

FAN7711

Simple Ballast Control IC

Features

- Floating Channel Designed for Bootstrap Operation to +600V.
- Low Start-up and Operating Current : 100µA, 5.5mA
- Under Voltage Lock Out with 2V of Hysteresis
- Adjustable Run Frequency and Preheat Time
- Internal Adaptable ZVS Control
- Internal Protection Function(No Lamp)
- Internal Clamping Zener Diode
- High Accuracy Oscillator
- Soft Start

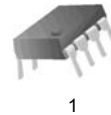
Applications

- Electronic Ballast

Description

- The FAN7711 provides simple and high performance for electronic ballast control. FAN7711 is optimized for Industrial Electronic ballast requiring a minimum board area, reduced component count and low power dissipation. The FAN7711 contains internally clamping zener diode and adaptive AVS control function in the classical half-bridge topology, ensuring all the features needed to drive and properly control a fluorescent lamp. A dedicated timing section in the FAN7711 allows the user set the necessary parameters for proper pre-heat and ignition of the lamp

8-DIP



8-SOP



Ordering Information

Part Number	Operating Temp. Range	Pb-Free	Package	Packing Method
FAN7711M	-40°C to +125°C	Yes	SOP	Tube
FAN7711MX				Tape & Reel
FAN7711N			DIP	Tube

Absolute Maximum Ratings (Ta = 25°C)

Parameter		Symbol	Value	Unit
High Side Floating Supply		V _B	-0.3 to 625	V
High side floating supply return		V _S	-0.3 to 600	
Supply Voltage		V _{DD}	30	
RT,CPH Pins Input Voltage		V _{IN}	-0.3 to 6	
Allowable Offset Voltage Slew Rate		dV _S /dt	50	V/ns
Operating Temperature Range		T _{opr}	-25 to 125	°C
Storage Temperature Range		T _{stg}	-65 to 150	
Power Dissipation	8-SOP	P _d		W
	8-DIP			
Thermal Resistance (Junction-to-Air)	8-SOP	R _{θja}		°C/W
	8-DIP			

Recommended Operating Ratings.

Parameter	Symbol	Value	Unit
Supply Voltage	V _{DD}	20	V

Temperature Characteristics (-25°C ≤ Ta ≤ 125°C)

Parameter	Symbol	Value	Unit
Temperature Stability for Operating Frequency (fos)	Δfos(Typ)	3	%

Electrical Characteristics

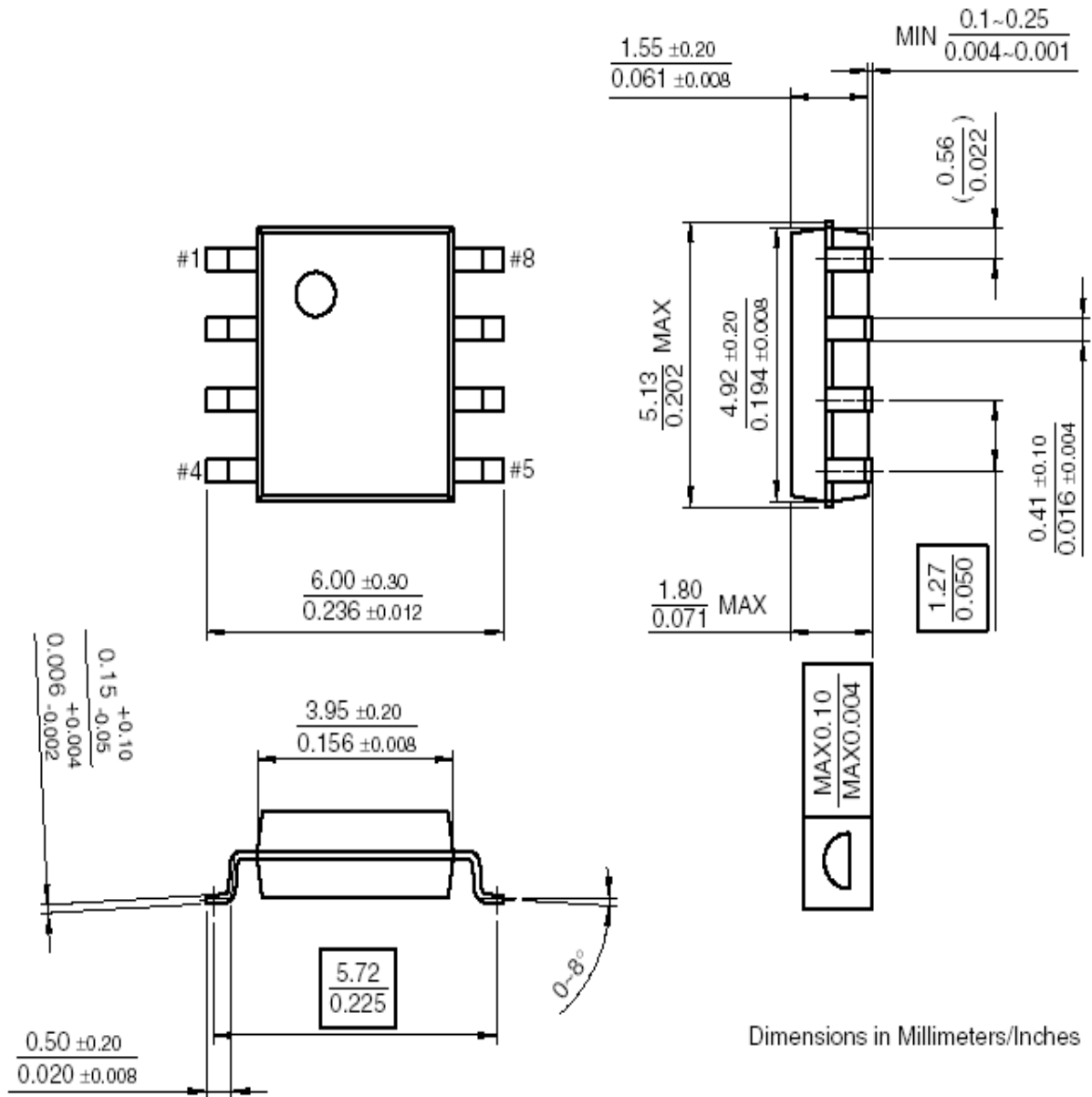
V_{DD}=14V, V_{BS}=14V, for typical values Ta=25°C. Unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage SECTION						
UVLO Positive going threshold	V _{TH(st+)}	V _{DD} Increasing	12.5	13	13.2	V
UVLO Negative going threshold	V _{TH(st-)}	V _{DD} decreasing	9.5	10	10.44	
UVLO Hysteresis	HY(st)	-	-	3	-	V
Supply Clamping Voltage	V _{CL}	IDD=10mA	14	15.4	17	V
Start Up Supply Current	I _{ST}	V _{DD} = 10V	70	91.8	170	μA
Operating Supply Current	I _{DD}	Output not switching	-	5.5	9.5	mA
Dynamic Operating Supply Current(I _{CC} +I _{QBS})	I _{DD}	50kHz, C _L =1nF	-	6.5	10.5	mA
Minimum Dead-time	Dtmin	VCPH=6V,Vs=GND	-	1	-	μS
Maximum Dead-time	Dtmax	VCPH=1V,Vs=GND	-	3.2	-	μS
Running Frequency	fosc	Rt=80kΩ	48.5	50	51.5	kHz
Preheating frequency	fpre	VCPH=2V	70	80	90	kHz
CPH Pin Charging Current during preheating	I _{ph}	VCPH=1V	1.3	1.65	1.8	μA
CPH Pin Charging Current during ignition	I _{ig}	VCPH=4V	8.5	9.6	12	μA
Shutdown Voltage	VSD		-	3	-	V
Thermal Shutdown	TSD		-	-	140	°C
OUTPUT SECTION(Ta=25°C)						
VBS UVLO positive going threshold	VBSSUV+		8.1	8.9	9.7	V
VBS UVLO negative going threshold	VBSSUV-		7.5	8.3	9.1	V
VBS UVLO Hysteresis	VBShys		-	0.6	-	V
VBS Quiescent Current	I _{QBS}	VBS=15V,Vs=GND	30	40	60	μA
Offset Supply Leakage Current	ILK	VB=VS=625V	-	-	45	μA
High Side Driver Sourcing Current	IOH+	PW=10μs	250	350	-	mA
High Side Driver Sinking Current	IOH-	PW=10μs	500	650	-	mA
Low Side Driver Sourcing Current	IOL+	PW=10μs	250	350	-	mA
Low Side Driver Sink Current	IOL-	PW=10μs	500	650	-	mA
High Side Driver Turn-On Rising Time	THOR	CL=1nF,VBS=15V,Vs=0 or 600V	-	45	-	ns
High Side Driver Turn-Off Rising Time	THOL	CL=1nF,VBS=15V,Vs=0 or 600V	-	25	-	ns
Low Side Driver Turn-On Rising Time	TLOR	CL=1nF,VBS=15V,Vs=0 or 600V	-	45	-	ns
Low Side Driver Turn-Off Rising Time	TLOL	CL=1nF,VBS=15V,Vs=0 or 600V	-	25	-	ns
Maximum Allowable Negative VS Swing Range for Signal Propagation to High side Output	VS		-	-10	-	V

Package Dimensions

Dimensions in millimeters/inches

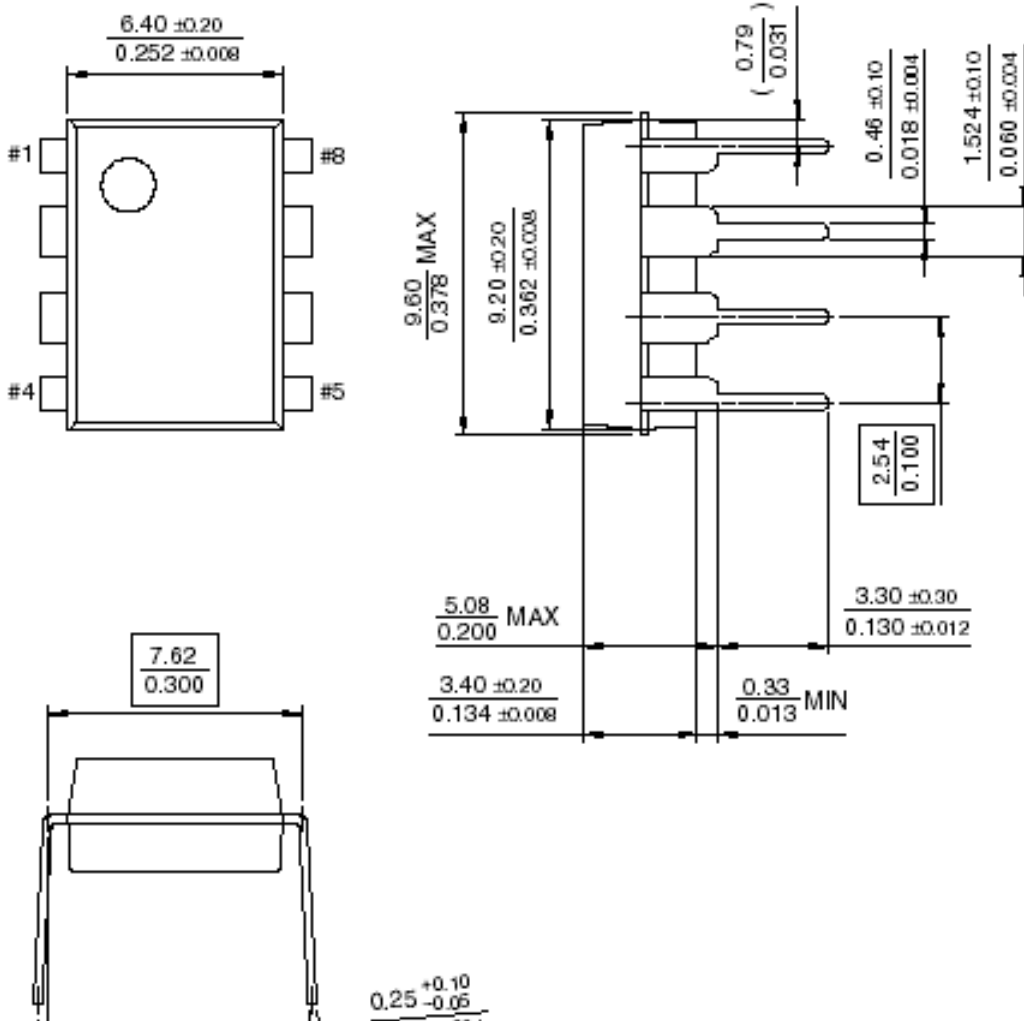
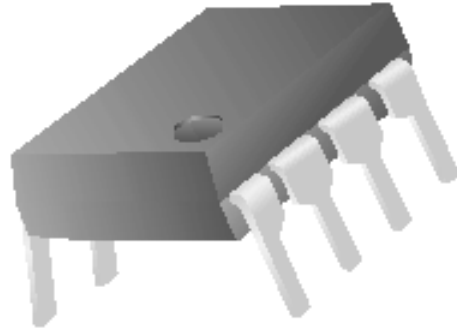
8-SOP-225



Package Dimension

Dimensions in millimeters/inches

8-DIP-300



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