Product Change Notice

Notice: #120713 **Date: JUL 13 2012**

To Our Valued Customers:
We appreciate your use of VI Chip products. Our commitment to customer satisfaction is demonstrated by our notification to you of the following change.

Description:
VI Chip VTM reverse inrush protection functionality has been standardized across the whole portfolio. The half-chip VTMs referenced below have been brought in line with the range.

Reverse inrush protection inhibits the flow of current in the reverse direction (output to input) of a VTM during the startup phase. This feature is important in applications where sensitive electronics in the system may react negatively to a dV/dt caused in the system by the rapid discharge of capacitive stored energy on the output of a VTM. Reverse Inrush Protection (RIP) prevents the rapid discharge of this stored energy by preventing reverse current flow, thereby keeping the stored charge on the secondary side of the VTM.

As updated, the VTM will function bi-directionally when enabled.

Product datasheets have been updated to reflect the change and the relevant section (16) is included in this PCN as an appendix (old and new versions shown).

Products Affected:
Half-chip VTMs with 1.5V, 2V nominal output:

VIV0102THJ
VIV0103THJ
VTM48EF015T050A00
VTM48EF020T040A00

Schedule / Datecodes:
Parts shipped from 10 JUN 2012 (marked with week code 1224) have the updated function.

Action Required:
Vicor does not expect any change in customer application performance. However customers may like to verify that operation is consistent.

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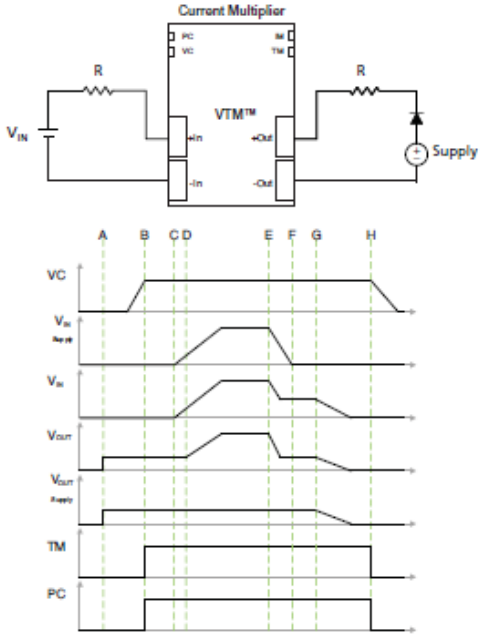
Appendix:

Original description of Reverse Current Protection

16.0 REVERSE INRUSH CURRENT PROTECTION

The VTM48EH015T050A00 provides reverse inrush protection which prevents reverse current flow until the input voltage is high enough to first establish current flow in the forward direction. In the event that there is a DC voltage present on the output before the VTM module is powered up, this feature protects sensitive loads from excessive dV/dT during power up as shown in Figure 21.

If a voltage is present at the output of the module which satisfies the condition VOUT > VIN • K after a successful power up the energy will be transferred from secondary to primary. The input to output ratio of the module will be maintained. The module will continue to operate in reverse as long as the input and output voltages are within the specified range. The VTM48EH015T050A00 has not been qualified for continuous reverse operation.



A: V_{OUT} supply > 0 V
B: VC to -IN > 12 V controller wakes-up, PC & TM pulled high, reverse inrush protection blocks V_{OUT} supplying V_{IN}
C: V_{IN} supply ramps up
D: $V_{IN} > V_{OUT}/K$, powertrain starts in normal mode
E: V_{IN} supply ramps down
F: $V_{IN} > V_{OUT}/K$, powertrain transfers reverse energy
G: V_{OUT} ramps down, V_{IN} follows
H: VC turns off

Figure 21 — *Reverse inrush protection*

Revised description of Reverse Operation

16.0 REVERSE OPERATION

The VTM48EH040T025A00 is capable of reverse operation. If a voltage is present at the output which satisfies the condition $V_{OUT} > V_{IN} \bullet K$ at the time the VC voltage is applied, or after the unit has started, then energy will be transferred from secondary to primary. The input to output ratio will be maintained. The VTM48EH040T025A00 will continue to operate in reverse as long as the input and output are within the specified limits. The VTM48EH040T025A00 has not been qualified for continuous operation (>10 ms) in the reverse direction.