

Description

The JSM2269 is a highly integrated current mode PWM controller IC for those high output power of off line flyback convertor. The output power is up to 120W.

JSM2269 is integrated start-up circuit that realizes low quiescent dissipation and overload compensation.

JSM2269 has comprehensive protection feature to ensure reliability of application system. The packaging of JSM2269 has SOP8 and DIP8.

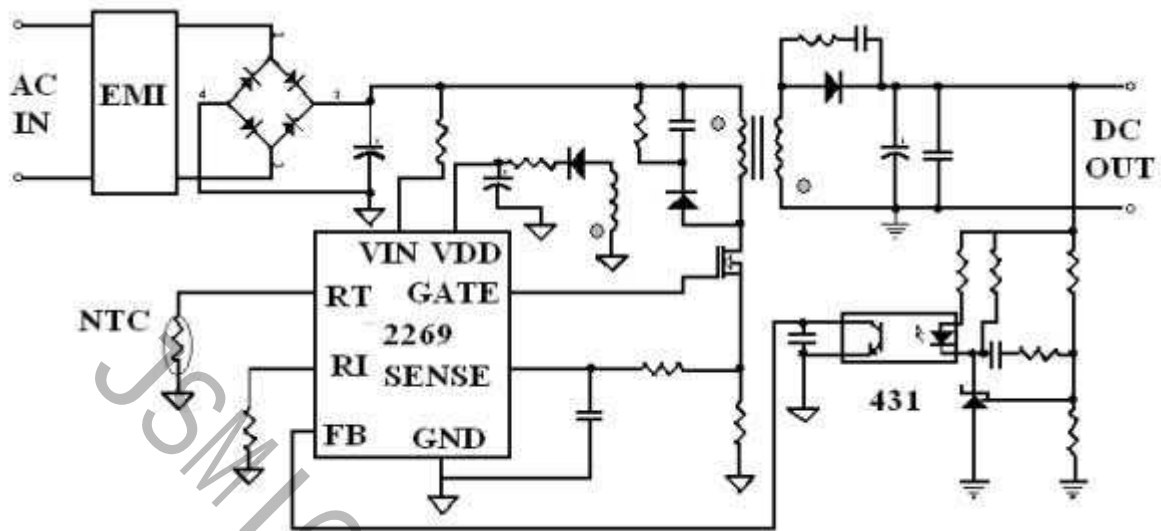
Features

- Digit frequency shuffling technology to improve EMI performance.
- External programmable PWM switching frequency.
- Leading edge Blanking on current sense input.
- Internal synchronized slope compensation .
- Burst mode control to improve efficiency and optimize standby power consumption.
- Low start-up current and low operating current.
- Comprehensive protection functions
 - 1、 Under voltage locked with hysteresis (UVLO) on VDD
 - 2、 Over voltage protection (OVP) on VDD.
 - 3、 Cycle-by-Cycle current limitation
 - 4、 Over load protection (OLP)
 - 5、 Over temperature protection (OTP)
- Current limitation compensation to obtain the same output current in universal AC line input.
- 800mA Drive Capability

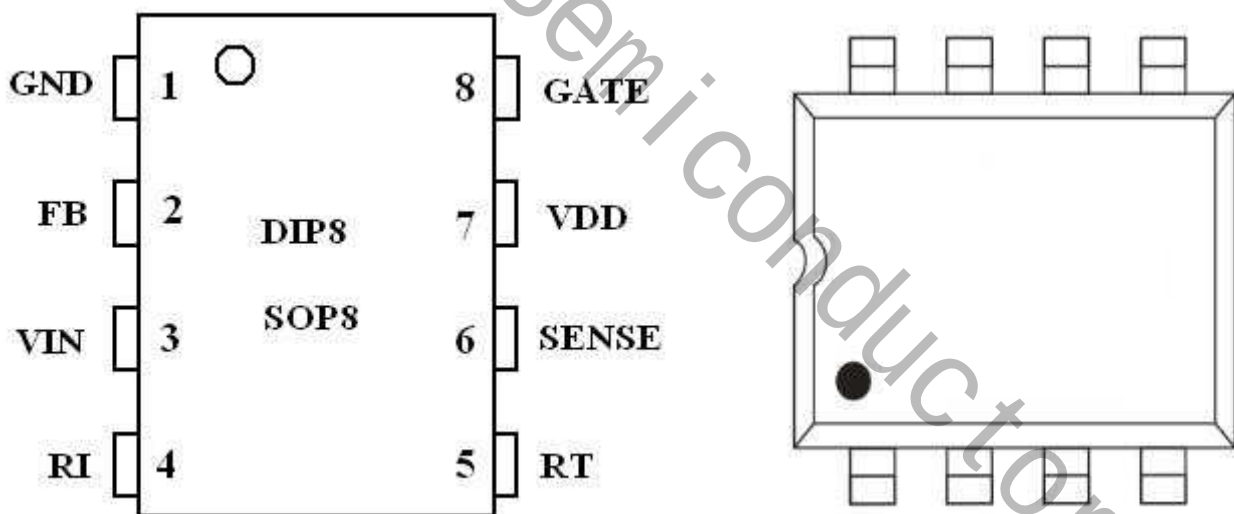
Applications

- Digital Cameras Charger
- Power adaptor
- Battery charger

Application Circuit



Pin Assignment & Marking Information



Ordering Information

Part number	Package
JSM2269-SI	SOP-8
JSM2269-DI	DIP-8

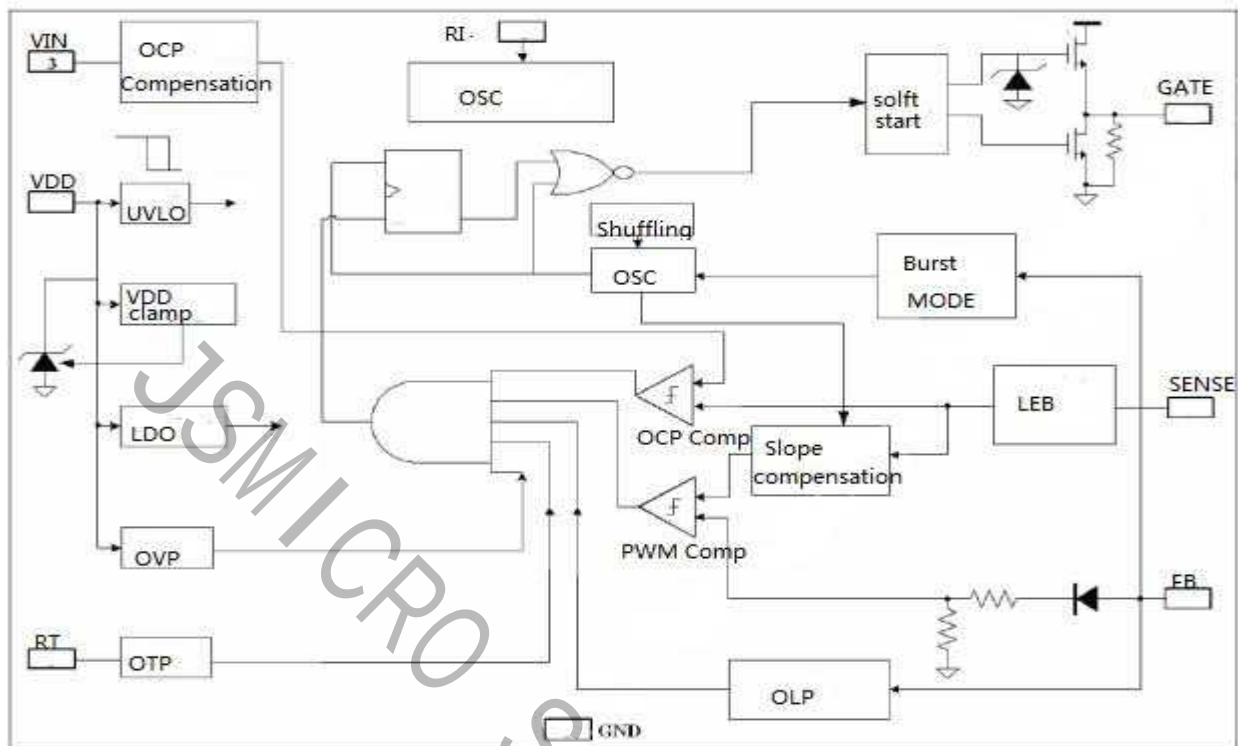
Pin Description

Pin Number	Symbol	Type	Description
1	GND	P	Ground.
2	FB	I	Feedback input pin.
3	VIN	I	Start-up and overload compensation current input pin
4	RI	I/O	Internal oscillator frequency setting pin.
5	RT	I/O	Temperature sensing input pin,connected through a NTC resistor to GND.
6	SENSE	I	Current sense input pin.
7	VDD	P	Chip DC power supply pin.
8	GATE	O	Totem-pole gate diver.

Recommended Out Power

Product	Input:230VAC±15%	Input:85-264VAC
	Adapter	Adapter
JSM2269	120W	90W

Block Diagram



Absolute Maximum Rating

Parameter	Value	Unit
VDD/VIN Input voltage	30	V
VDD clamp voltage	32	V
VDD clamp continuous current	10	mA
FB input voltage	-0.3 to 7	V
SENSE input voltage	-0.3 to 7	V
RT input voltage	-0.3 to 7	V
RI input voltage	-0.3 to 7	V
Operating ambient temperature	-20 to 85	°C
Min/Max operating junction temperature	-55 to 150	°C
Thermal resistance,Junction to ambient SOP8	150	°C/W
Thermal resistance,Junction to ambient DIP8	100	°C/W

Note: Stresses above absolute maximum ratings may cause permanents damage to the device. Exposure to absolutely maximum-rated conditions for extended periods may affects device reliability

Recommended Operating Conditions

Symbol	Parameter	Min.	Max.	Unit
VDD	Supply Voltage	8	25	V
T _A	Operating Ambient Temperature	-20	85	°C

ESD Information

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
HBM	Human body model on all pins	JEDEC-STD		3		KV
MM	Machine model on all pins	JEDEC-STD		250		V

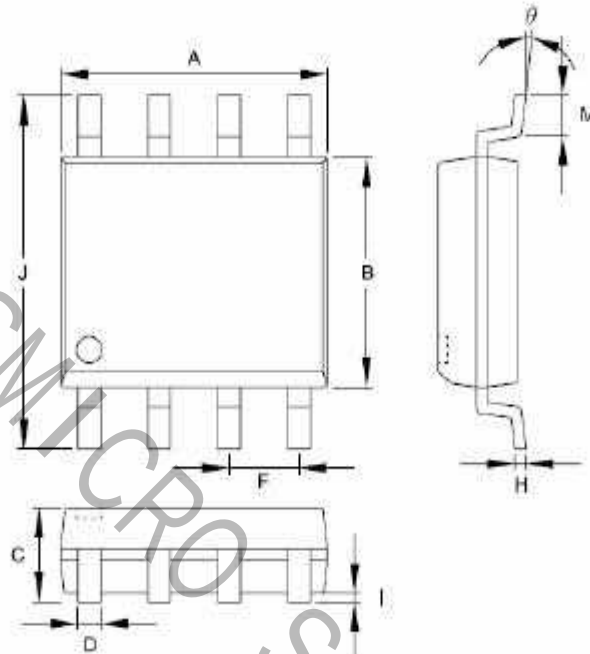
Electrical Characteristics (T_A = 25 °C without special notation)

Symbol	Parameter	Conditions	Value			Unit
			Min.	Typ.	Max	
Supply Voltage (VDD Pin)						
Idd_start-up	VDD start-up current	VDD=12.5V, RI=24K		6	10	uA
Idd	VDD operating current	VDD=18V, RI=24K , FB=3.6V		2.3		mA
UVLO (enter)	VDD under voltage lockout enter		8.5	9	10	V
UVLO(exit)	VDD under voltage lockout exit		14.5	15	16	V
OVP(enter)	VDD over voltage protection enter		25.5	26.5	27.5	V
VDD_clamp	VDD clamp voltage	Idd = 10mA	29	30	31	V
Voltage Feedback (FB Pin)						
AVCS	PWM input gain	$\Delta V_{FB} / \Delta V_{SENSE}$		2.8		V/V
VFB_open	open loop voltage			5.8		V
VFB_burst	Burst mode voltage			1.1		V
IFB_short	FB pin short current	Short FB pin to GND and measure current		780		uA
VTH_PL	Power limiting FB threshold voltage	Iout = -10mA		3.7		V
TD_PL	Power limiting delay time			80		mS
Current Sense(CS Pin)						
T_blanking	Leading-edge blanking time			250		nS
ZSENSE_IN	Input impedance			30		K
VTH	Current limitation threshold voltage	I(VIN)= 0 uA		0.85		V
Oscillator(RI Pin)						

Fosc	Normal oscillation frequency	RI=24K	60	65	70	Khz
Δf_{temp}	Frequency temperature stability	TA -20°C to 100°C VDD=16V, RI=24K		2		%
Δf_{VDD}	Frequency voltage stability	VDD=12V to 25V RI=24K		2		%
RI_range	Operating resistor range		12	24	60	K
VRI	Voltage of RI to GND	RI=24K		2		V
Fosc_BM	Burst mode base frequency			25		Khz
DC_MAX	Maximum duty cycle	VDD=18V, FB=3V SENSE=0V		80		%
Δf_{OSC}	Frequency modulation range /Base frequency		-5		+5	%
Gate Drive Output(GATE Pin)						
VOL	Output low level	VDD=18V, IO=-20mA			0.3	V
VOH	Output high level	VDD=18V, IO=20mA	11			V
V_Clamp	output clamp voltage level			16		V
T_r	Output rising time	VDD=18V, CL=1nF		110		nS
T_f	Output falling time	VDD=18V, CL=1nF		40		nS
Over Temperature Protection (RT pin)						
I_RT	Output current of RT pin			70		uA
V_OTP	OTP threshold voltage			0.65		V
V_OTP_off	OTP recovery threshold voltage			0.8		V
T_OTP	OTP delay time			100		uS
Start up and Current limitation compensation (VIN pin)						
G_VIN	Current limitation compensation gain	$\Delta I_{VIN}/\Delta V_{CS}$		2		mS

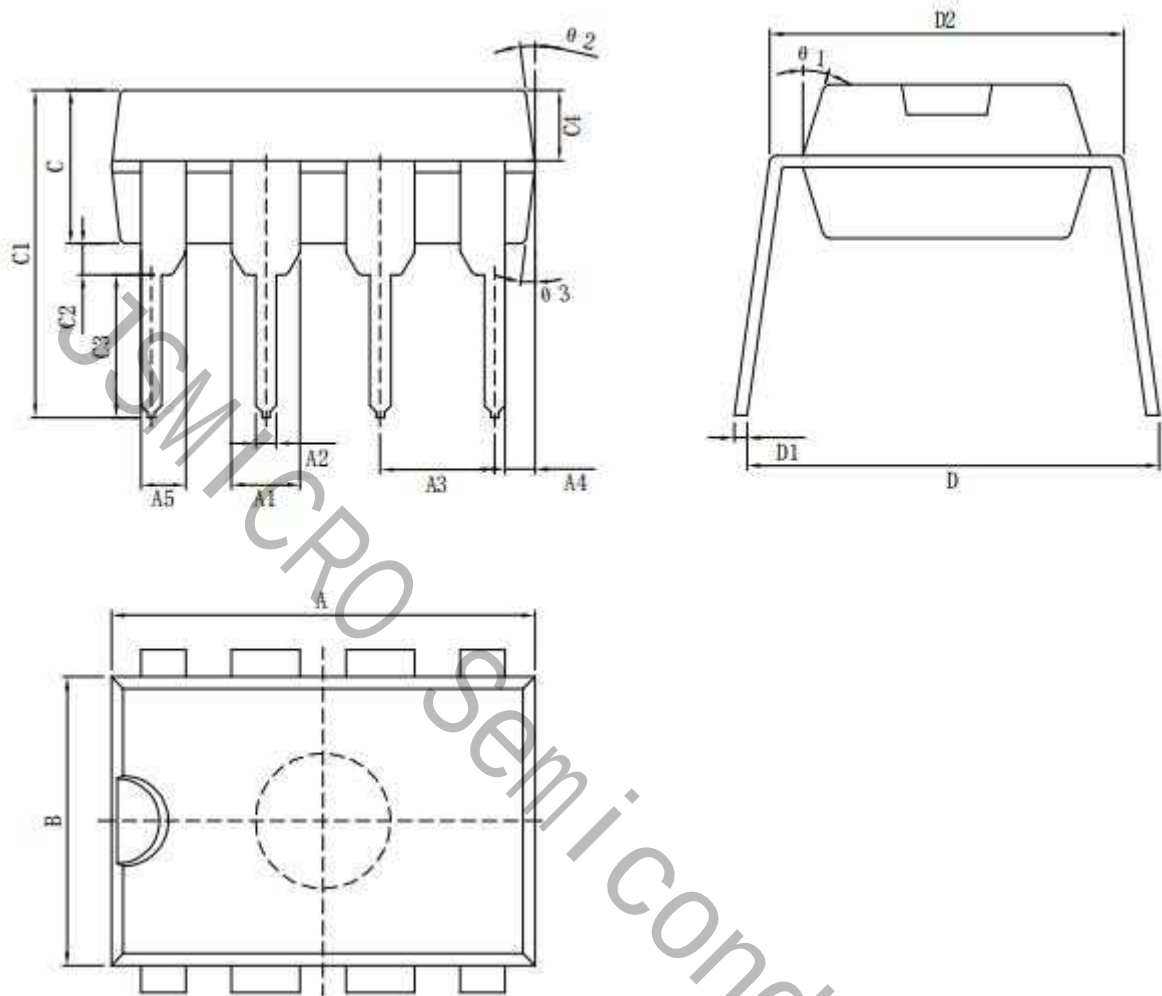
Package Information:

SOP-8



Symbols	Dimensions in Millimeters		Dimensions in Inch	
	MIN	MAX	MIN	MAX
A	4.801	5.004	0.189	0.197
B	3.810	3.988	0.150	0.157
C	1.346	1.753	0.053	0.069
D	0.330	0.508	0.013	0.020
F	1.194	1.346	0.047	0.053
H	0.178	0.229	0.007	0.009
I	0.102	0.254	0.004	0.010
J	5.791	6.198	0.228	0.244
M	0.406	1.270	0.016	0.050
θ	0°	8°	0°	8°

DIP-8



Symbol	Size	MIN (mm)	MAX (mm)	Symbol	Size	MIN (mm)	MAX (mm)
A		9.00	9.20	C2		0.50TYP	
A1		1.474	1.574	C3		3.20	3.40
A2		0.41	0.51	C4		1.47	1.57
A3		2.44	2.64	D		8.20	8.80
A4		0.51TYP		D1		0.244	0.264
A5		0.99TYP		D2		7.62	7.87
B		6.10	6.30	θ1		17° TYP4	
C		3.20	3.40	θ2		10° TYP4	
C1		7.10	7.30	θ3		8° TYP	