Test Report

TIDA-00507

TPS53625 Intel® Atom™ C2000 PVNN
PVNN- Configuration

- 1-phase mode
- MOSFET: TI Power Stage: CSD97374Q4M
- Inductor: 2.2uH, 7mohm
- Output Capacitor:
  - Bulk: No Bulk
  - Ceramic: 4x47uF
- Max Current: 2.3A
- Frequency: 600KHz
- Zero Load-line
- Ramp 100mV
- SVID Address: 01h
- OSR disabled
Frequency Variation

Frequency setting = 600kHz

Load Current (A) vs Frequency (kHz) graph.
PS0 Efficiency

PS0 state Efficiency

Efficiency (%)

Load Current (A)

Efficiency

Efficiency (%) vs Load Current (A) graph for PS0 state Efficiency.
Loadline

PS0 Loadline

- Measured
- Ideal

Vout (V)

Load Current (A)
Analog Current Monitor Output (IMON)

Load Current (A) vs. IMON Voltage (V) graph showing a linear relationship with a slope of 0.8 V/A.
Ripple and jitter
Vin 9V

Load 0A
Ripple: 7.8mV

Load 2.3A
Ripple: 8.1mV
Ripple and jitter
Vin 12V

Load 0A
Ripple: 8.4mV

Load 2.3A
Ripple: 8.4mV
Ripple and jitter
Vin 15V

Load 0A
Ripple: 8.4mV

Load 2.3A
Ripple: 8.5mV
Load Transient Performance
1A to 2A (PS0 state)- 50% duty cycle

DC and AC ripple guideline: +/-64mV
Output Voltage waveform well within the +/-64 mV lines
Load fall
Overshoot: 26mV

Load rise
Droop: 23mV
Dynamic VID
0.65V-1.24V Fast up 1A load

Rise Slew rate: 12.05 mV/us
Overshoot: 24.3 mV
Dynamic VID
0.65V-1.24V Fast Down 1A load

Fall Slew rate: 12.23 mV/us

Droop: 20.5mV
Dynamic VID
0.65V-1.24V Slow Up 1A load

Rise Slew rate: 3.21mV/us

Overshoot: 18.1mV
Dynamic VID
0.65V-1.24V Slow Down 1A load

Fall Slew-rate: 3.1mV/us  
Droop: 10.8mV
Dynamic VID
0.65V-1.24V Decay 1A load

Decay Slew-rate: 6.1mV/us
Droop: 24.8 mV
PS transition
PS0-PS2 0A load
PS transition
PS0-PS2 0.1A load

PS0 to PS2 voltage change: 17mV
PS2 to PS0 voltage change: 19mV
PS transition
PS0-PS2 0.2A load

PS0 to PS2 voltage change: 12mV

PS0 to PS2 voltage change: 20mV
PS transition
PS0-PS3 0A load
PS transition
PS0-PS3 0.1A load

PS0 to PS3 voltage change: 22.2mV

PS3 to PS0 voltage change: 22.8mV
PS transition
PS0-PS3 0.5A load

PS0 to PS3 voltage change: 6.7mV

PS3 to PS0 voltage change: 14mV
PS0-PS3 droop: 4.4mV

PS3-PS0 droop: 4.6mV
PS transition
PS2-PS3 0.5A load

PS2 to PS3 voltage change: 9.3mV

PS3 to PS2 voltage change: 12.5mV
PS2-PS3 droop: 4.5mV  

PS3-PS2 droop: 6.2mV
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