Offline Q a i-Re nan PWM C n lle

FAN6080HMX

The FAN6080HMX is an advanced PWM controller aimed at achieving power density of ≥10 W/in^3 in universal input range AC/DC flyback specification(s).

Specification(s)5535 s 5−Star Level3.7d CoC Ti064II

FAN6080HMX includes several features aimed at optimizing efficiency, EMI and protections. FAN6080HMX has a wide blanking frequency range that improves light load efficiency. The maximum operating frequency is optimized to minimize components temperature while maximizing the full load efficiency. The minimum peak current is also set to optimize to balance the standby power consumption and the audio noise. It also includes several rich programmable protection features such as over−voltage protection

PIN FUNCTION DESCRIPTION

Pin No.	Pin Name	Description
1	HV	

ELECTRICAL CHARACTERISTICS

(For typical values T_J = 25°C, for min/max values T_J = −40°C to 125°C, V_{DD} = 15 V; unless otherwise noted)

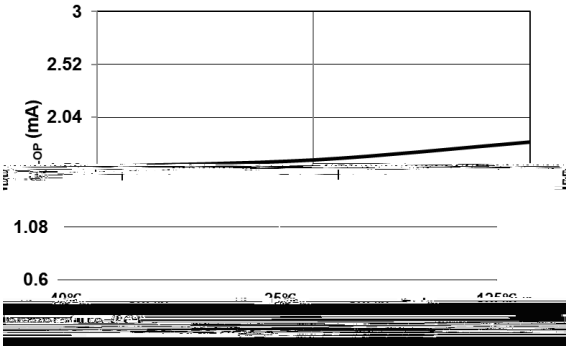
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
HV SECTION						
I_{HV}	Supply Current Drawn from HV Pin	V_{HV} = 120 V, V_{DD} = 0 V	1.2	2.0	10	mA
I_{HV-LC}	Leakage Current Drawn from HV Pin	V_{HV} = 600 V, V_{DD} = V_{DD-OFF} + 1 V	0	0.8	10	μA
$V_{Brown-IN}$						

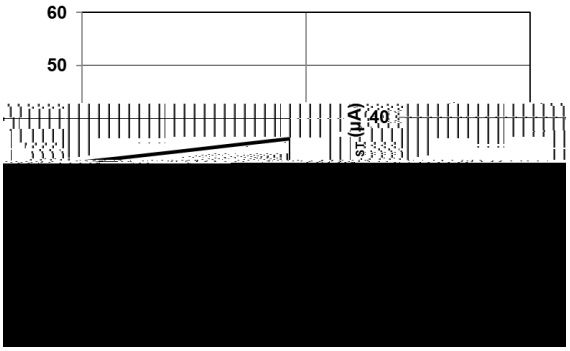
ELECTRICAL CHARACTERISTICS

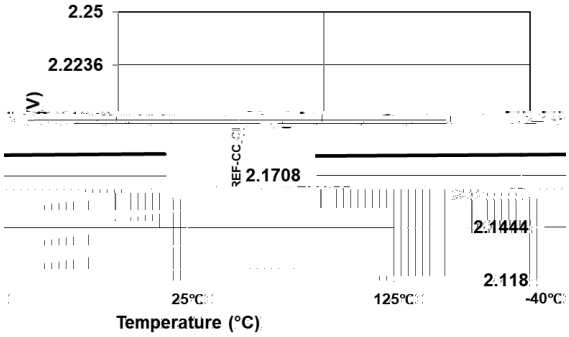
(For typical values T_J = 25°C, for min/max values T_J = −40°C to 125°C, V_{DD} = 15 V; unless otherwise noted) (continued)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
VOLTAGE−SENSE SECTION						
I_{VS-LH}	VS Source Current Threshold to Enable $V_{FB-BNK-LL-H/L}$ from High to Low Line		1.208	1.350	1.492	mA
$t_{D-VS-LD}$	Line Detection Debounce Time for I_{VS-LH}		11	17	23	ms
$I_{VS-Brown-Out}$	VS Source Current Threshold to Enable Brown−out	Set I_{VS} = 2.161 mA at 264 V_{AC}, brown out level = 55 V_{AC}	370	450	520	μA

TYPICAL PERFORMANCE CHARACTERISTICS







FAN6080HMX

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

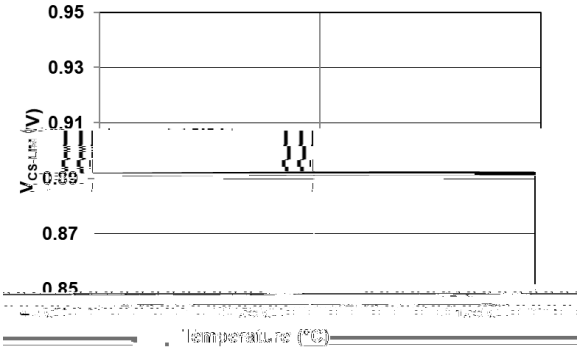


Figure 15. Current Limit Threshold Voltage (V_{CS-LIM}) vs. Temperature

Figure 16. Current Sense Threshold Voltage ($V_{CS-IMIN}$) vs. Temperature

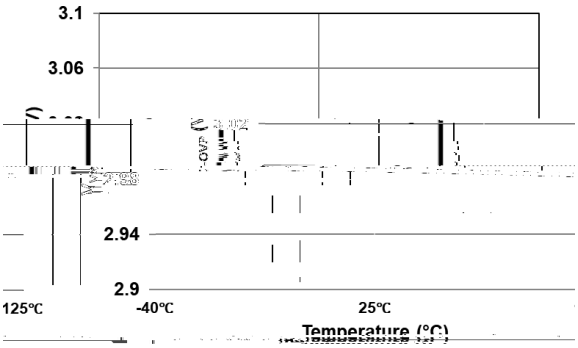


Figure 17. Output Over−Voltage Protection with VS Sampling Voltage (V_{VS-OVP}) vs. Temperature

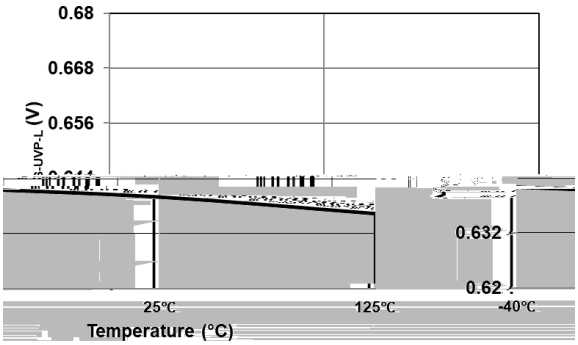


Figure 18. Output Under−Voltage Protection with VS Sampling Voltage ($V_{VS-UVP-L}$) vs. Temperature

Line Voltage Detection

The FAN6080HMX indirectly senses the line voltage through the VS pin while the MOSFET is turned on. During

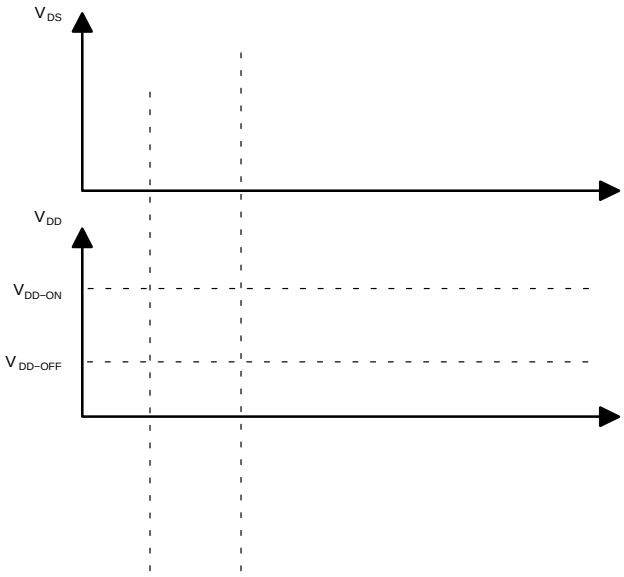


Figure 23. Auto−restart Mode Operation (e.g. VDD−OVP)