

## Current Mode PWM Controller

### FEATURES

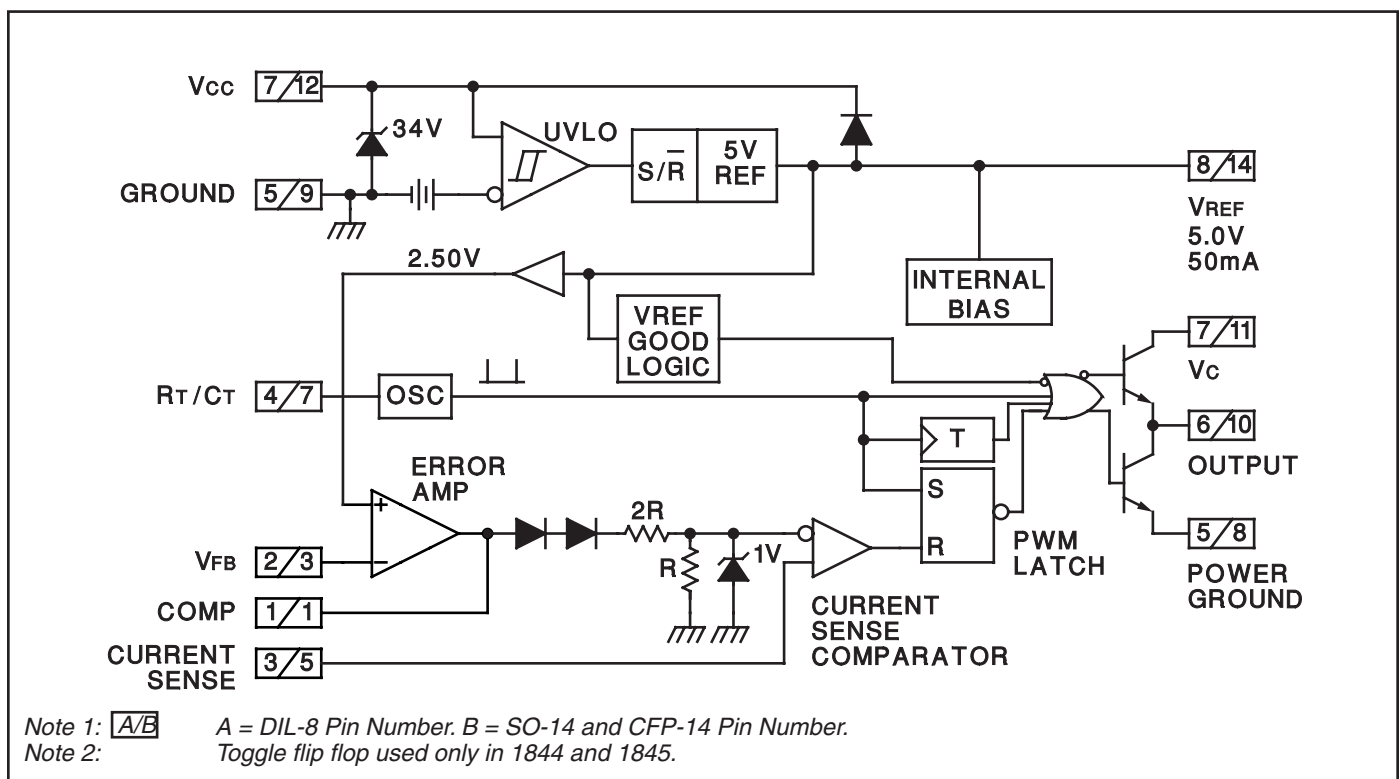
- Optimized For Off-line And DC To DC Converters
- Low Start Up Current (<1mA)
- Automatic Feed Forward Compensation
- Pulse-by-pulse Current Limiting
- Enhanced Load Response Characteristics
- Under-voltage Lockout With Hysteresis
- Double Pulse Suppression
- High Current Totem Pole Output
- Internally Trimmed Bandgap Reference
- 500khz Operation
- Low Ro Error Amp

### DESCRIPTION

The UC1842/3/4/5 family of control ICs provides the necessary features to implement off-line or DC to DC fixed frequency current mode control schemes with a minimal external parts count. Internally implemented circuits include under-voltage lockout featuring start up current less than 1mA, a precision reference trimmed for accuracy at the error amp input, logic to insure latched operation, a PWM comparator which also provides current limit control, and a totem pole output stage designed to source or sink high peak current. The output stage, suitable for driving N Channel MOSFETs, is low in the off state.

Differences between members of this family are the under-voltage lockout thresholds and maximum duty cycle ranges. The UC1842 and UC1844 have UVLO thresholds of 16V (on) and 10V (off), ideally suited to off-line applications. The corresponding thresholds for the UC1843 and UC1845 are 8.4V and 7.6V. The UC1842 and UC1843 can operate to duty cycles approaching 100%. A range of zero to 50% is obtained by the UC1844 and UC1845 by the addition of an internal toggle flip flop which blanks the output off every other clock cycle.

### BLOCK DIAGRAM

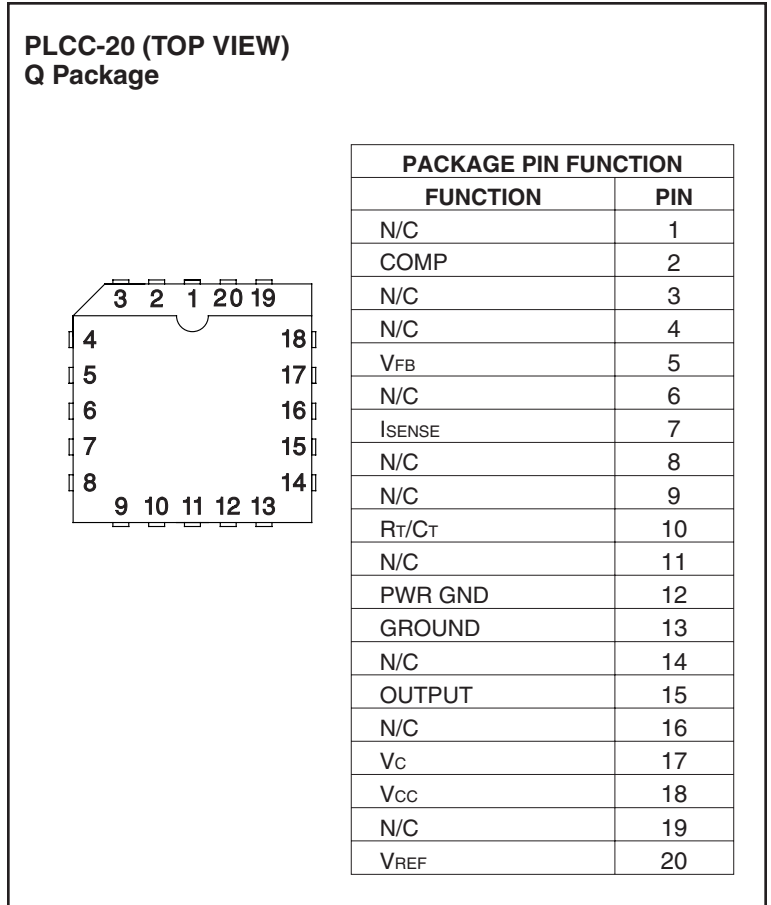
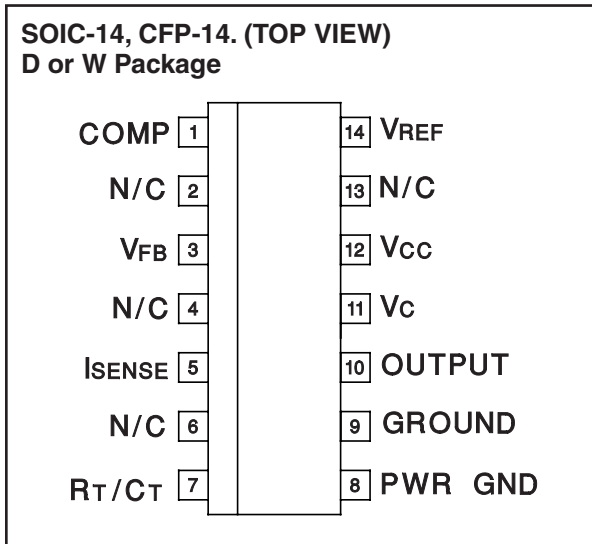
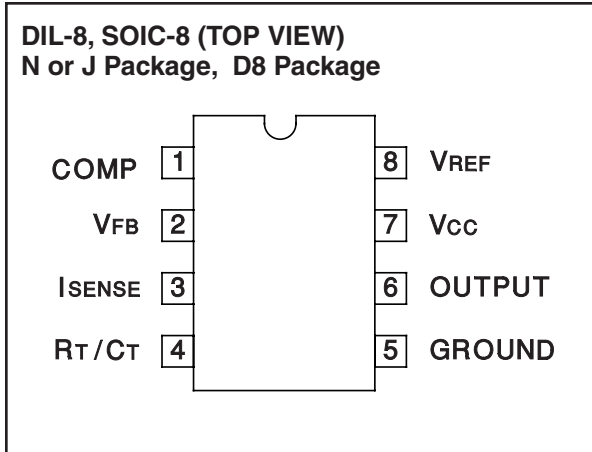


**ABSOLUTE MAXIMUM RATINGS (Note 1)**

Supply Voltage (Low Impedance Source) . . . . . 30V  
 Supply Voltage ( $I_{cc} < 30\text{mA}$ ) . . . . . Self Limiting  
 Output Current . . . . .  $\pm 1\text{A}$   
 Output Energy (Capacitive Load) . . . . .  $5\mu\text{J}$   
 Analog Inputs (Pins 2, 3) . . . . .  $-0.3\text{V}$  to  $+6.3\text{V}$   
 Error Amp Output Sink Current . . . . .  $10\text{mA}$   
 Power Dissipation at  $T_A \leq 25^\circ\text{C}$  (DIL-8) . . . . .  $1\text{W}$   
 Power Dissipation at  $T_A \leq 25^\circ\text{C}$  (SOIC-14) . . . . .  $725\text{mW}$   
 Storage Temperature Range . . . . .  $-65^\circ\text{C}$  to  $+150^\circ\text{C}$   
 Lead Temperature (Soldering, 10 Seconds) . . . . .  $300^\circ\text{C}$

Note 1: All voltages are with respect to Pin 5.  
 All currents are positive into the specified terminal.  
 Consult Packaging Section of Databook for thermal limitations and considerations of packages.

**CONNECTION DIAGRAMS**



**DISSIPATION RATING TABLE**

Package	$T_A \leq 25^\circ\text{C}$ Power Rating	Derating Factor Above $T_A \leq 25^\circ\text{C}$	$T_A \leq 70^\circ\text{C}$ Power Rating	$T_A \leq 85^\circ\text{C}$ Power Rating	$T_A \leq 125^\circ\text{C}$ Power Rating
W	700 mW	5.5 mW/ $^\circ\text{C}$	452 mW	370 mW	150 mW

**ELECTRICAL CHARACTERISTICS:** Unless otherwise stated, these specifications apply for  $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$  for the UC184X;  $-40^{\circ}\text{C} \leq T_A \leq 85^{\circ}\text{C}$  for the UC284X;  $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$  for the 384X;  $V_{CC} = 15\text{V}$  (Note 5);  $R_T = 10\text{k}$ ;  $C_T = 3.3\text{nF}$ ,  $T_A = T_J$ .

PARAMETER	TEST CONDITIONS	UC1842/3/4/5 UC2842/3/4/5			UC3842/3/4/5			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
<b>Reference Section</b>								
Output Voltage	$T_J = 25^{\circ}\text{C}$ , $I_O = 1\text{mA}$	4.95	5.00	5.05	4.90	5.00	5.10	V
Line Regulation	$12 \leq V_{IN} \leq 25\text{V}$		6	20		6	20	mV
Load Regulation	$1 \leq I_O \leq 20\text{mA}$		6	25		6	25	mV
Temp. Stability	(Note 2) (Note 7)		0.2	0.4		0.2	0.4	mV/ $^{\circ}\text{C}$
Total Output Variation	Line, Load, Temp. (Note 2)	4.9		5.1	4.82		5.18	V
Output Noise Voltage	$10\text{Hz} \leq f \leq 10\text{kHz}$ , $T_J = 25^{\circ}\text{C}$ (Note 2)		50			50		$\mu\text{V}$
Long Term Stability	$T_A = 125^{\circ}\text{C}$ , 1000Hrs. (Note 2)		5	25		5	25	mV
Output Short Circuit		-30	-100	-180	-30	-100	-180	mA
<b>Oscillator Section</b>								
Initial Accuracy	$T_J = 25^{\circ}\text{C}$ (Note 6)	47	52	57	47	52	57	kHz
Voltage Stability	$12 \leq V_{CC} \leq 25\text{V}$		0.2	1		0.2	1	%
Temp. Stability	$T_{MIN} \leq T_A \leq T_{MAX}$ (Note 2)		5			5		%
Amplitude	$V_{PIN 4}$ peak to peak (Note 2)		1.7			1.7		V
<b>Error Amp Section</b>								
Input Voltage	$V_{PIN 1} = 2.5\text{V}$	2.45	2.50	2.55	2.42	2.50	2.58	V
Input Bias Current			-0.3	-1		-0.3	-2	$\mu\text{A}$
AVOL	$2 \leq V_O \leq 4\text{V}$	65	90		65	90		dB
Unity Gain Bandwidth	(Note 2) $T_J = 25^{\circ}\text{C}$	0.7	1		0.7	1		MHz
PSRR	$12 \leq V_{CC} \leq 25\text{V}$	60	70		60	70		dB
Output Sink Current	$V_{PIN 2} = 2.7\text{V}$ , $V_{PIN 1} = 1.1\text{V}$	2	6		2	6		mA
Output Source Current	$V_{PIN 2} = 2.3\text{V}$ , $V_{PIN 1} = 5\text{V}$	-0.5	-0.8		-0.5	-0.8		mA
VOUT High	$V_{PIN 2} = 2.3\text{V}$ , $R_L = 15\text{k}$ to ground	5	6		5	6		V
VOUT Low	$V_{PIN 2} = 2.7\text{V}$ , $R_L = 15\text{k}$ to Pin 8		0.7	1.1		0.7	1.1	V
<b>Current Sense Section</b>								
Gain	(Notes 3 and 4)	2.85	3	3.15	2.85	3	3.15	V/V
Maximum Input Signal	$V_{PIN 1} = 5\text{V}$ (Note 3)	0.9	1	1.1	0.9	1	1.1	V
PSRR	$12 \leq V_{CC} \leq 25\text{V}$ (Note 3) (Note 2)		70			70		dB
Input Bias Current			-2	-10		-2	-10	$\mu\text{A}$
Delay to Output	$V_{PIN 3} = 0$ to $2\text{V}$ (Note 2)		150	300		150	300	ns

Note 2: These parameters, although guaranteed, are not 100% tested in production.

Note 3: Parameter measured at trip point of latch with  $V_{PIN 2} = 0$ .

Note 4: Gain defined as

$$A = \frac{\Delta V_{PIN 1}}{\Delta V_{PIN 3}}, 0 \leq V_{PIN 3} \leq 0.8\text{V}$$

Note 5: Adjust  $V_{CC}$  above the start threshold before setting at 15V.

Note 6: Output frequency equals oscillator frequency for the UC1842 and UC1843.

Output frequency is one half oscillator frequency for the UC1844 and UC1845.

Note 7: Temperature stability, sometimes referred to as average temperature coefficient, is described by the equation:

$$\text{Temp Stability} = \frac{V_{REF}(\text{max}) - V_{REF}(\text{min})}{T_J(\text{max}) - T_J(\text{min})}$$

$V_{REF}(\text{max})$  and  $V_{REF}(\text{min})$  are the maximum and minimum reference voltages measured over the appropriate temperature range. Note that the extremes in voltage do not necessarily occur at the extremes in temperature.

**ELECTRICAL CHARACTERISTICS:** Unless otherwise stated, these specifications apply for  $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$  for the UC184X;  $-40^{\circ}\text{C} \leq T_A \leq 85^{\circ}\text{C}$  for the UC284X;  $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$  for the 384X;  $V_{CC} = 15\text{V}$  (Note 5);  $R_T = 10\text{k}$ ;  $C_T = 3.3\text{nF}$ ,  $T_A = T_J$ .

PARAMETER	TEST CONDITION	UC1842/3/4/5 UC2842/3/4/5			UC3842/3/4/5			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
<b>Output Section</b>								
Output Low Level	$I_{\text{SINK}} = 20\text{mA}$		0.1	0.4		0.1	0.4	V
	$I_{\text{SINK}} = 200\text{mA}$		1.5	2.2		1.5	2.2	V
Output High Level	$I_{\text{SOURCE}} = 20\text{mA}$	13	13.5		13	13.5		V
	$I_{\text{SOURCE}} = 200\text{mA}$	12	13.5		12	13.5		V
Rise Time	$T_J = 25^{\circ}\text{C}$ , $C_L = 1\text{nF}$ (Note 2)		50	150		50	150	ns
Fall Time	$T_J = 25^{\circ}\text{C}$ , $C_L = 1\text{nF}$ (Note 2)		50	150		50	150	ns
<b>Under-voltage Lockout Section</b>								
Start Threshold	X842/4	15	16	17	14.5	16	17.5	V
	X843/5	7.8	8.4	9.0	7.8	8.4	9.0	V
Min. Operating Voltage After Turn On	X842/4	9	10	11	8.5	10	11.5	V
	X843/5	7.0	7.6	8.2	7.0	7.6	8.2	V
<b>PWM Section</b>								
Maximum Duty Cycle	X842/3	95	97	100	95	97	100	%
	X844/5	46	48	50	47	48	50	%
Minimum Duty Cycle				0			0	%
<b>Total Standby Current</b>								
Start-Up Current			0.5	1		0.5	1	mA
Operating Supply Current	$V_{\text{PIN } 2} = V_{\text{PIN } 3} = 0\text{V}$		11	17		11	17	mA
Vcc Zener Voltage	$I_{\text{CC}} = 25\text{mA}$	30	34		30	34		V

Note 2: These parameters, although guaranteed, are not 100% tested in production.

Note 3: Parameter measured at trip point of latch with  $V_{\text{PIN } 2} = 0$

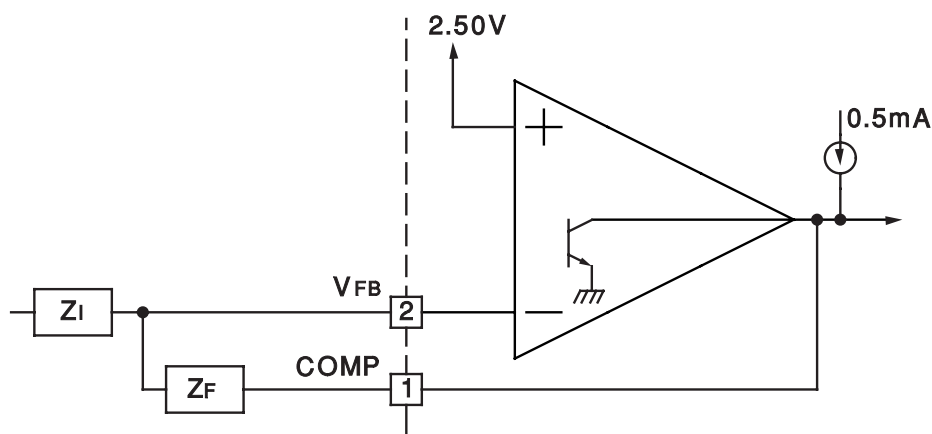
Note 4: Gain defined as:  $A = \frac{\Delta V_{\text{PIN } 1}}{\Delta V_{\text{PIN } 3}}$ ;  $0 \leq V_{\text{PIN } 3} \leq 0.8\text{V}$ .

Note 5: Adjust Vcc above the start threshold before setting at 15V.

Note 6: Output frequency equals oscillator frequency for the UC1842 and UC1843.

Output frequency is one half oscillator frequency for the UC1844 and UC1845.

## ERROR AMP CONFIGURATION



Error Amp can Source or Sink up to 0.5mA

**UNDER-VOLTAGE LOCKOUT**

	UC1842	UC1843	UC1844
V <sub>ON</sub>	16V	8.4V	
V <sub>OFF</sub>	10V	7.6V	

During under-voltage lock-out, the output driver is biased to sink minor amounts of current. Pin 6 should be shunted to ground with a bleeder resistor to prevent activating the power switch with extraneous leakage currents.

**CURRENT SENSE CIRCUIT**

Peak Current (Is) is Determined By The Formula

$$I_{SMAX} \approx \frac{1.0V}{RS}$$

A small RC filter may be required to suppress switch transients.

**OSCILLATOR SECTION**

For  $RT > 5k$   $f \approx \frac{1.72}{RTCT}$

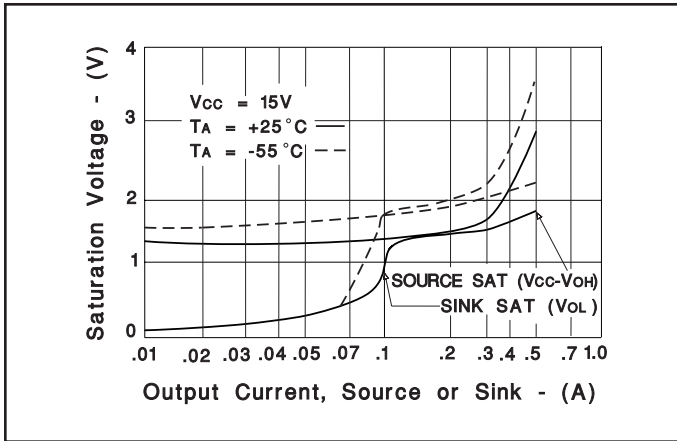
**Deadtime vs CT (RT > 5k)**

CT (nF)	td (μs)
1	0.3
2.2	0.6
4.7	1.2
10	2.4
22	4.8
47	9.6
100	19.2

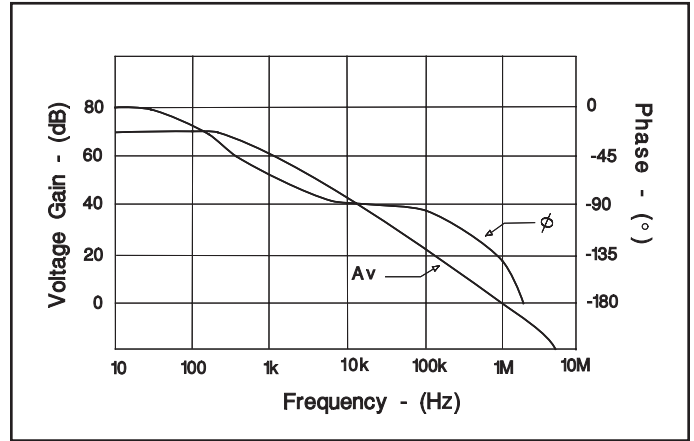
**Timing Resistance vs Frequency**

FREQUENCY (Hz)	RT (kΩ) for CT = 100nF	RT (kΩ) for CT = 147nF	RT (kΩ) for CT = 22nF	RT (kΩ) for CT = 100nF	RT (kΩ) for CT = 4.7nF	RT (kΩ) for CT = 22nF	RT (kΩ) for CT = 100nF
100	100	100	100	100	100	100	100
1k	10	10	10	10	10	10	10
10k	1	1	1	1	1	1	1
100k	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1M	0.01	0.01	0.01	0.01	0.01	0.01	0.01

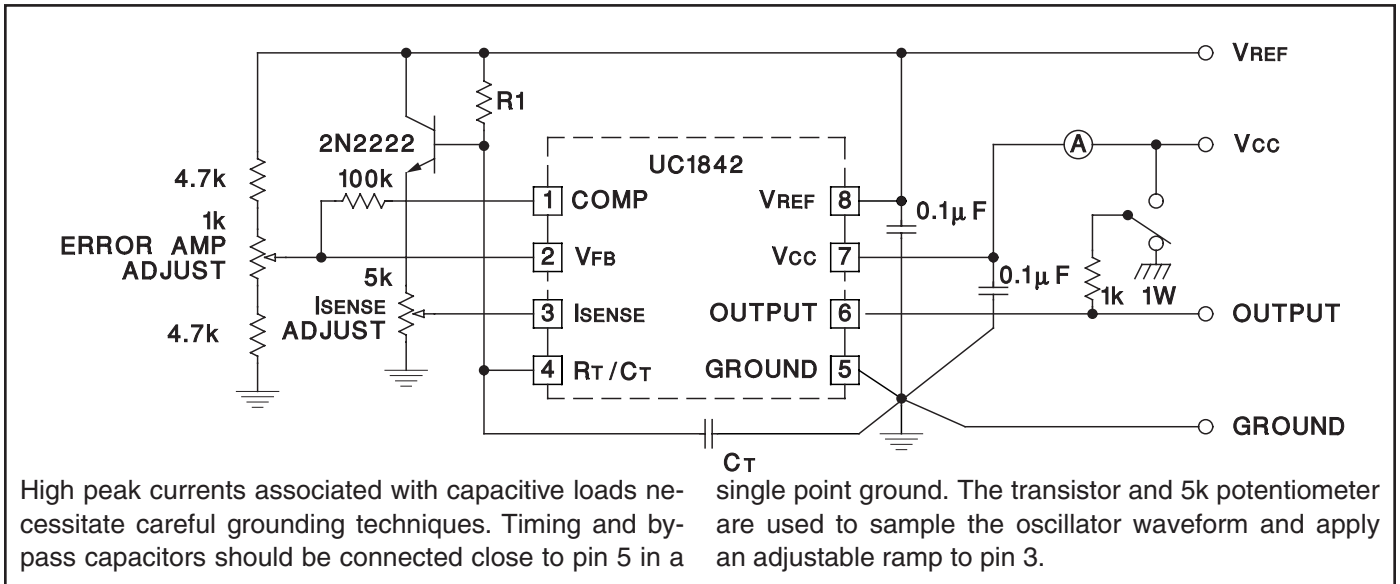
### OUTPUT SATURATION CHARACTERISTICS



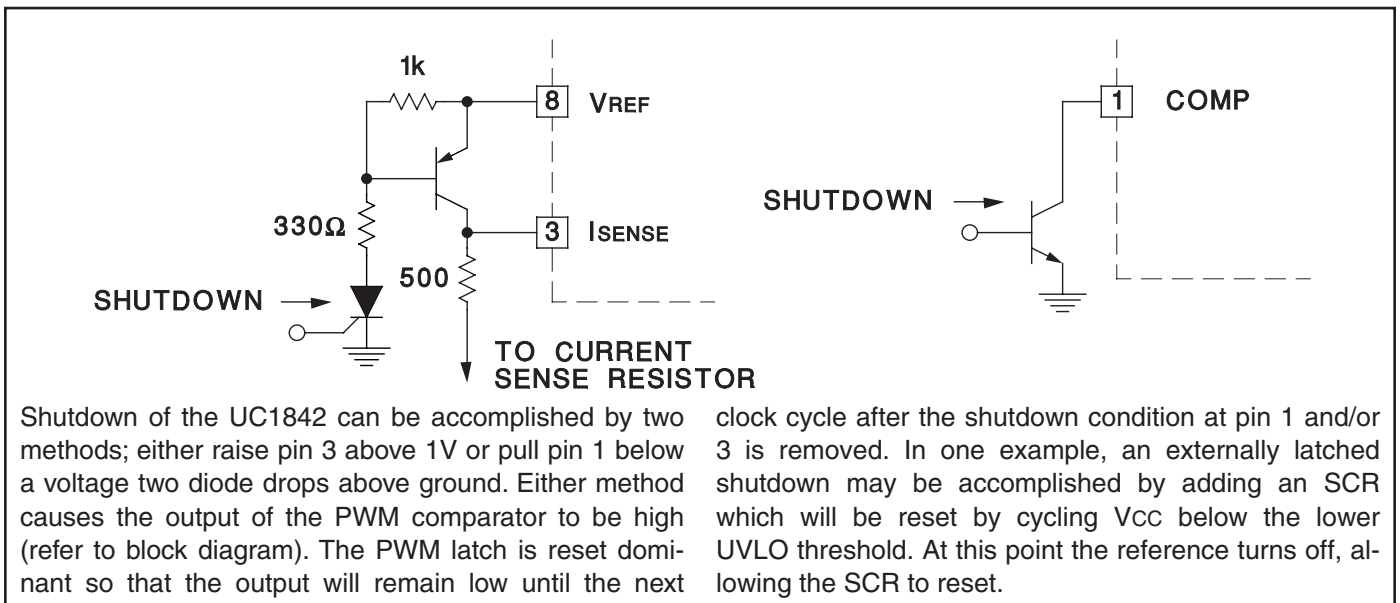
### ERROR AMPLIFIER OPEN-LOOP FREQUENCY RESPONSE



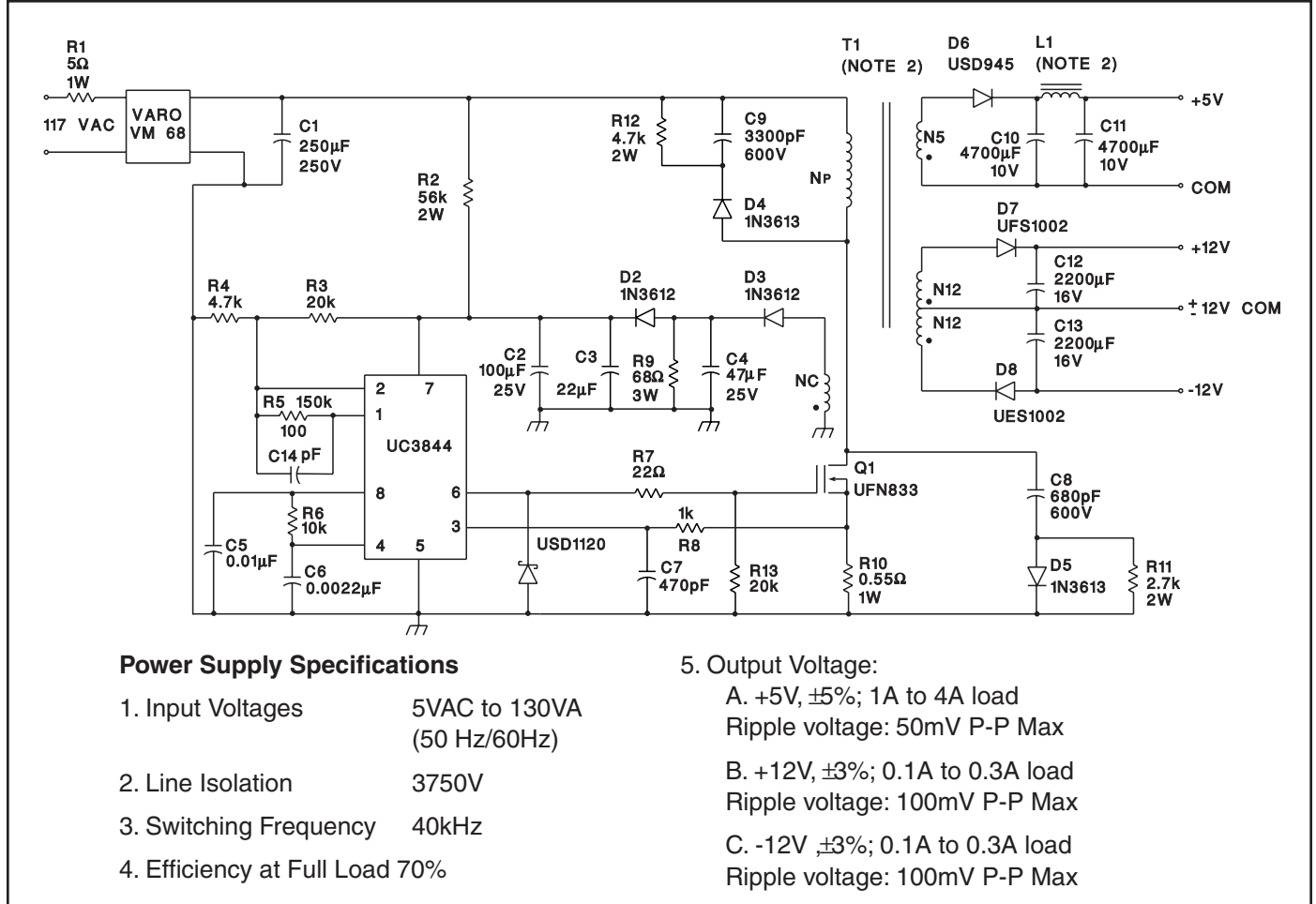
### OPEN-LOOP LABORATORY FIXTURE



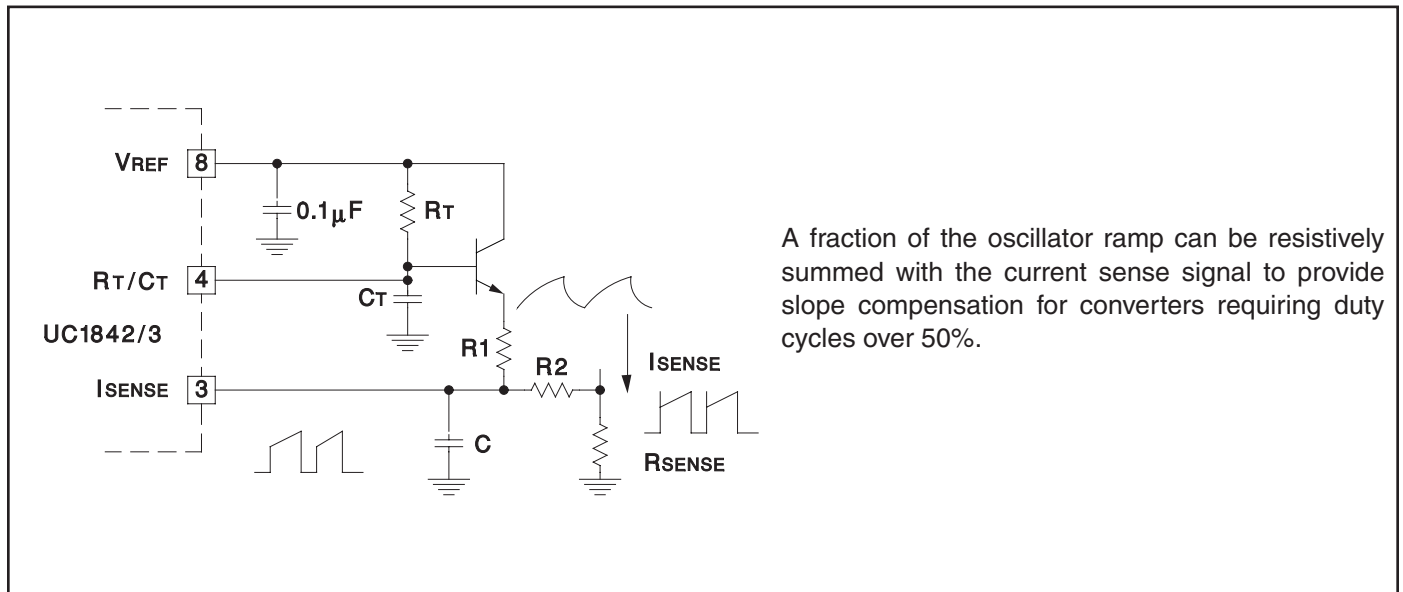
### SHUT DOWN TECHNIQUES



## OFFLINE FLYBACK REGULATOR



## SLOPE COMPENSATION



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## UC2843, Current-Mode PWM Controller

 DEVICE STATUS: **ACTIVE**

PARAMETER NAME	<a href="#">UC1843</a>	<a href="#">UC2843</a>	<a href="#">UC3843</a>
Shutdown	No	No	No
Output Type	Single, Totem Pole	Single, Totem Pole	Single, Totem Pole
Output Current (mA)	+/-1000	+/-1000	+/-1000
Frequency (max) (kHz)	450	450	450
Pulse - by - Pulse Isense	Yes	Yes	Yes
Reference Voltage (V)	5	5	5
Vref tol (%)	1	1	1
Startup Current (uA)	1000	1000	1000
Shutdown Supply Current (uA)	1000	1000	1000
Duty Cycle (max) (%)	100	100	100
Operating Supply Current (mA)	11	11	11
Operating Supply (max) (V)	30	30	30
Operating Supply (min) (V)	7.6	7.6	7.6
PWM Outputs (#)	1	1	1
Error Amplifier GBW (mHz)	1	1	1
Pin Count	8	8	8
Light Load Efficiency Features	No	No	No
Cycle by Cycle Current Limiting	Yes	Yes	Yes
Advanced Fault Response	No	No	No
Secondary Side Control Features	No	No	No
Secondary Side Post Regulator	No	No	No
Synchronous Rectification Features	No	No	No
UVLO Thresholds On/Off (V)	8.4/7.6	8.4/7.6	8.4/7.6

### FEATURES

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**DESCRIPTION**[▲Back to Top](#)

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To download a document to your hard drive, right-click on the link and choose 'Save'.

**DATASHEET**[▲Back to Top](#)

Full datasheet in Acrobat PDF: [uc2843.pdf](#) (576 KB, Rev.A) (Updated: 06/10/2002)

**APPLICATION NOTES**[▲Back to Top](#)

- [DN-26 UC3842A Low-Cost Start-up and Fault Protection Circuit](#) (SLUA162 - Updated: 09/05/1999)
- [DN-27 UC1842/UC1842A Family - Summary of Functional Differences](#) (SLUA163 - Updated: 09/05/1999)
- [DN-40 The Effects of Oscillator Discharge Current Variations on Maximum Duty](#) (SLUA173 - Updated: 09/05/1999)
- [DN-65 Considerations in Powering BiCMOS ICs](#) (SLUA081 - Updated: 09/05/1999)
- [U-100A UC3842/3/4/5 Provides Low-Cost Current-Mode Control](#) (SLUA143 - Updated: 09/05/1999)
- [UCC38C42 Family of High-Speed BiCMOS Current-Mode PWM Controllers](#) (SLUA257 - Updated: 02/07/2002)
- [Understanding Boost Power Stages In Switchmode Power Supplies](#) (SLVA061 - Updated: 03/04/1999)
- [Understanding Buck Power Stages In Switchmode Power Supplies](#) (SLVA057 - Updated: 03/04/1999)
- [Understanding Buck-Boost Power Stages in Switchmode Power Supplies](#) (SLVA059 - Updated: 03/10/1999)

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- [Military Analog Selection Guide](#) (SGLB002, 318 KB - Updated: 11/09/2000)
- [Military Semiconductors Selection Guide 2002 \(Rev. B\)](#) (SGYC003B, 1648 KB - Updated: 04/22/2002)
- [Standard Linear Products Cross Reference](#) (SLYT017, 586 KB - Updated: 05/03/2000)

**SAMPLES**[▲Back to Top](#)

ORDERABLE DEVICE	PACKAGE	PINS	TEMP (°C)	STATUS	SAMPLES
UC2843D8	<a href="#">D</a>	8	-40 TO 85	ACTIVE	<a href="#">Request Samples</a>
UC2843N	<a href="#">P</a>	8	-40 TO 85	ACTIVE	<a href="#">Request Samples</a>

**PRICING/AVAILABILITY/PKG**[▲Back to Top](#)

ORDERABLE DEVICE	PACKAGE	PINS	TEMP (°C)	STATUS	BUDGETARY PRICE US\$/UNIT QTY= 1000+	PACK QTY	PRICING/AVAILABILITY/PKG
UC2843D	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.08	50	<a href="#">Check stock or order</a>
UC2843D8	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.08	75	<a href="#">Check stock or order</a>
UC2843D8TR	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>
UC2843DR	<a href="#">D</a>	14	-40 TO 85	OBSOLETE			

UC2843DTR	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>
UC2843J	<a href="#">JG</a>	8	-40 TO 85	OBSOLETE			
UC2843N	<a href="#">P</a>	8	-40 TO 85	ACTIVE	1.08	50	<a href="#">Check stock or order</a>

**Table Data Updated on: 7/25/2002**

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## UC3843, Current-Mode PWM Controller

 DEVICE STATUS: **ACTIVE**

PARAMETER NAME	UC1843	UC2843	UC3843
Shutdown	No	No	No
Output Type	Single, Totem Pole	Single, Totem Pole	Single, Totem Pole
Output Current (mA)	+/-1000	+/-1000	+/-1000
Frequency (max) (kHz)	450	450	450
Pulse - by - Pulse Isense	Yes	Yes	Yes
Reference Voltage (V)	5	5	5
Vref tol (%)	1	1	1
Startup Current (uA)	1000	1000	1000
Shutdown Supply Current (uA)	1000	1000	1000
Duty Cycle (max) (%)	100	100	100
Operating Supply Current (mA)	11	11	11
Operating Supply (max) (V)	30	30	30
Operating Supply (min) (V)	7.6	7.6	7.6
PWM Outputs (#)	1	1	1
Error Amplifier GBW (mHz)	1	1	1
Pin Count	8	8	8
Light Load Efficiency Features	No	No	No
Cycle by Cycle Current Limiting	Yes	Yes	Yes
Advanced Fault Response	No	No	No
Secondary Side Control Features	No	No	No
Secondary Side Post Regulator	No	No	No
Synchronous Rectification Features	No	No	No
UVLO Thresholds On/Off (V)	8.4/7.6	8.4/7.6	8.4/7.6

### FEATURES

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- Optimized For Off-line And DC To DC Converters
- Low Start Up Current (< 1mA)
- Automatic Feed Forward Compensation
- Pulse-by-pulse Current Limiting
- Enhanced Load Response Characteristics
- Under-voltage Lockout With Hysteresis
- Double Pulse Suppression
- High Current Totem Pole Output
- Internally Trimmed Bandgap Reference
- 500khz Operation
- Low RO Error Amp

**DESCRIPTION**[▲Back to Top](#)

The UC1842/3/4/5 family of control ICs provides the necessary features to implement off-line or DC to DC fixed frequency current mode control schemes with a minimal external parts count. Internally implemented circuits include under-voltage lockout featuring start up current less than 1mA, a precision reference trimmed for accuracy at the error amp input, logic to insure latched operation, a PWM comparator which also provides current limit control, and a totem pole output stage designed to source or sink high peak current. The output stage, suitable for driving N Channel MOSFETs, is low in the off state.

Differences between members of this family are the under-voltage lockout thresholds and maximum duty cycle ranges. The UC1842 and UC1844 have UVLO thresholds of 16V (on) and 10V (off), ideally suited to off-line applications. The corresponding thresholds for the UC1843 and UC1845 are 8.4V and 7.6V. The UC1842 and UC1843 can operate to duty cycles approaching 100%. A range of zero to 50% is obtained by the UC1844 and UC1845 by the addition of an internal toggle flip flop which blanks the output off every other clock cycle.

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Full datasheet in Acrobat PDF: [uc3843.pdf](#) (576 KB, Rev.A) (Updated: 06/10/2002)

**APPLICATION NOTES**[▲Back to Top](#)

- [Conditioning a Switch-mode Power Supply Current Signal Using TI Op Amps](#) (SLOA044 - Updated: 03/23/2000)
- [DN-26 UC3842A Low-Cost Start-up and Fault Protection Circuit](#) (SLUA162 - Updated: 09/05/1999)
- [DN-27 UC1842/UC1842A Family - Summary of Functional Differences](#) (SLUA163 - Updated: 09/05/1999)
- [DN-40 The Effects of Oscillator Discharge Current Variations on Maximum Duty](#) (SLUA173 - Updated: 09/05/1999)
- [DN-43 Simple Techniques to Generate a Negative Voltage Bias Supply](#) (SLUA042 - Updated: 09/05/1999)
- [DN-65 Considerations in Powering BiCMOS ICs](#) (SLUA081 - Updated: 09/05/1999)
- [U-100A UC3842/3/4/5 Provides Low-Cost Current-Mode Control](#) (SLUA143 - Updated: 09/05/1999)
- [UCC38C42 Family of High-Speed BiCMOS Current-Mode PWM Controllers](#) (SLUA257 - Updated: 02/07/2002)
- [Understanding Boost Power Stages In Switchmode Power Supplies](#) (SLVA061 - Updated: 03/04/1999)
- [Understanding Buck Power Stages In Switchmode Power Supplies](#) (SLVA057 - Updated: 03/04/1999)
- [Understanding Buck-Boost Power Stages in Switchmode Power Supplies](#) (SLVA059 - Updated: 03/10/1999)

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- [Military Analog Selection Guide](#) (SGLB002, 318 KB - Updated: 11/09/2000)
- [Military Semiconductors Selection Guide 2002 \(Rev. B\)](#) (SGYC003B, 1648 KB - Updated: 04/22/2002)
- [Standard Linear Products Cross Reference](#) (SLYT017, 586 KB - Updated: 05/03/2000)

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UC3843D8	<a href="#">D</a>	8	0 TO 70	ACTIVE		<a href="#">Request Samples</a>
UC3843N	<a href="#">P</a>	8	0 TO 70	ACTIVE		<a href="#">Request Samples</a>

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UC3843D	<a href="#">D</a>	14	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3843D8	<a href="#">D</a>	8	0 TO 70	ACTIVE	0.75	75		<a href="#">Check stock or order</a>

UC3843D8TR	<a href="#">D</a>	8	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3843DTR	<a href="#">D</a>	14	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3843J	<a href="#">JG</a>	8		ACTIVE	2.25	1		<a href="#">Check stock or order</a>
UC3843N	<a href="#">P</a>	8	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3843P	<a href="#">P</a>	8	0 TO 70	OBSOLETE				
UC3843QTR	<a href="#">FN</a>	20	0 TO 70	OBSOLETE				

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**UC1842, Current Mode PWM Controller**

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5962-8670401V2A	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	222.52	1		<a href="#">Check stock or order</a>
5962-8670401VPA	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	89.90	1		<a href="#">Check stock or order</a>
UC1842J	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	5.09	1		<a href="#">Check stock or order</a>
UC1842J883B	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	10.31	1	5962-8670401PA	<a href="#">Check stock or order</a>
UC1842JQMLV	<a href="#">JG</a>	8	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>
UC1842L883B	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	18.93	1	5962-8670401XA	<a href="#">Check stock or order</a>

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5962-8670403V2A	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	235.56	1		<a href="#">Check stock or order</a>
5962-8670403VPA	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	89.90	1		<a href="#">Check stock or order</a>
UC1844J	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	6.05	1		<a href="#">Check stock or order</a>
UC1844J883B	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	10.87	1	5962-8670403PA	<a href="#">Check stock or order</a>
UC1844JQMLV	<a href="#">JG</a>	8	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>
UC1844L	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	10.83	1		<a href="#">Check stock or order</a>
UC1844L883B	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	20.29	1	5962-8670403XA	<a href="#">Check stock or order</a>
UC1844LQMLV	<a href="#">FK</a>	20	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>

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5962- 8670402VPA	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	89.90	1		<a href="#">Check stock or order</a>
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UC1843J883B	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	10.71	1	5962- 8670402PA	<a href="#">Check stock or order</a>
UC1843JQMLV	<a href="#">JG</a>	8	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>
UC1843L	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	10.58	1		<a href="#">Check stock or order</a>
UC1843L883B	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	20.21	1	5962- 8670402XA	<a href="#">Check stock or order</a>
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5962-8670404VPA	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	89.90	1		<a href="#">Check stock or order</a>
UC1845J	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	4.72	1		<a href="#">Check stock or order</a>
UC1845J883B	<a href="#">JG</a>	8	-55 TO 125	ACTIVE	8.85	1	5962-8670404PA	<a href="#">Check stock or order</a>
UC1845JQMLV	<a href="#">JG</a>	8	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>
UC1845L	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	9.75	1		<a href="#">Check stock or order</a>
UC1845L883B	<a href="#">FK</a>	20	-55 TO 125	ACTIVE	18.29	1	5962-8670404XA	<a href="#">Check stock or order</a>
UC1845LQMLV	<a href="#">FK</a>	20	-55 TO 125	ACTIVE				<a href="#">Check stock or order</a>

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UC2842D	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.08	50	<a href="#">Check stock or order</a>
UC2842D8	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.08	75	<a href="#">Check stock or order</a>
UC2842D8TR	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>
UC2842DR	<a href="#">D</a>	14	-40 TO 85	ACTIVE			<a href="#">Check stock or order</a>
UC2842DTR	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>
UC2842DW	<a href="#">DW</a>	16	-40 TO 85	ACTIVE	1.08	40	<a href="#">Check stock or order</a>
UC2842DWTR	<a href="#">DW</a>	16	-40 TO 85	ACTIVE	1.18	2000	<a href="#">Check stock or order</a>
UC2842J	<a href="#">JG</a>	8	-40 TO 85	OBSOLETE			
UC2842N	<a href="#">P</a>	8	-40 TO 85	ACTIVE	1.08	50	<a href="#">Check stock or order</a>
UC2842P	<a href="#">P</a>	8	-40 TO 85	OBSOLETE			

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UC2844D8	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.08	75	<a href="#">Check stock or order</a>
UC2844D8TR	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>
UC2844DTR	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.18	2500	<a href="#">Check stock or order</a>

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UC2845D8	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.07	75	<a href="#">Check stock or order</a>
UC2845D8TR	<a href="#">D</a>	8	-40 TO 85	ACTIVE	1.17	2500	<a href="#">Check stock or order</a>
UC2845DTR	<a href="#">D</a>	14	-40 TO 85	ACTIVE	1.17	2500	<a href="#">Check stock or order</a>
UC2845J	<a href="#">JG</a>	8	-40 TO 85	OBSOLETE			
UC2845N	<a href="#">P</a>	8	-40 TO 85	ACTIVE	1.07	50	<a href="#">Check stock or order</a>

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UC3842D	<u>D</u>	14	0 TO 70	ACTIVE	0.73	50		<a href="#">Check stock or order</a>
UC3842D8	<u>D</u>	8	0 TO 70	ACTIVE	0.73	75		<a href="#">Check stock or order</a>
UC3842D8TR	<u>D</u>	8	0 TO 70	ACTIVE	0.82	2500		<a href="#">Check stock or order</a>
UC3842DTR	<u>D</u>	14	0 TO 70	ACTIVE	0.82	2500		<a href="#">Check stock or order</a>
UC3842J	<u>JG</u>	8		ACTIVE	2.25	1		<a href="#">Check stock or order</a>
UC3842N	<u>P</u>	8	0 TO 70	ACTIVE	0.73	50		<a href="#">Check stock or order</a>
UC3842P	<u>P</u>	8	0 TO 70	OBSOLETE				

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UC3844D	<u>D</u>	14	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3844D8	<u>D</u>	8	0 TO 70	ACTIVE	0.75	75		<a href="#">Check stock or order</a>
UC3844D8TR	<u>D</u>	8	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3844DTR	<u>D</u>	14	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3844J	<u>JG</u>	8		ACTIVE	2.25	1		<a href="#">Check stock or order</a>
UC3844N	<u>P</u>	8	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3844P	<u>P</u>	8	0 TO 70	OBSOLETE				

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UC3845D	<u>D</u>	14	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3845D8	<u>D</u>	8	0 TO 70	ACTIVE	0.75	75		<a href="#">Check stock or order</a>
UC3845D8TR	<u>D</u>	8	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3845DTR	<u>D</u>	14	0 TO 70	ACTIVE	0.85	2500		<a href="#">Check stock or order</a>
UC3845J	<u>JG</u>	8		ACTIVE	2.25	1		<a href="#">Check stock or order</a>
UC3845N	<u>P</u>	8	0 TO 70	ACTIVE	0.75	50		<a href="#">Check stock or order</a>
UC3845P	<u>P</u>	8	0 TO 70	OBSOLETE				

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