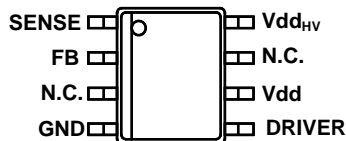


FEATURES	DESCRIPTION
<ul style="list-style-type: none"> ■ Operate from a rectified 85~265 VAC line source. ■ Oscillation frequency: 80 kHz to 100 kHz. ■ Output voltage external setting (FB) type available. ■ FB terminal voltage (VFB) 1.0 V. ■ Built-in Start-UP current source. ■ Duty ratio: 0% to 5% typ.- PFM control, 5% to 82% typ. - PWM control ■ Built-in current limiting circuit: Assigned by external resistor. ■ Soft-start function: Built-in Soft-start circuit. 	<p>The SMD711 is a monolithic high voltage switching regulator-controllers with PWM/PFM control that is specifically designed to operate from a rectified 85~265 VAC line source.</p> <p>This device contain a reference voltage source, oscillation circuit, error amplifier, phase compensation circuit, PWM control circuit, power supply 450 V MOS-transistor, and other components. Since the oscillation frequency is a high 90 kHz, with the addition of a small external component, the IC can function as switching regulator with high efficiency.</p> <p>The SMD711 provides low-ripple power, high-efficiency, and excellent transient characteristics thanks to a PWM control circuit capable of varying the duty ratio linearly from 0% to 82% and optimized error amplifier, and phase compensation circuit.</p> <p>The SMD711 contains a PWM/PFM switching control circuit so that it operates using PWM control with a duty ratio of 5% or higher and using PFM control with a duty ratio of lower than 5% to ensure high efficiency in all load ranges.</p>

APPLICATIONS

- LED Drivers
- Charger and Adaptor
- Back Lightening
- Energy Saving Illumination

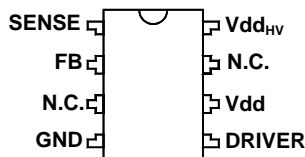
PACKAGE/ORDER INFORMATION



8-Pin Plastic S.O.I.C.
(Top View)

Order Part Number

SMD711MST



8-Pin Plastic DIP
(Top View)

SMD711M

ABSOLUTE MAXIMUM RATINGS (Note 1)

Item	Symbol	Ratings	Units
Vdd pin voltage	Vdd	-0.3 to 16	V
Vdd _{HV} pin voltage	Vdd _{HV}	-0.3 to 450	V
DRIVER pin voltage	V _{DRIVER}	-0.3 to 16	V
DRIVER pin current	I _{DRIVER}	250	mA
FB pin voltage	V _{FB}	-0.3 to 16	V
SENSE pin voltage	V _{SENSE}	-0.3 to Vdd+0.3	V
Power dissipation	P _D	650	mW
Operational ambient temperature	T _A	-25 to +85	°C
Storage Temperature Range	T _{STG}	-65°C to 150°C	°C

Note 1: Exceeding these ratings could cause damage to the device. All voltages are with respect to ground. Currents are positive into, negative out of the specified terminal.

POWER DISSIPATION TABLE

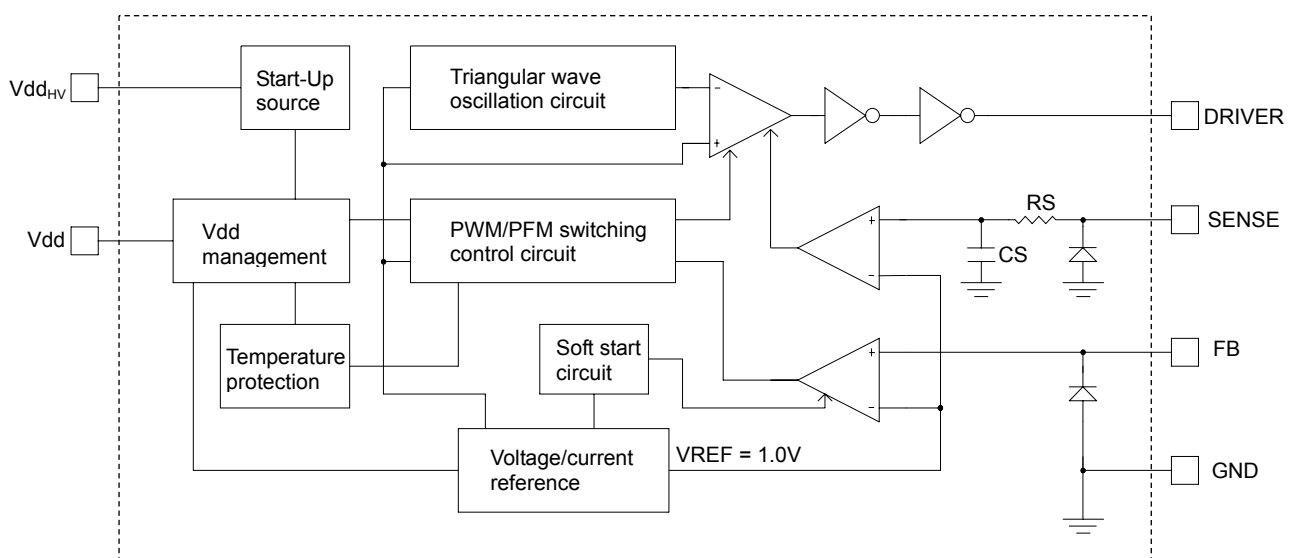
DIP 8 PACKAGE

Power dissipation (P _D), T _A = 25 °C	1.31W
Thermal Resistance-Junction to Ambient, θ _{JA}	95°C /W

SO 8 PACKAGE

Power dissipation (P _D), T _A = 25 °C	757mW
Thermal Resistance-Junction to Ambient, θ _{JA}	165°C /W

BLOCK DIAGRAM



TYPICAL APPLICATIONS

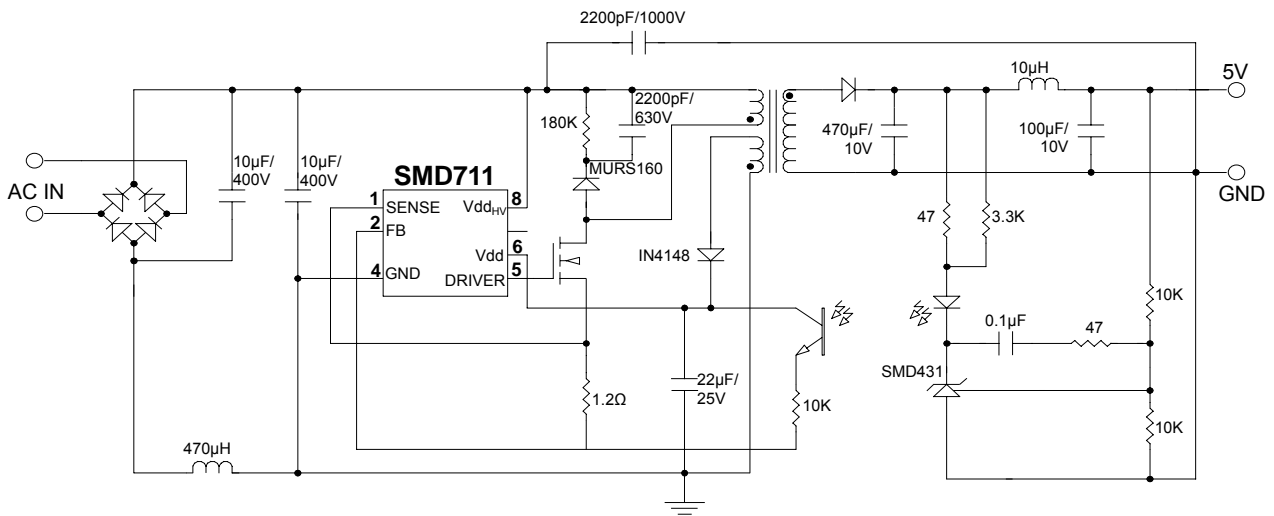


Fig. 1. 85 ~ 265V_{AC} input, 5V/0.7A Output Flyback Converter

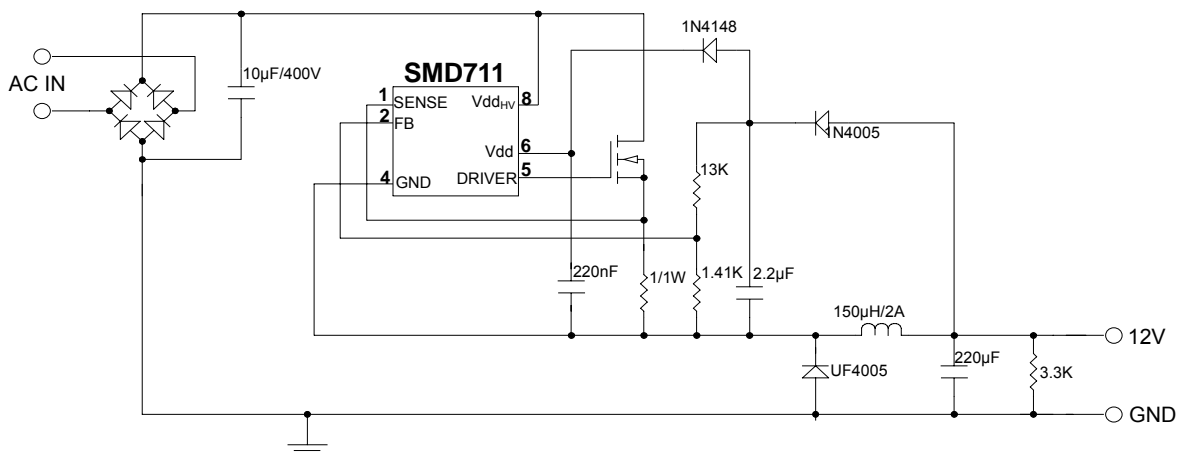


Fig. 2. 85 ~ 265V_{AC} input, 12V/0.5A Output Buck Converter

TYPICAL APPLICATIONS

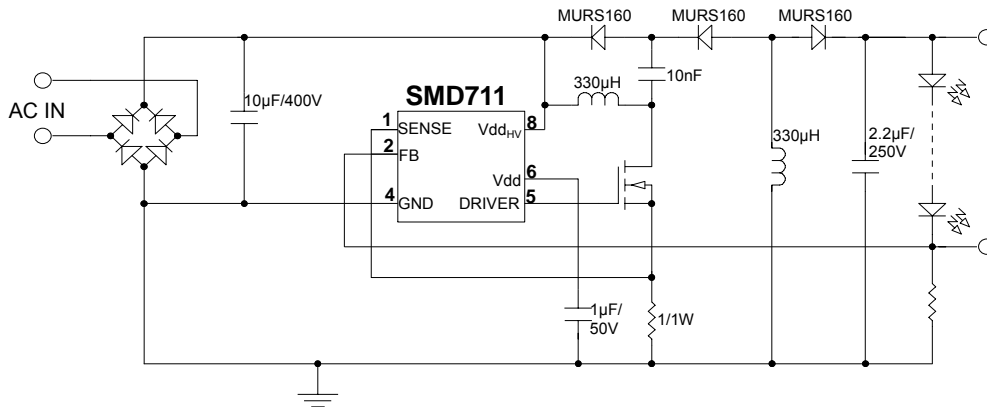


Fig. 3. 85 ~ 265V_{AC} input, 12V Output, SEPIC constant current mode

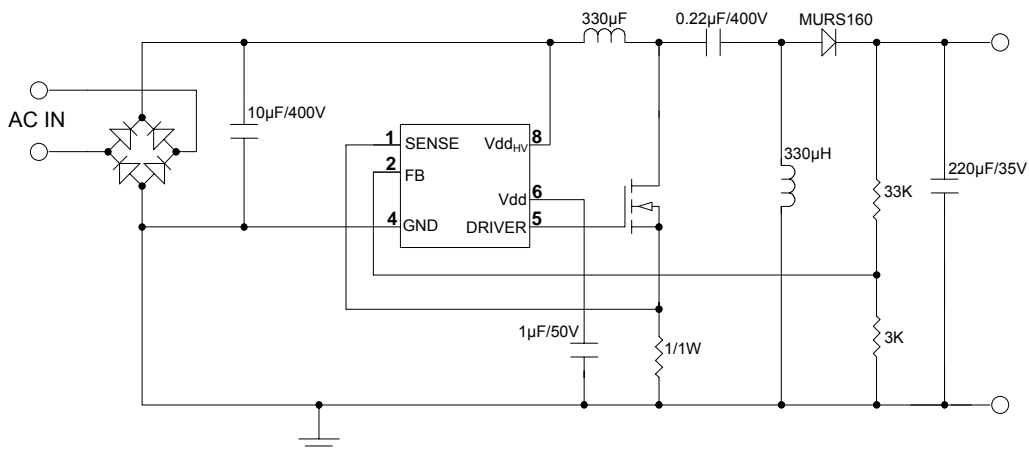


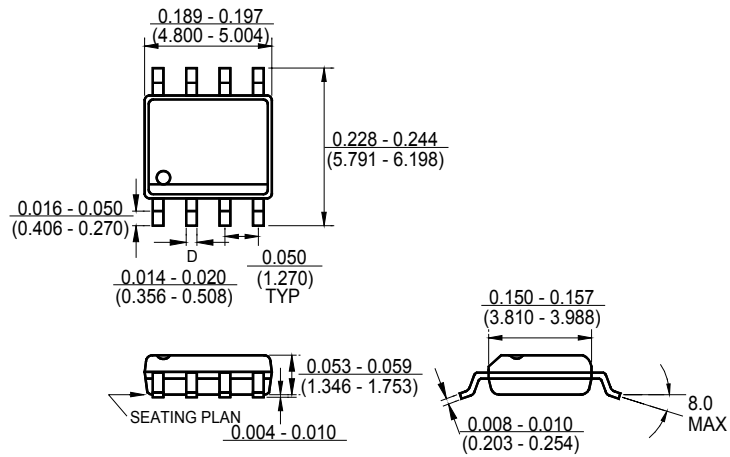
Fig. 4. 85 ~ 265V_{AC} input, 12V Output, SEPIC constant voltage mode

ELECTRICAL CHARACTERISTICS Unless otherwise specified, $T_A = 25^\circ\text{C}$.

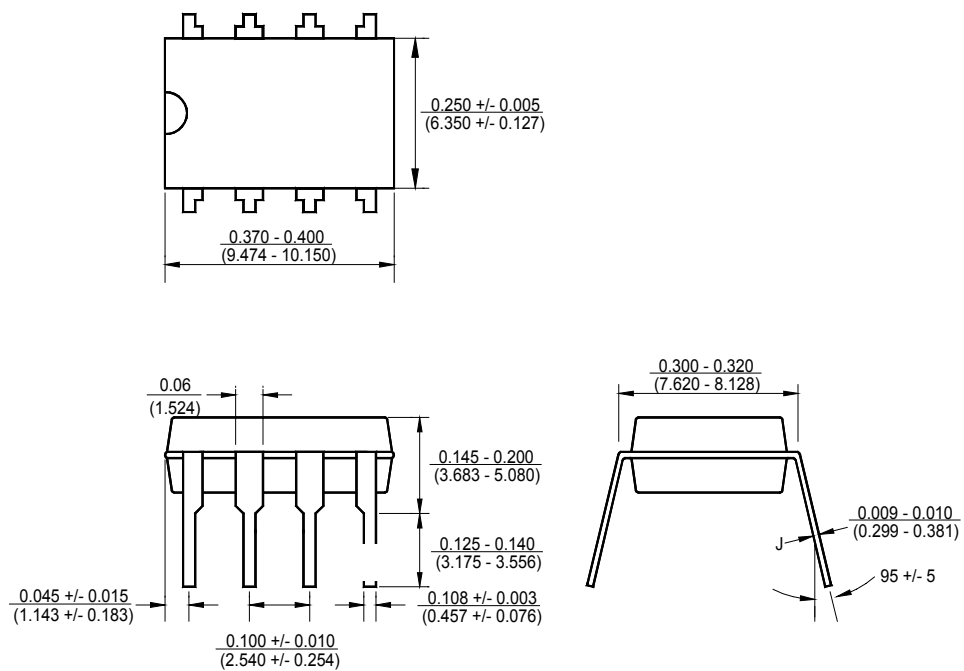
Parameter	Test Conditions	Symbol	Min	Typ	Max	Units
FB pin voltage	$V_{dd_{HV}} = 220\text{V}$, Duty = 50%	V_{FB}	0.98	1.00	1.02	V
	$V_{dd_{HV}} = 220\text{V}$, Duty = 50%, $T_A = -25^\circ\text{C}$ to 85°C		0.96	1.00	1.04	
Line regulation	30V $V_{dd_{HV}}$ 300V, Duty = 50%	V_{FB1}	-	-	40	mV
Oscillation start voltage	No external component. The voltage is applied to $V_{dd_{HV}}$	V_{ST}	-	-	30	V
Current consumption in static mode	$V_{dd_{HV}} = 220\text{V}$, $V_{FB} = 1.5\text{V}$	I_{SS1}	-	-	1	mA
Current consumption in dynamic mode	$V_{dd_{HV}} = 220\text{V}$, $V_{FB} = 0.5\text{V}$, Cdriver = 1nF	I_{SS2}	-	-	4	mA
Current limit detection voltage	$V_{dd_{HV}} = 220\text{V}$, Duty cycle < 50%	V_{SENSE}	0.9	1.0	1.1	V
Oscillation frequency	$V_{dd_{HV}} = 220\text{V}$, Measure waveform at DRIVER pin, $T_A = -25^\circ\text{C}$ to 85°C	f_{OSC}	80	90	100	kHz
Maximum duty ration	$V_{dd_{HV}} = 220\text{V}$, Measure waveform at DRIVER pin	MaxDuty	68	-	90	%
PWM/PFM-control switch duty ration	$V_{dd_{HV}} = 220\text{V}$, under no load	PFMDuty	2	5	8	%
Soft-Start time	$V_{dd_{HV}} = 220\text{V}$, $I_{OUT} = 50\text{mA}$, measure time until oscillation occurs at DRIVER pin	T_{SS}	5	-	20	ms
Thermal shut down		T_j		150		$^\circ\text{C}$

PACKAGE DESCRIPTION Dimensions in inches (millimeters) unless otherwise specified

S0 8

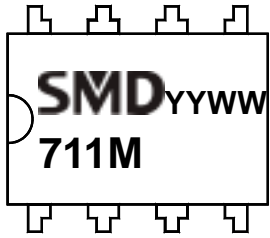


DIP 8

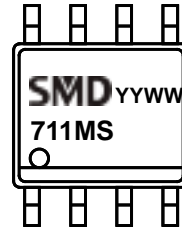


MARKING DIAGRAM

DIP 8



SO 8



YY = Year, WW = Working Week

IMPORTANT NOTICE

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