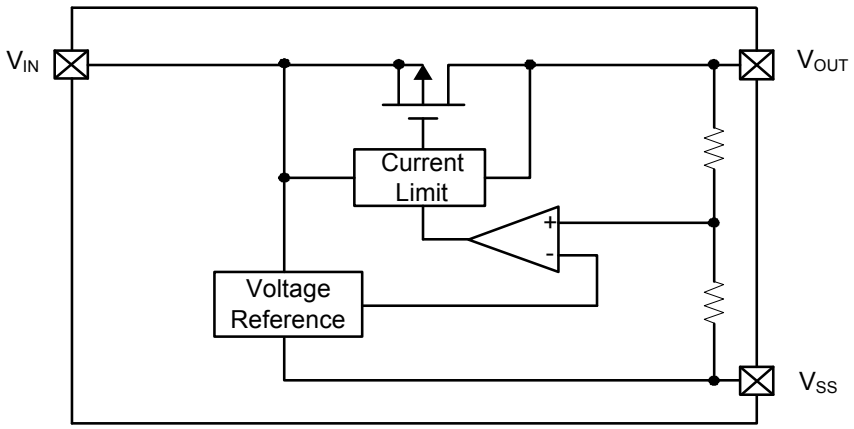
UR6225L-xx-AB3-C-R
(1)Packing Type
(2)Pin Assignment
(3)Package Type
(4)Output Voltage Code
(5)Lead Plating

(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) G: Halogen Free, L: Lead Free,
Blank: Pb/Sn

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	12:1.2V 13:1.3V 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 36:3.6V 38:3.8V 40:4.0V 45:4.5V 50:5.0V 60:6.0V	
SOT-25		
SOT-23		
TO-92		

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

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
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}=0~40mA, 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
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=7.0V 1mA≤I_{OUT}≤100mA		40	80	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=100mA		120	300	mV
	1	$V_{DIF}2$	I_{OUT}=200mA		380	600	mV
Supply Current	2	I_{SS}	V_{IN}=7.0V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 7.0V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	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}=0~40mA, 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
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=6.0V 1mA≤I_{OUT}≤100mA		40	80	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=100mA		120	300	mV
	1	$V_{DIF}2$	I_{OUT}=200mA		380	600	mV
Supply Current	2	I_{SS}	V_{IN}=6.0V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 6.0V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-4.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V_{OUT}(E)(Note2)	I_{OUT}=0~40mA, 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)≥4.05V	200			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=5.5V 1mA≤I_{OUT}≤100mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=100mA		170	330	mV
	1	$V_{DIF}2$	I_{OUT}=200mA		400	630	mV
Supply Current	2	I_{SS}	V_{IN}=5.5V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 5.5V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-4.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V_{OUT}(E)(Note2)	I_{OUT}=0~40mA, 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)≥3.6V	200			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=5.0V 1mA≤I_{OUT}≤100mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=100mA		170	330	mV
	1	$V_{DIF}2$	I_{OUT}=200mA		400	630	mV
Supply Current	2	I_{SS}	V_{IN}=5.0V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 5.0V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-3.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V_{OUT}(E)(Note2)	I_{OUT}=0~40mA, 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)≥3.42V	165			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=4.8V 1mA≤I_{OUT}≤86mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=86mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=172mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=4.8V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 4.8V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-3.6V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=4.6V	3.528	3.600	3.672	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=4.6V,$V_{OUT}(E)$≥3.24V	165			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=4.6V 1mA≤I_{OUT}≤86mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=86mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=172mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=4.6V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 4.6V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-3.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=4.5V	3.430	3.500	3.570	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=4.5V,$V_{OUT}(E)$≥3.15V	165			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=4.5V 1mA≤I_{OUT}≤86mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=86mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=172mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=4.5V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 4.5V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-3.3V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=4.3V	3.234	3.300	3.366	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=4.3V,$V_{OUT}(E)$≥2.97V	165			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=4.3V 1mA≤I_{OUT}≤86mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=86mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=172mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=4.3V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 4.3V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-3.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=4.0V	2.940	3.000	3.060	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=4.0V,$V_{OUT}(E)$≥2.7V	150			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=4.0V 1mA≤I_{OUT}≤80mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=80mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=160mA		400	700	mV
Supply Current	2	Iss	V_{IN}=4.0V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OU}T=40mA 4.0V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-2.85V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=3.85V	2.793	2.85	2.907	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=3.85V,$V_{OUT}(E)$≥2.565V	150			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=3.85V 1mA≤I_{OU}T≤77mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=77mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=154mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.85V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.85V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-2.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, 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	$\triangle V_{OUT}$	V_{IN}=3.8V 1mA≤I_{OUT}≤76mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=76mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=152mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.8V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.8V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-2.7V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V_{OUT}(E)(Note2)	I_{OUT}=0~40mA, 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)≥2.43V	150			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=3.7V 1mA≤I_{OUT}≤76mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=76mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=152mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.7V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.7V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	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}=0~40mA, 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	$\triangle V_{OUT}$	V_{IN}=3.6V 1mA≤I_{OUT}≤72mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=72mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=144mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.6V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.6V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-2.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	V_{OUT}(E)(Note2)	I_{OUT}=0~40mA, V_{IN}=3.5V	2.45	2.500	2.55	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=3.5V, V_{OUT}(E)≥2.25V	125			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=3.5V 1mA≤I_{OUT}≤70mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=70mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=140mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.5V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.5V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-2.1V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=3.1V	2.058	2.100	2.142	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=3.1V, $V_{OUT}(E)$≥1.89V	125			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=3.1V 1mA≤I_{OUT}≤62mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=62mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=124mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.1V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.1V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-2.0V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=3.0V	1.960	2.000	2.040	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=3.0V, $V_{OUT}(E)$≥1.8V	100			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=3.0V 1mA≤I_{OUT}≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=60mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=120mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=3.0V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 3.0V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-1.8V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, 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	$\triangle V_{OUT}$	V_{IN}=2.8V 1mA≤I_{OUT}≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=56mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=112mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=2.8V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 2.8V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

UR6225-1.5V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=2.5V	1.470	1.500	1.530	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=2.5V, $V_{OUT}(E)$≥1.35V	100			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=2.5V 1mA≤I_{OUT}≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=56mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=112mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=2.5V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 2.5V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

UR6225-1.3V (Note1)

PARAMETER	CIRCUIT	SYMBOL	TEST CONDITONS	MIN	TYP	MAX	UNIT
Output Voltage	1	$V_{OUT}(E)$(Note2)	I_{OUT}=0~40mA, V_{IN}=2.3V	1.274	1.300	1.326	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=2.3V, $V_{OUT}(E)$≥1.17V	100			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=2.3V 1mA≤I_{OUT}≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=56mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=112mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=2.3V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 2.3V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	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}=0~40mA, V_{IN}=2.2V	1.176	1.200	1.224	V
Maximum Output Current	1	$I_{OUT(MAX)}$	V_{IN}=2.2V, $V_{OUT}(E)$≥1.08V	100			mA
Load Stability	1	$\triangle V_{OUT}$	V_{IN}=2.2V 1mA≤I_{OUT}≤60mA		45	90	mV
Input-Output Voltage Differential(Note3)	1	$V_{DIF}1$	I_{OUT}=56mA		180	360	mV
	1	$V_{DIF}2$	I_{OUT}=112mA		400	700	mV
Supply Current	2	I_{SS}	V_{IN}=2.2V		2.0	4.5	μA
Input Stability	1	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$	I_{OUT}=40mA 2.2V≤V_{IN}≤10V		0.2	0.3	%/V
Input Voltage		V_{IN}	I_{OUT}=5mA			10	V
Thermal Shutdown					150		°C
Output Voltage Temperature Characteristics	1	$\frac{\triangle V_{OUT}}{\triangle T_{OPR} \times V_{OUT}}$	I_{OUT}=40mA -40°C≤T_{OPR}≤85°C		±100		ppm/°C

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

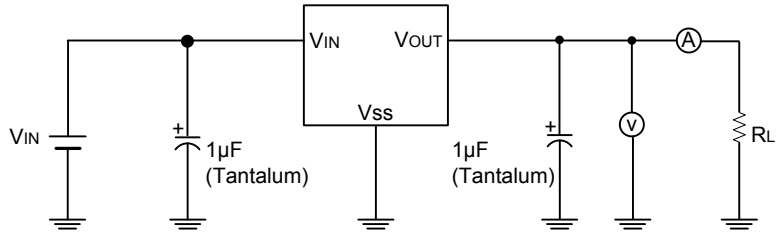
2. $V_{OUT}(E)$=Effective Output Voltage (i.e. the output voltage when "$V_{OUT}(T)$+1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value).

3. V_{DIF}= {$V_{IN}1$ (Note4) -V_{OUT} (E)}

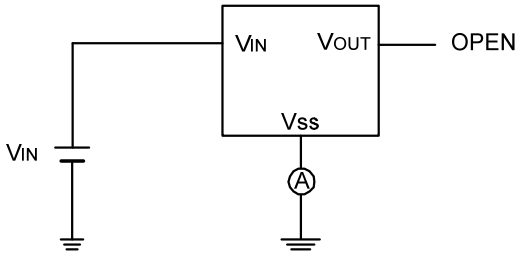
4. $V_{IN}1$= The input voltage at the time 98% of $V_{OUT}(E)$ is output (input voltage has been gradually reduced).

■ TEST CIRCUITS

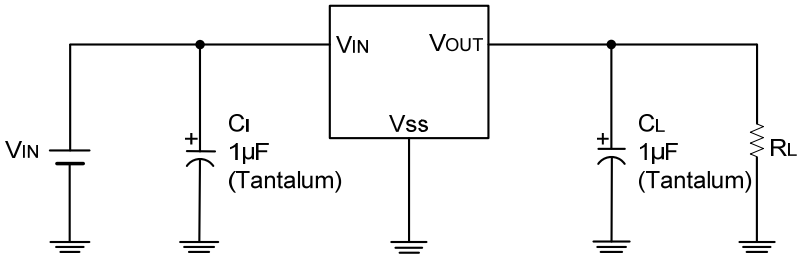
Circuit 1



Circuit 2



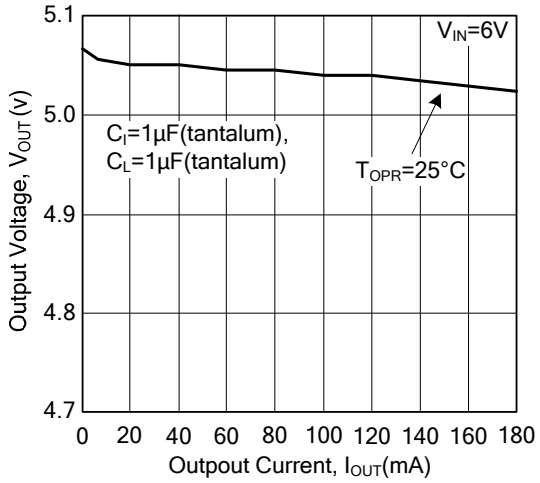
■ TYPICAL APPLICATION CIRCUIT



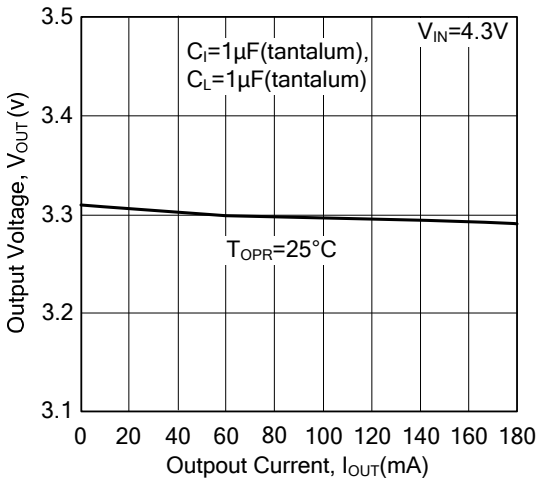
■ TYPICAL CHARACTERISTIC

(1) OUTPUT VOLTAGE VS. OUTPUT CURRENT

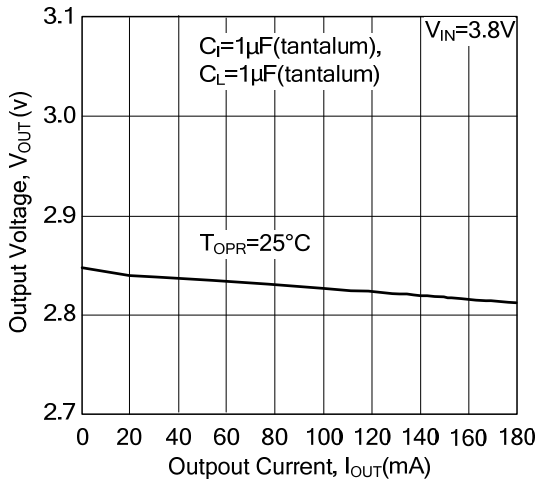
UR6225-5.0V



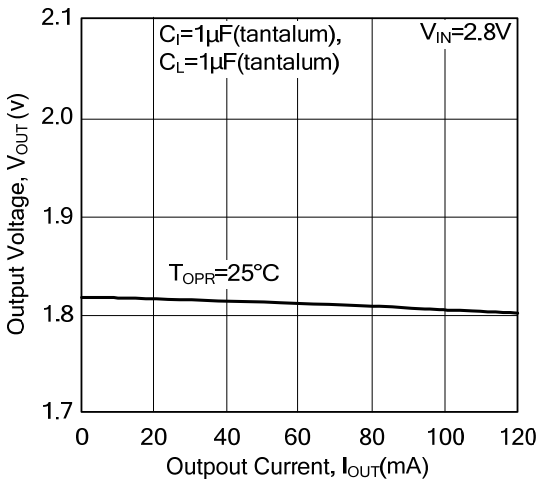
UR6225-3.3V



UR6225-2.8V

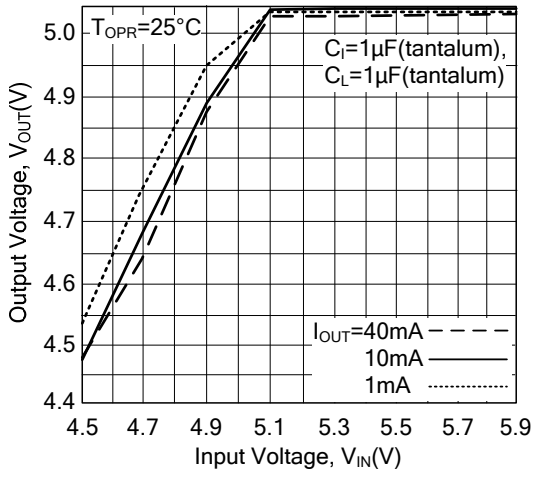


UR6225-1.8V

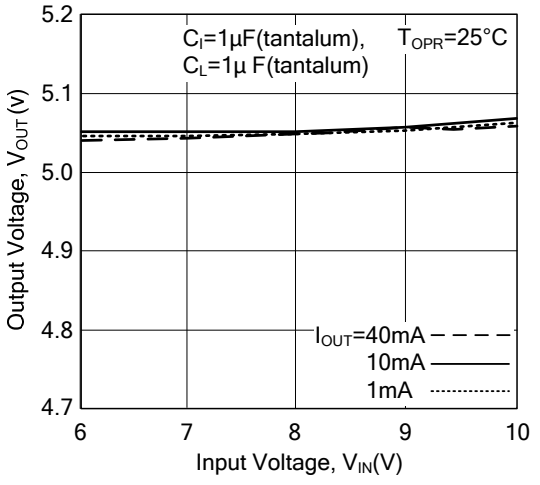


(2) OUTPUT VOLTAGE VS. INPUT VOLTAGE

UR6225-5.0V

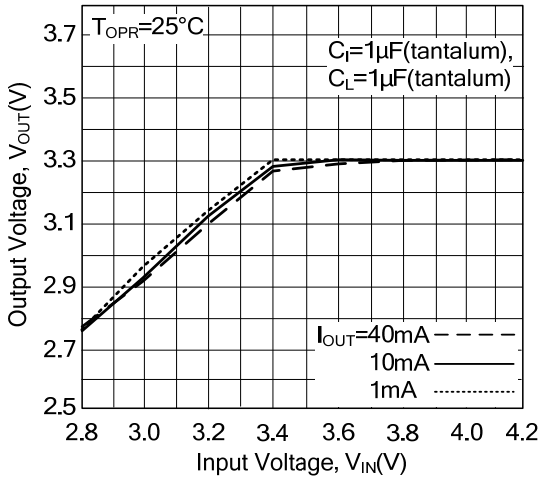


UR6225-5.0V

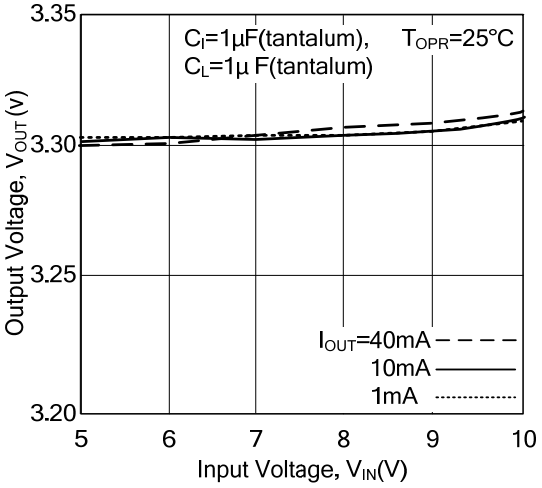


■ TYPICAL CHARACTERISTIC(Cont.)

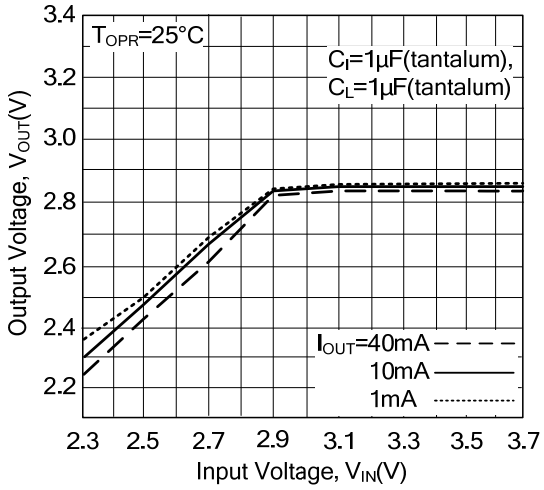
UR6225-3.3V



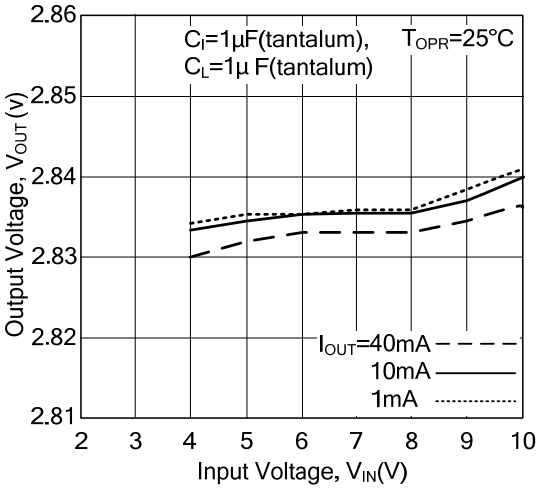
UR6225-3.3V



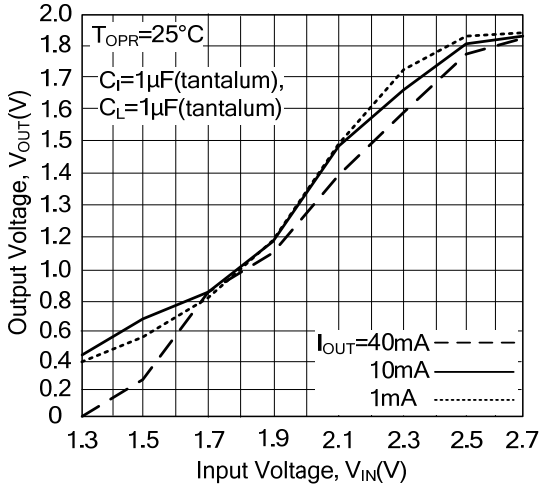
UR6225-2.8V



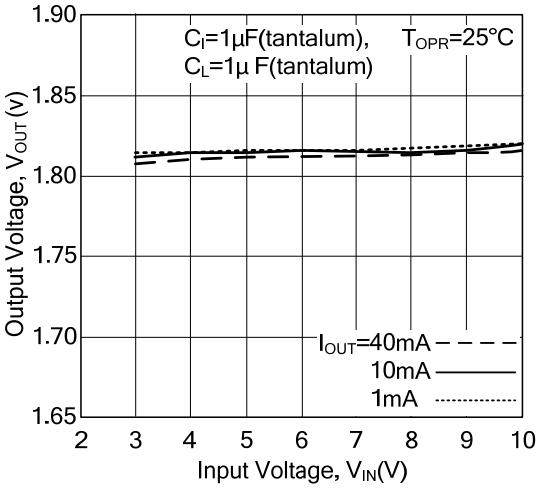
UR6225-2.8V



UR6225-1.8V



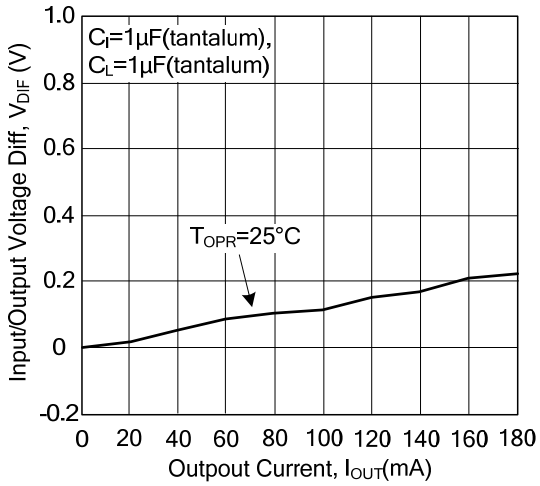
UR6225-1.8V



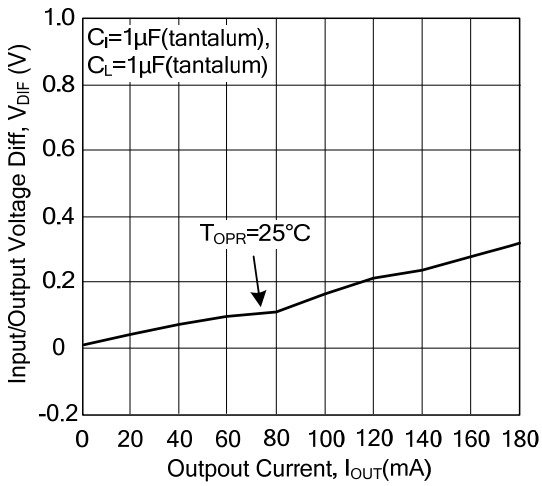
■ TYPICAL CHARACTERISTIC(Cont.)

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

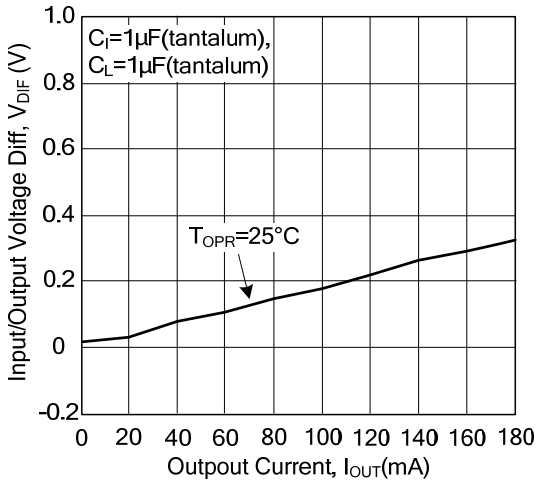
UR6225-5.0V



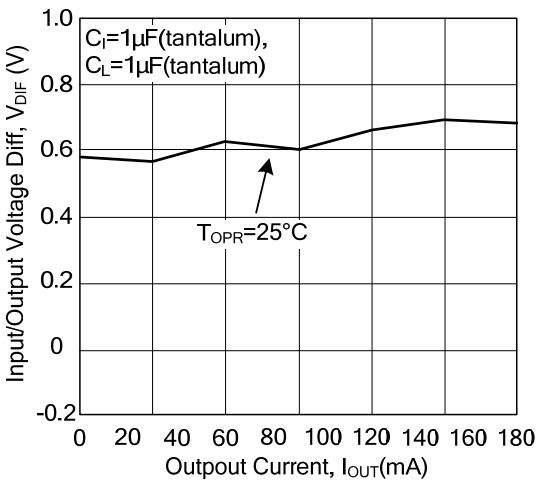
UR6225-3.3V



UR6225-2.8V

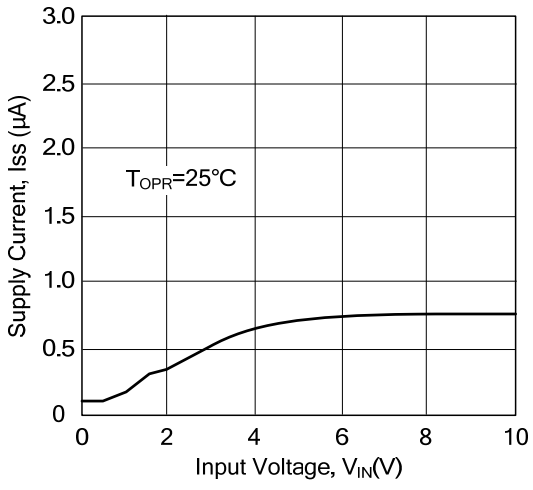


UR6225-1.8V

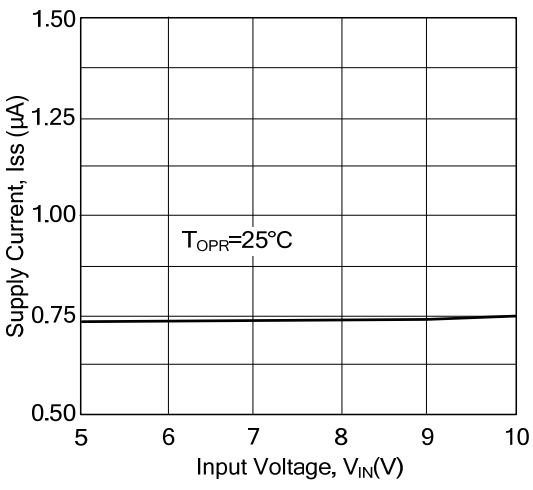


(4) SUPPLY CURRENT VS. INPUT VOLTAGE

UR6225-5.0V

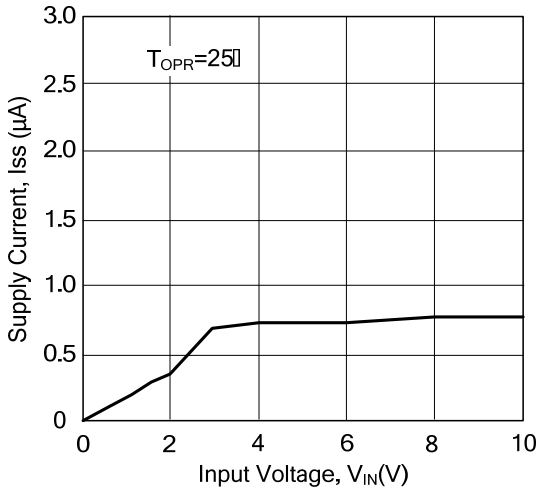


UR6225-5.0V

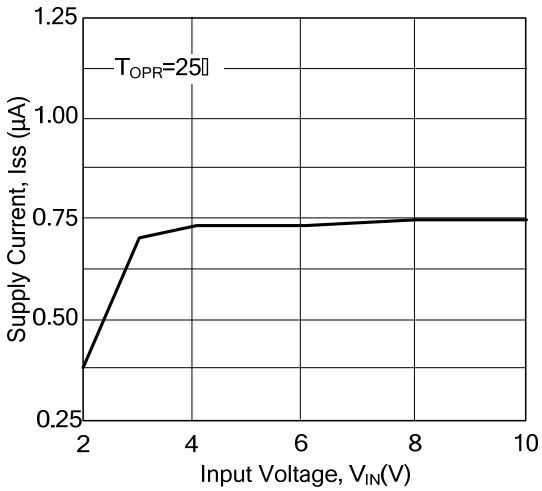


■ TYPICAL CHARACTERISTIC(Cont.)

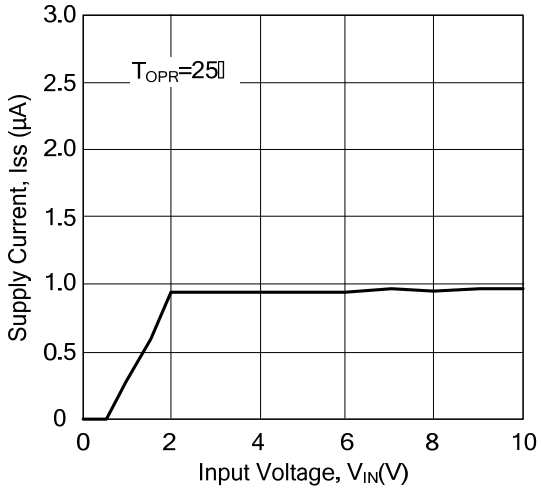
UR6225-3.3V



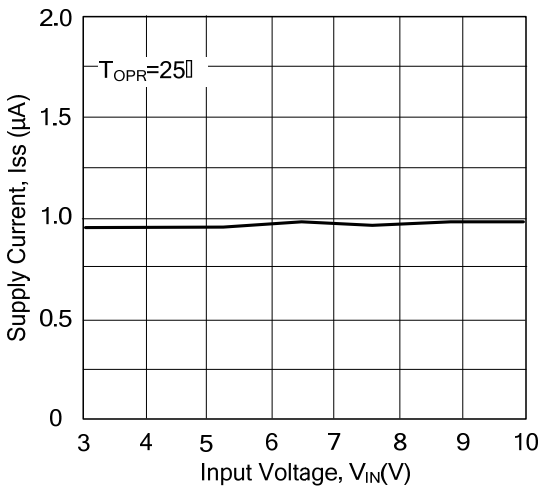
UR6225-3.3V



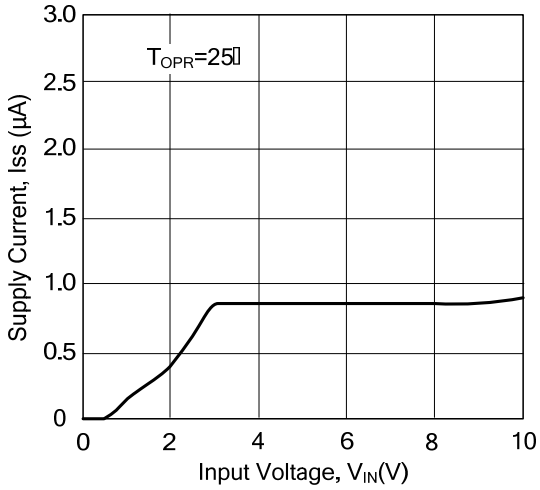
UR6225-2.8V



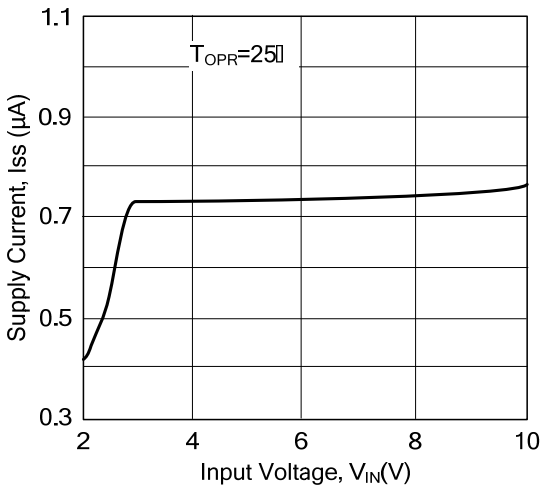
UR6225-2.8V



UR6225-1.8V



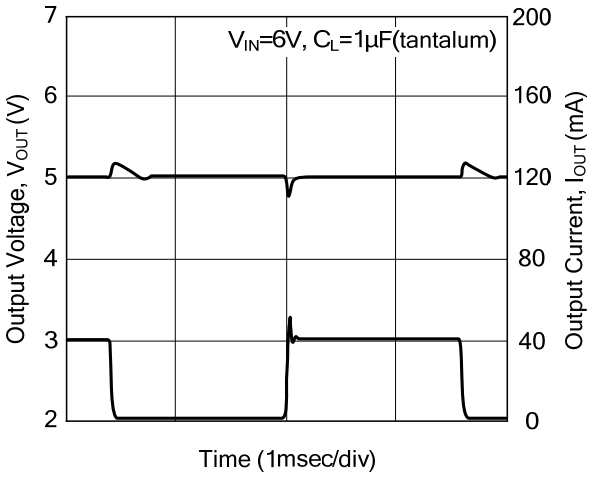
UR6225-1.8V



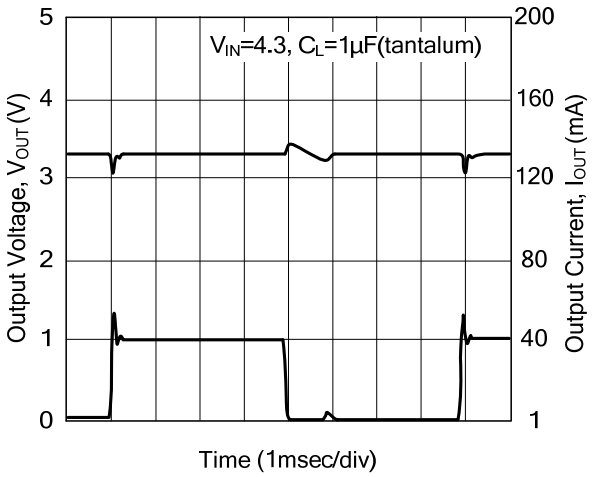
■ TYPICAL CHARACTERISTIC(Cont.)

(4) LOAD TRANSIENT RESPONSE

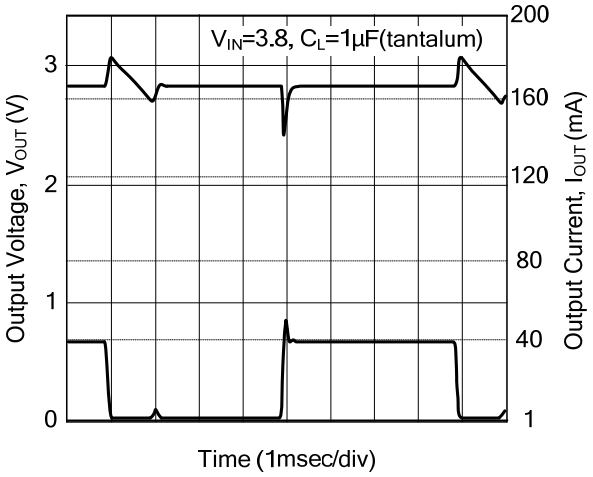
UR6225-5.0V



UR6225-3.3V



UR6225-2.8V



UR6225-1.8V