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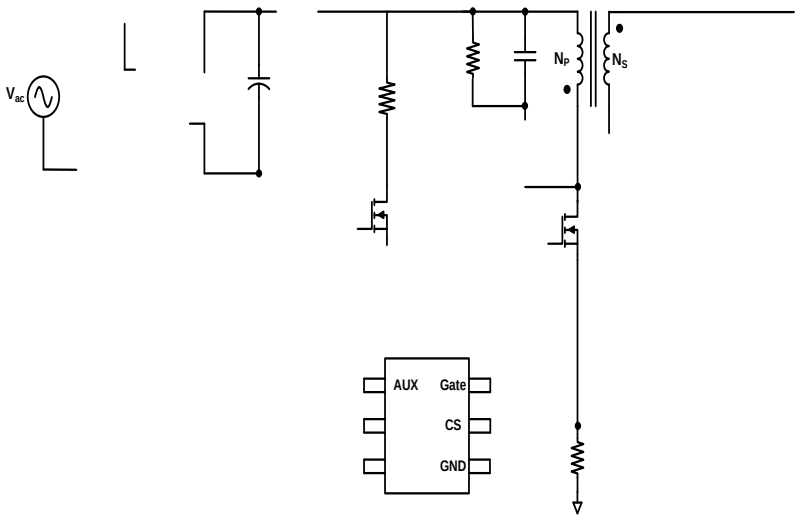

Figure 1. FAN105B Typical Application Schematic

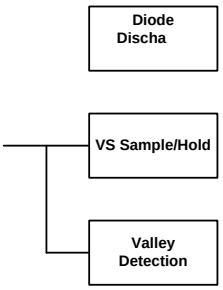

Figure 2.FAN105B Function Block Diagram

PIN FUNCTION DESCRIPTION

Pin #

ABSOLUTE MAXIMUM RATINGS (Note 1,2,3,4)

Parameter

ELECTRICAL CHARACTERISTICS

V_{DD}=12 V and T_A=-40~85 C unless noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
VDD Section						
Turn-On Threshold Voltage		V_{DD-ON}	16.5	17.5	18.5	V
Turn-Off Threshold Voltage		V_{DD-OFF}	6.1	6.5	6.9	V
V_{DD} Over-Voltage-Protection Level		V_{DD-OVP}	26.5	28.0	29.5	V
V_{DD} Over-Voltage-Protection De-bounce Time		t_{D-VDD-}				

Continues on next page…

ELECTRICAL CHARACTERISTICS

V_{DD}=12 V and T_A=-40~85 C unless noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Voltage Sampling Section						
Reference Voltage of Constant Voltage Feedback		V_{VR}	2.475	2.500	2.525	V
VS Sampling Phase-Shift Resistance(7)		$R_{VS-S/H}$		300		kΩ
VS Sampling Phase-Shift Capacitance(7)		$C_{VS-S/H}$		5		pF
VS Sampling Blanking Time of High Level	Io over 100mA	t_{VS_BNK-H}	1.65	1.80	2.00	µs
VS Sampling Blanking Time at CC Controlling		t_{VS_BNK-CC}	2.05	2.20	2.35	µs
VS Discharging Time Judgment Threshold Voltage(7)		$V_{VS-Offset}$	150		250	mV
Voltage Sense Section						
Temperature-Independent Bias Current		I_{TC}	9.0	10.0	11.0	µA

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Typical Performance Characteristics

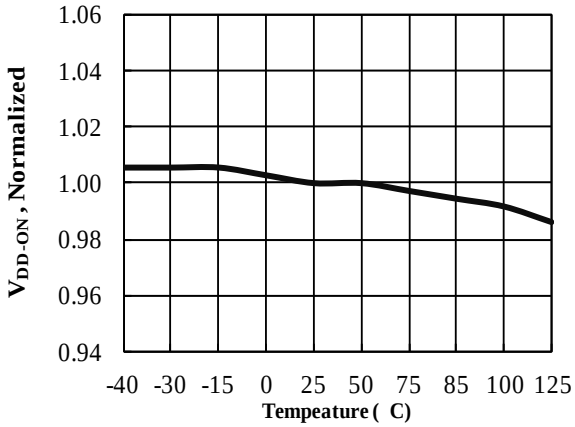

Figure 3.Turn-On Threshold Voltage (V_{DD-ON}) vs. Temperature

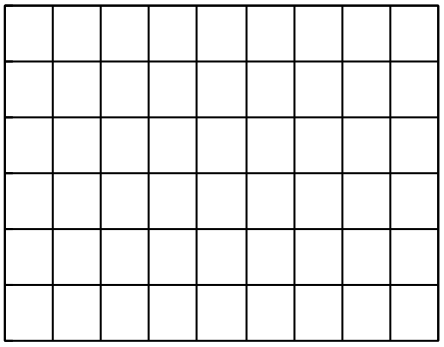

Figure 4.Turn-Off Threshold Voltage (V_{DD-OFF}) vs. Temperature

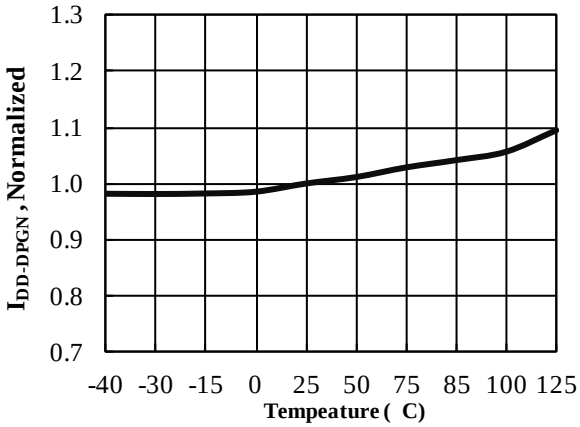

Figure 5.Operating Supply Current (I_{DD-OP}) vs. Temperature

Figure 6.Deep Green Mode Operation Current ($I_{DD-DPGN}$) vs. Temperature

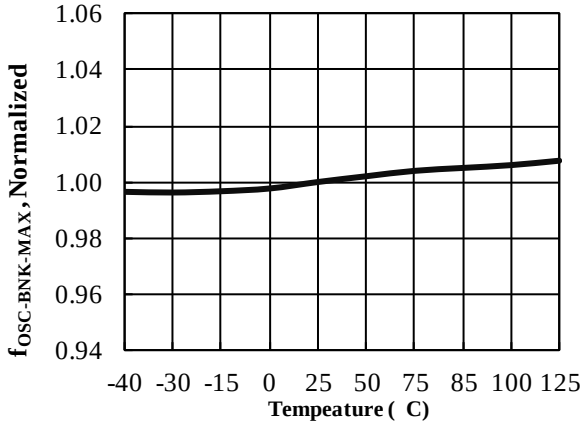

Figure 7.Maximum Operation Frequency of QR Blanking Time ($f_{OSC-BNK-MAX}$) vs. Temperature

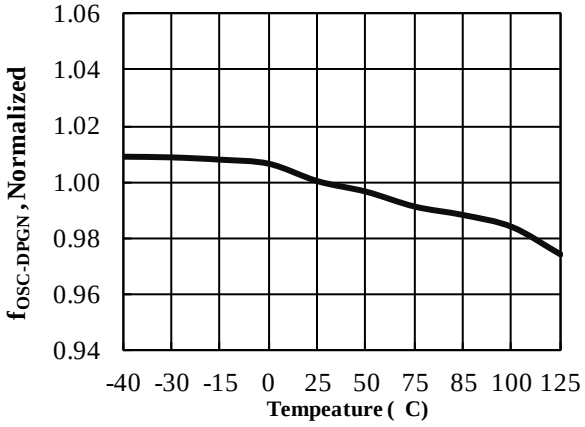

Figure 8. Deep Green Mode Operation Frequency ($f_{OSC-DPGN}$) vs. Temperature

Typical Performance Characteristics

Figure 15.Maximum Gate Turn On Time (t_{ON-MAX}) vs. Temperature

Figure 16.Dynamic trigger current threshold (I_{ZTC}) vs. Temperature

Figure 17.Cable Compensation Level 4 Reference Voltage($V_{VS-CDC4}$) vs. Temperature

Figure 18.

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Typical Performance Characteristics

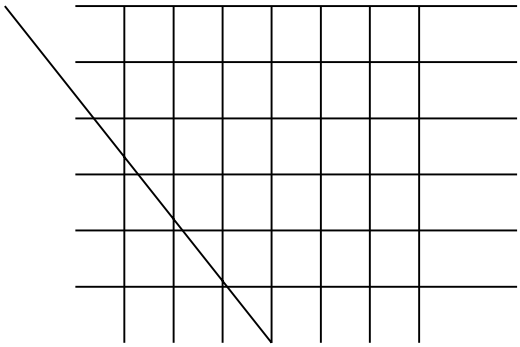

Figure 21.Blanking time of VSUVP(t_{VS-UVP}) vs. Temperature

Figure 22.VDD Over Voltage Protection Threshold (V_{DD-OVP}) vs. Temperature

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V_{VS} regulated boundary are between $V_{VS-EAV-H}$ and $V_{VS-EAV-L}$. After exit DPGN, internal regulation reference voltage was changed to V_{VR}.

FAN105B DPGN entry and exit criteria showed as below:

DPGN entry need to meet both criteria as below:

Minimum frequency ($f_{OSC-MIN}$) operation continues over than $N_{DPGN-Entry}$ switching cycles.

EAV > $V_{VS-EAV-H}$(2.550V).

DPGN exit criteria, meet one of below criteria:

EAV < $V_{VS-EAV-L}$ (2.525V) and maximum on time at DPGN.

EAV < $V_{VS-EAV-DYN}$(2.4V).

During the DPGN mode controlling, FAN105B decreases the operating current

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