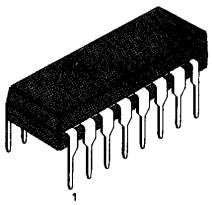
KA7521 BALLAST CONTROLLER

ELECTRONIC BALLAST CONTROLLER

The KA7521 is a electronic ballast controller for fluorescent inverter system. It contains soft start, no lamp protection and over temperature protection. With the zero voltage switching, it can also provide low noise and low power loss.

16 DIP



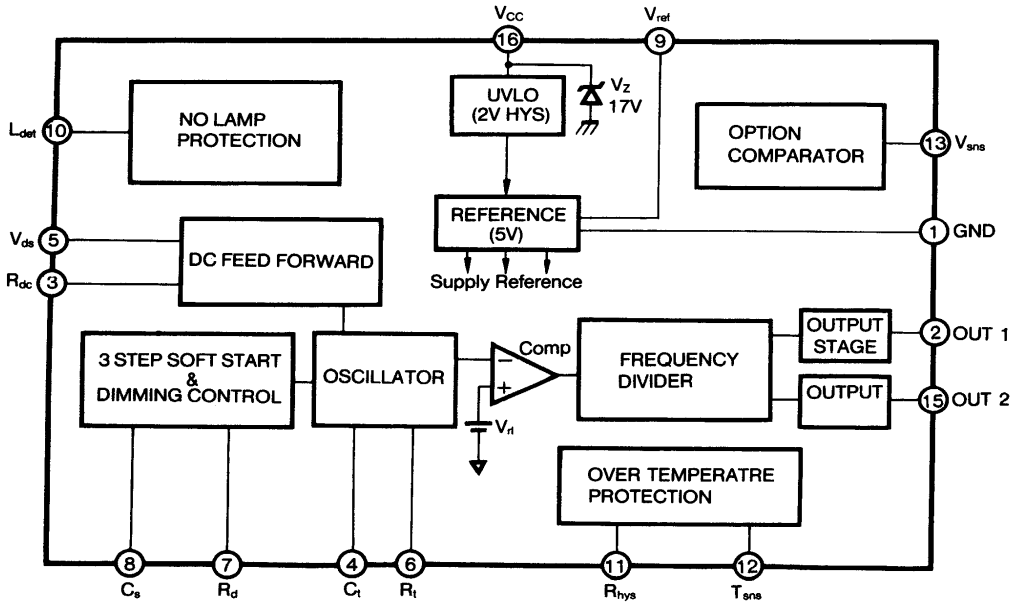
FEATURES

- Dimming Control
- 3 Step Soft start
- ZVS Driving
- DC feed-forward
- No Lamp Protection
- Over temperature protection with Variable Hysteresis
- Option Comparator
- Internal UVLO

ORDERING INFORMATION

Device	Package	Operating Temperature
KA7521	16 DIP	-25 ~ + 100℃

BLOCK DIAGRAM



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ABLOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	17	V
Peak driver output current	$I_{O(P)}$	500	mA
Zener diode current	$I_{J(ZD)}$	200	mA
Operating ambient temperature	T_{OPR}	- 25 ~ +100	℃
Storage Temperature	T_{STG}	- 65 ~ +150	℃

ELECTRICAL CHARACTERISTICS

(V_{CC} = 10V, T_A = 25℃, unless otherwise specified)

Characteristic	Symbol	Test conditions	Min	Typ	Max	Unit
Under Voltage Lock Out Section						
Start Threshold Voltage	$V_{TH(ST)}$		9.1	9.7	10.3	V
UV Lockout Hysteresis	V_{THS}		1.7	1.9	2.1	V
Start-up Supply Current	I_{ST}	V_{CC} = 7V		0.8	1.0	mA
Operating Supply Current	I_{CC}	V_{CC} = 12V, No Load	5		9	mA
Reference Section						
Reference Voltage	V_{REF}		4.90	5	5.10	V
Load Regulation	ΔV_{REF}	$0 < I_{REF} < 5mA$		5		mV
Preheating Section						
Preheating Frequency	F_D	V_{CS} =0V, R_T =33K, C_T =330pF	120		160	KHz
Preheating Time Current	I_{PT}	V_{CS} =0V	7		27	uA
Preheating Dead Time	T_{PD}		2		4	uS
Oscillator Section						
Amplitude	V_{OA}		3		3.8	V
Normal Frequency	F_{NO}	V_{CS} = 2V, R_T = 33K, C_T = 330pF	80		120	KHz
Normal Dead Time	T_{ND}		1.7		3.7	uS
Output Section						
Rising Time	T_J	NO LOAD		80	120	nS
Falling Time	T_F	NO LOAD		20	60	nS
High Voltage	V_H	I_O = 30mA	7.0	8.0		V
Low Voltage	V_L	I_O = - 30mA		0.1	0.4	V
Dimming Control Section						
Dimming 50% Frequency	F_D	R_D = 120K, R_T= 33K, C_T = 330pF	100		140	KHz
Dimming Current	I_D	R_D = 120K	20		46	uA

ELECTRICAL CHARACTERISTICS(Continued)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Over Temperature Protection						
High temperature Voltage	V_{HT}		0.7		1.3	V
Reset Temperature Voltage	V_{RT}		2.0		2.8	V
Hysteresis max. current	I_{HM}	R_{HYS} = 50K	80		120	uA
DC Feed forward						
Lower Current	I_{FL}	R_{DC} = 120K, V_{DS} = 1.25V	2		6	uA
Middle Current	I_{FM}	R_{DC} = 120K, V_{DS} = 1.75V	5		9	uA
Upper Current	I_{FU}	R_{DC} = 120K, V_{DS} = 2.23V	7		11	uA
No Lamp Protection						
No Lamp Protection Voltage	V_{NL}		1.2		1.7	V
Option Comparator						
Option Comparator Voltage	V_{OPT}		2.7		3.6	V
3 Step Frequency Section						
Preheating Voltage Range	V_{PR}	V_{DS} = 1.75V	0.6		1.1	V
Soft Start Voltage Range	V_{SR}	V_{DS} = 1.75V	1.3		1.8	V
Full Power Voltage Range	V_{FR}	V_{DS} = 1.75V	2.6		3.1	V
Dimming Voltage Range	V_{DR}	V_{DS} = 1.75V	3.3		3.8	V
Zener Voltage limit						
Zener Voltage	V_Z	I_{VZ} = 20mA	17	18	20	V

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