HIC06-AA-01

CCFL Inverter Driver IC

(SEM2006)

SAMSUNG
ELECTRO-MECHANICS

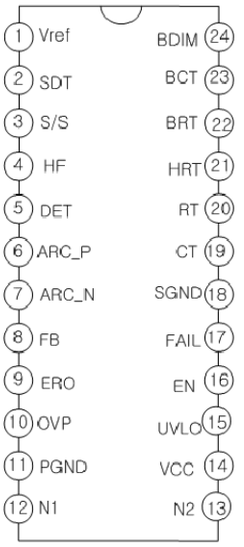
Samsung Electro-Machanics

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■ FEATURES

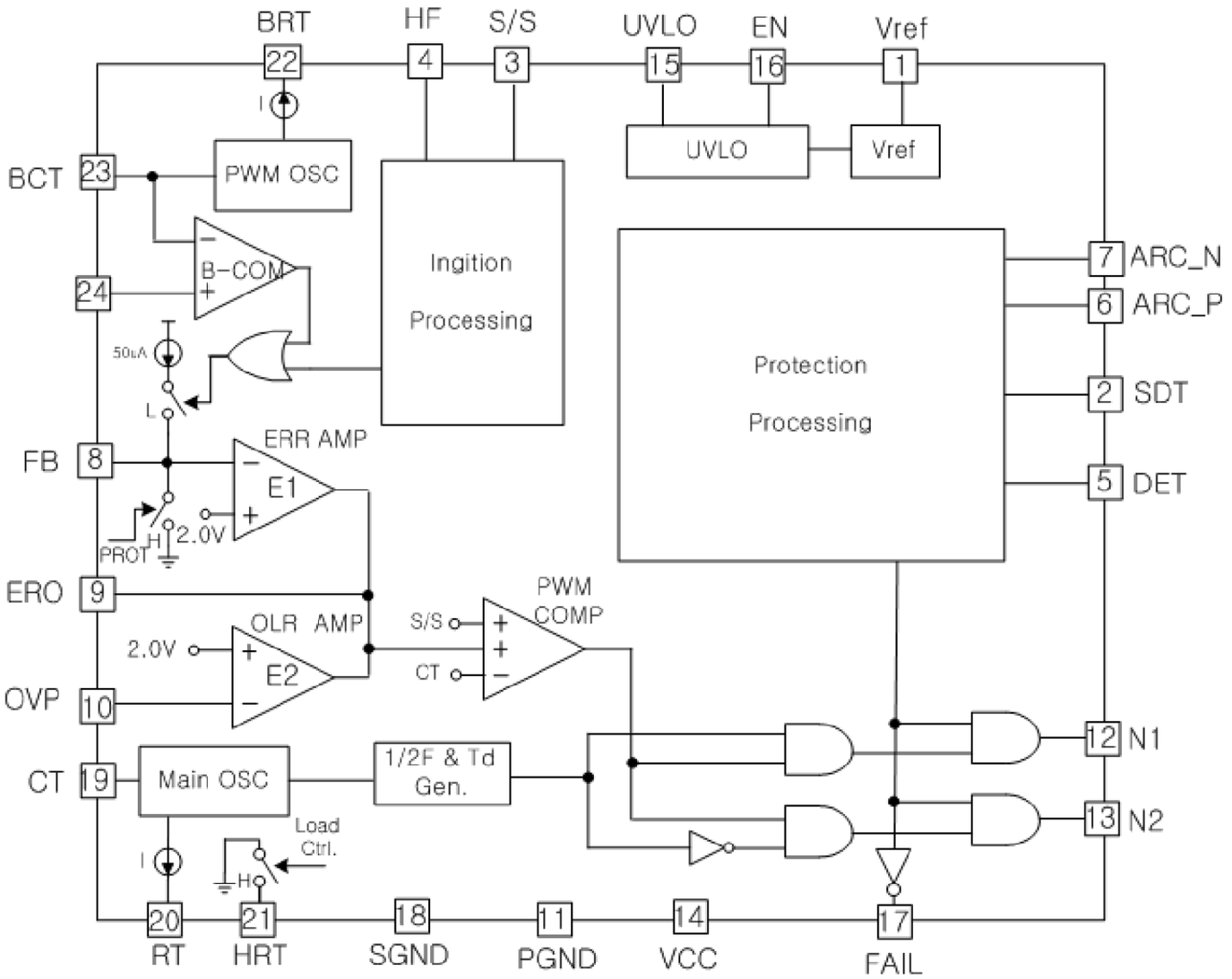
- Single N/N type Inverter
- High Frequency Voltage Mode PWM Control
- Easy Burst Dimming Control
- Built-In Soft Strat Function
- Built-In Low Frequency PWM Generator
- External UVLO function
- Latched Mode Protection
- Adjustable Shut-down time
- Variable Protection function



■ PIN DESCRIPTION

Pin No	Symbol	I/O	Description
1	VREF	O	5V/30mA Reference Voltage Output
2	SDT	I	Shut Down Timing Capacitor 연결단자
3	S/S	I	Soft Start 용 Cap. 연결단자
4	HF	I	High Frequency Timing Capacitor 연결단자
5	DET	I	Protection Detecting Input
6	ARC_P	I	Positive ARC Protection Pin
7	ARC_N	I	Negative ARC Protection Pin
8	FB	I	Error Amplifier의 Inverting Input
9	ERO	O	Error Amplifier의 Output
10	OVP	I	Over Voltage Protection
11	PGND	I/O	Power Ground
12	N1	O	N1 Channel MOSFET Driver Output
13	N2	O	N2 Channel MOSFET Driver Output
14	VCC	I	Supply Voltage
15	UVLO	I	Line Voltage Monitor
16	EN	I	Enable Pin
17	Fail	O	Latched Protection Flag
18	SGND	I/O	Signal Ground
19	CT	I/O	Oscillator Timing Capacitor 연결단자
20	RT	I	Oscillator Timing Resistor 연결단자
21	HRT	I	High Frequency용 Resistor 연결단자
22	BRT	I	Burst Dimming용 OSC Timing Resistor 연결단자
23	BCT	I/O	Burst Dimming용 OSC Timing Cap. 연결단자
24	BDIM	I	Burst Dimming Input

■ BLOCK DIAGRAM



■ ORDERING INFORMATION

Device	Package	Operating Temperature
SEM2006	24-SOP	-25 ~ 95℃

■ ABSOLUTE MAXIMUM RATINGS

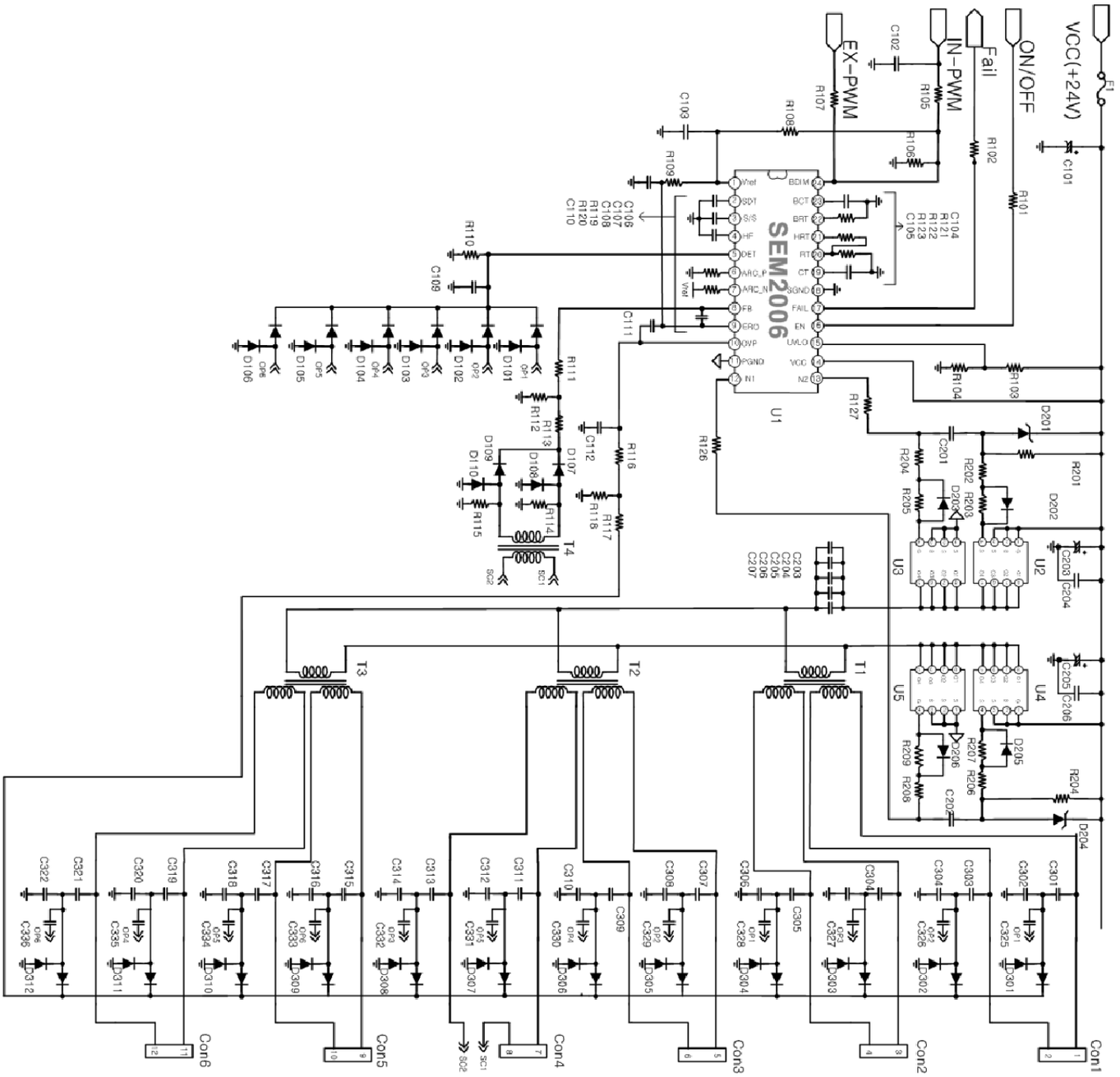
Characteristic	Symbol	Value	Ut
Supply Voltage	VCC	36	V
Operating Temperature	Topr	-25 ~ 95	℃
Storage Temperature	Tstg	-55 ~ 125	
Power Dissipation	Pd	1.0	W
Maximum Junction Temperature	Tjmax	125	℃

■ ELECTRICAL CHARACTERISTICS (Vcc=15V, Tj=25℃ ; unless otherwise specified

Characteristic	Symbol	Test Condition	Min	Typ	Max	Ut
▶ OVERALL SECTION						
Start-up Current	Ist	Vcc=15V, Vuv = 3.5V	-	200	400	uA
Operating Supply Current	Iop	Vcc = 15V	-	10	15	mA
Enable On Voltage	Ven(on)	-	2.0	-	-	V
Enable Off Voltage	Ven(off)	-	-	-	1.0	V
▶ UVLO SECTION						
Start Voltage	Vst	-	3.8	4.0	4.2	V
Hysterisis Voltage	Vhys	-	0.15	0.20	0.25	V
▶ REFERENCE SECTION						
Reference Output Voltage	Vref	Tj=25℃,Iref=1mA	4.80	5.00	5.20	V
Line Regulation	△Vref1	12V≤Vcc≤20V	-	5	20	mV
Load Regulation	△Vref2	1mA≤Iref≤10mA	-	5	20	mV
▶ MAIN OSCILLATOR SECTION						
Main Oscillation Frequency	Fosc	Tj=25℃,RT=18.4K	49.5	52	54.5	kHz
High Frequency	Fhf	HRT=90K	63	70	77	kHz
Frequency Change	△Fosc	-25℃≤Ta≤85℃(Note1)	-	5	-	%
Main Oscillation High Voltage	Vosch	-	2.8	3.0	3.2	V
Main Oscillation Low Voltage	Voscl	-	0.8	1.0	1.2	V
▶ FEEDBACK SECTION						
FB Source Current	Ifb	-	30	50	70	uA
FB Input Voltage	Vfb	-	1.8	2.0	2.2	V
OVP Input Voltage	Vovp	-	1.8	2.0	2.2	V
▶ PWM OSCILLATOR SECTION						
Burst Oscillation Frequency	Fbosc	Tj=25℃,BRT=66K	140	150	160	Hz
Burst Oscillation High Voltage	Vbosch	-	2.9	3.0	3.1	V
Burst Oscillation Low Voltage	Vboscl	-	0.9	1.0	1.1	V
▶ PROTECTION SECTION						
S/S Source Current	Iss	-	-	2.0	4.0	uA
SDT Source Current	Isdt	-	-	2.0	4.0	uA
HF Source Current	Ihf	-	-	2.0	4.0	uA
DET Threshold Voltage	Vdet	-	2.7	3.0	3.3	V
OVP Threshold Voltage	Vovpt	-	1.6	1.8	2.0	V
INIT Threshold Voltage	Vinit	-	0.5	0.7	0.9	V
HF Threshold Voltage	Vhf	-	2.7	3.0	3.3	V
SDT Threshold Voltage	Vsdt	-	2.7	3.0	3.3	V
▶ OUTPUT SECTION						
N1 Output Voltage	Vno1	Tj=25℃,Cload=2nF (Note1)	6.5	7.5	-	V
N2 Output Voltage	Vno2		6.5	7.5	-	V
N1 Rise Time	Tn1-r		-	100	-	ns
N1 Fall Time	Tn1-f		-	100	-	ns
N2 Rise Time	Tn2-r		-	100	-	ns
N2 Fall Time	Tn2-f		-	100	-	ns

* Note1 : Only verified by simulation. Not 100% tested

■ APPLICATION EXAMPLE



* 현 회로는 ARC Protection 미 사용시임.
* ARC Protection 사용시 6번, 7번 Pin을 사용함.

■ PACKAGE DIMENSION

24-SOP-375

Dimensions in milimeters/inches

