

UTC KA7524 LINEAR INTEGRATED CIRCUIT

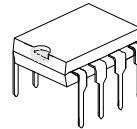
POWER FACTOR CONTROLLER

DESCRIPTION

The UTC KA7524 provides the necessary features to implement the Electronic BALLAST control and S.M.P.S application for designing active power factor correction circuit

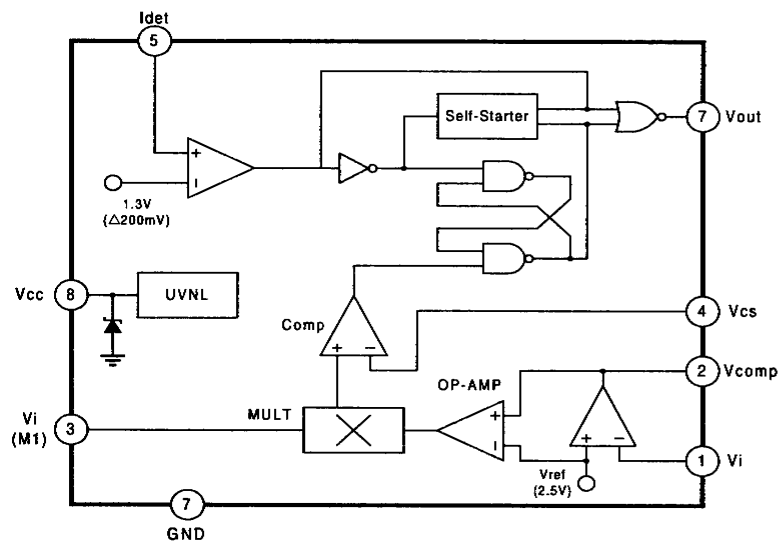
FEATURES

- *Internal self-starting
- *Micro power start up mode
- *Included under voltage lockout circuit
- *Internal 1% reference
- *High output current: peak 500mA



DIP-8

BLOCK DIAGRAM



UTC KA7524 LINEAR INTEGRATED CIRCUIT

ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	20	V
Peak Driver Output Current	Io(p)	500	mA
Detect Clamping Diode Current	Idet	10	mA
Output Clamping Diode Current	Io(c.d)	10	mA
Operating Temperature	Topr	-45~65	°C
Storage Temperature	Tstg	-65~150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

(All voltage referenced to GND unless othrewise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Under Voltage Lockout Section						
Start Threshold Voltage	Vth(st)		9.2	10	10.8	V
UV lockout Hysteresis	Vths		1.8	2.0	2.2	V
Supply Zener Voltage	Vz			17		V
Supply Current Section						
Start-up Supply Current	Istart	Vcc<Vth		0.25	0.5	mA
Operating Supply Current	Icc	Vcc=12V, No load		6	12	mA
Dynamic Operating Current	Icc(d)	Vcc=12V, f=50KHZ, Cgs=1000pF		10	20	mA
Reference Section (note 1)						
Reference Voltage	Vref		2.475	2.5	2.525	V
Line Regulation	Vref	12V<Vcc<16V		0.1	10	mV
Load Regulation	Vref	0<Iref<2mA		0.1	10	mV
Temperature Stability	STt			20		mV
Error Amplifier Section						
Input Offset Voltage	Vio		-15		15	mV
Input Bias Current	Ibias		-1	-0.1	1	μA
Large Signal Open Loop gain	Gv		60	100		dB
Power Supply Rejection Ratio	PSRR		60	86		dB
Output Current	Isource		2			mA
	Isink				-2	mA
Output Voltage range	Vo(p)		1.2		4	V
Unity Gain Bandwidth	UBW			1.0		MHZ
Phase Margin	MPH			57		°C

UTC KA7524 LINEAR INTEGRATED CIRCUIT

ELECTRICAL CHARACTERISTICS (Ta=25°C) (continued)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Multiplier Section						
M1 Input Voltage Range	Vi(m1)		0		2	V
M2 Input Voltage Range	Vi(m2)		Vref		Vref+1	V
Input Bias Current	Ibias		-2	-0.5	2	μA
Multiplier Gain	Gv	Vi(m1)=0.5V, Vi(m2)=3V		0.8		/V
Multiplier Gain Stability	STt			-0.2		%/°C
Current Sense Section						
Input Voltage Threshold	Vth		1.0	1.3	1.6	V
Hysteresis	Vths			200		mV
Input Low Clamp Voltage	Vic(L)	Idet=0mA			0.95	V
Input High Clamp Voltage	Vic(H)	Idet=3mA	6.1	7.1		V
Input Current	Ii	0.8V<Vdet<6V		5		μA
Input Clamp Diode Current	Icd	Vdet<0.9V, Vdet>6V			3	mA
Current Detect Section						
Output Voltage(High)	Vo(H)	I _o =-10mA, Vcc=12V	7	9		V
Output Voltage(low)	Vo(L)	I _o =10mA, Vcc=12V		0.8	1.8	V
Rising Time	tr	CL=1000pF		100	200	ns
Falling Time	tf	CL=1000pF		90	200	ns
Self-Start Section						
Self Starting Time	tss		12			μs

NOTE:

- 1.Reference can not be tested on the PKG
2. $G_v = V_o(m) / (V_i(m1) * (V_i(m2) - V_{ref}))$

