

**UC1842/UC1842A FAMILY  
SUMMARY OF FUNCTIONAL DIFFERENCES**

The industry standard series of UC1842/43/44/45 devices has been improved for higher frequency, off-line power supplies. This new "A" series of controllers,

UC1842A/43A/44A/45A, feature three major advantages over their predecessors as shown in the summary below.

**Start Up Current**

	<b>UC1842/45</b>	<b>UC1842A/45A</b>
<b>Typical (T<sub>J</sub> = 25°C)</b>	0.5ma	0.3ma
<b>Maximum (T<sub>J</sub> = 25°C)</b>	1.0ma	0.5ma

**Oscillator Discharge Current**

	<b>UC1842/45</b>			<b>UC1842A/45A</b>		
	MIN	TYP	MAX	MIN	TYP	MAX
<b>At T<sub>J</sub> = 25°C (mA)</b>	7	10	13	7.8	8.3	8.8
<b>Overtemp. Range</b>	6	—	14	7.5	—	8.8

**Output Saturation**

	<b>UC1842/45</b>	<b>UC1842/45A</b>
<b>During UVLO</b>	1V @ 0.2ma	1V @ 10ma

The reduced start-up current is of particular concern in offline supplies where the IC is "powered-up" from the high voltage DC rail, then bootstrapped to an auxiliary winding on the main transformer. Power is then dissipated in the start-up resistor which is sized by the IC's start-up current. Lowering this by 50% in the "A" version family will reduce the resistors power loss by the same percentage.

Precision operation at high frequencies with an accurate maximum duty cycle can now be obtained with the "A"

family of devices due to its trimmed oscillator discharge current. This nullifies the effects of production variations in the initial discharge current or deadtime.

Another significant improvement has been made in the output section, specifically to the lower totem-pole transistor's operation during undervoltage lockout. The "A" series of devices prevent the power MOSFETs from parasitically turning-on at powerup due to the "Miller" effect. This new technique allows the IC to sink higher currents at lower saturation voltages than its predecessors.