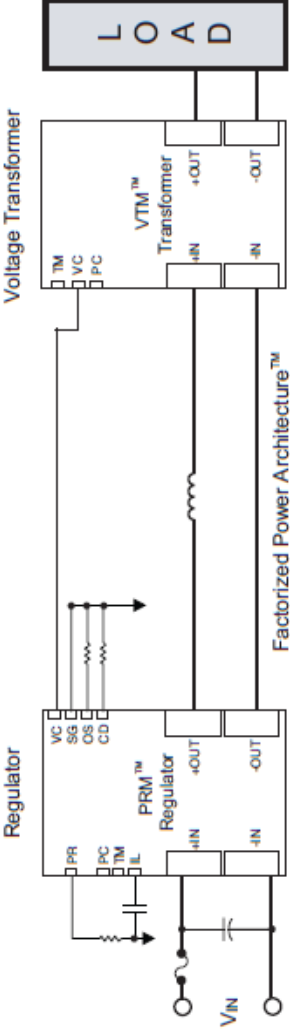


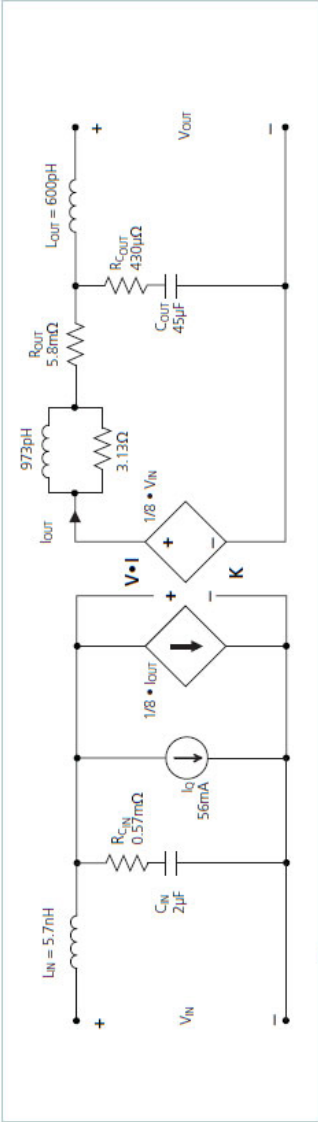
EXHIBIT 3

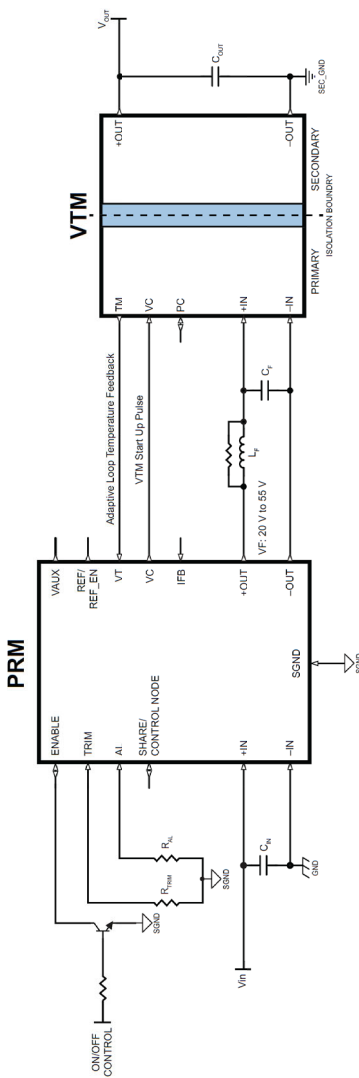
Infringement of Exemplary Claims 1, 3, and 10 of U.S. Patent No. 8,711,580 (the '580 patent)

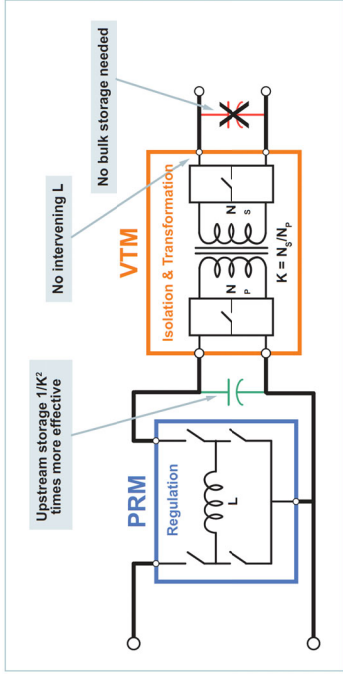
The accused products include, but are not limited to, Vicor's factorized power products, which include but are not limited to at least the following models: PRM48AF480T400A00, PRM48AH480T200A00, PRM48AH480X200A00, PRM48BH480T200B00, PRM48BH480T250A00, PRM48JH480T250A00, PRM48JH480T250A02, PRM48BF480T400B00, PRM48BF480T500A00, PRM48JF480T500A00, PRM48BF480T600A00, PRM2313S60E54H0T00, VTM48EF012T130C01, VTM48EF030T070A00, VTM48EF040T050B00, VTM48EF040T050B0R, VTM48EH040T025B00, VTM48EF060T040A00, VTM48EF080T030A00, VTM48EF096T025A00, VTM48EF120T025A00, VTM48EF120T025A0R, VTM48EH120T010B00, VTM48EF160T015A00, VTM48EF240T012A00, VTM48EF320T009A00, VTM48EF480T006A00, VTM2308S60Z0825TZ0, VTM2308S60Z1513TZ0, VTM48EF012T130A00, VTM48EF012T130C01, VTM48EF030T070A00, VTM48EF040T050B00, VTM48EF040T050B0R, VTM48EH040T025B00, , VTM48EF080T030A00, VTM48EF096T025A00, VTM48EF120T025A00, VTM48EF120T025A0R, VTM48EH120T010B00, VTM48EH120T010B00, VTM48EF160T015A00, VTM48EF240T012A00, VTM48EF320T009A00, VTM48EF480T006A00, VTM2308S60Z0825TZ0, VTM2308S60Z1513TZ0. (See *generally* PRM Regulator and VTM Current Multiplier, Factorized Power – Flexible DC-DC Converter Solutions, available at https://www.vicorpower.com/documents/family_overviews/fo_PRM-Module-VTM-Current-Multiplier.pdf), and other of Vicor's VTM and PRM modules. A chart of exemplary claim 1, 3, and 10 against exemplary VTM48EF060T040A00 and PRM48AF480T400A00, PRM48AH480X200A00 provided together in an end system is provided below.

Annotations and identification of elements in this chart are preliminary, are not final, nor are they intended to limit Plaintiff's identification of claim elements in Vicor's infringing products. Furthermore, VTM48EF060T040A00 and PRM48AF480T400A00, PRM48AH480X200A00 and the below claims have been provided as representative, and Plaintiff reserves the right to identify additional products and claims, and identify further representative products. Plaintiff reserves the right to amend, supplement, expand, modify, or narrow its identifications in the accused products as it develops facts during discovery, based on the Court's claim constructions, or for any other allowable purpose in this action.

8,711,580	VTM48EF060T040A00 and PRM48AF480T400A00 The VTM48EF060T040A00 and PRM48AF480T400A00 provide a resonant conversion system.  (VTM48Ex060y040A00 datasheet at 1.)
a resonant converter, receiving an input voltage to generate an output voltage;	The VTM48EF060T040A00 and PRM48AF480T400A00 provide a resonant converter, receiving an input voltage to generate an output voltage. The VTM48EF060T040A00 is a resonant converter, which receives an input voltage to generate an output voltage.

	Sine Amplitude Converter™ Point-of-Load Conversion The Sine Amplitude Converter (SAC) uses a high-frequency resonant tank to move energy from input to output. (The resonant tank is formed by Cr and leakage inductance Lr in the power transformer windings.) The resonant LC tank, operated at high frequency, is amplitude modulated as a function of input voltage and output current. A small amount of capacitance embedded  Figure 17 — VI Chip® module AC model (VTM48Ex060y040A00 datasheet at 12.)
a buck converter, providing the input voltage and controlling the input voltage for performing an over-current protection process; and	The VTM48EF060T040A00 and PRM48AF480T400A00 provide a buck converter, providing the input voltage and controlling the input voltage for performing an over-current protection process. The PRM48AF480T400A00 is a buck converter that provides the input voltage to a VTM (e.g., VTM48EF060T040A00). Features • 48.0 V input (36.0 V to 75.0 V), non-isolated ZVS buck-boost regulator

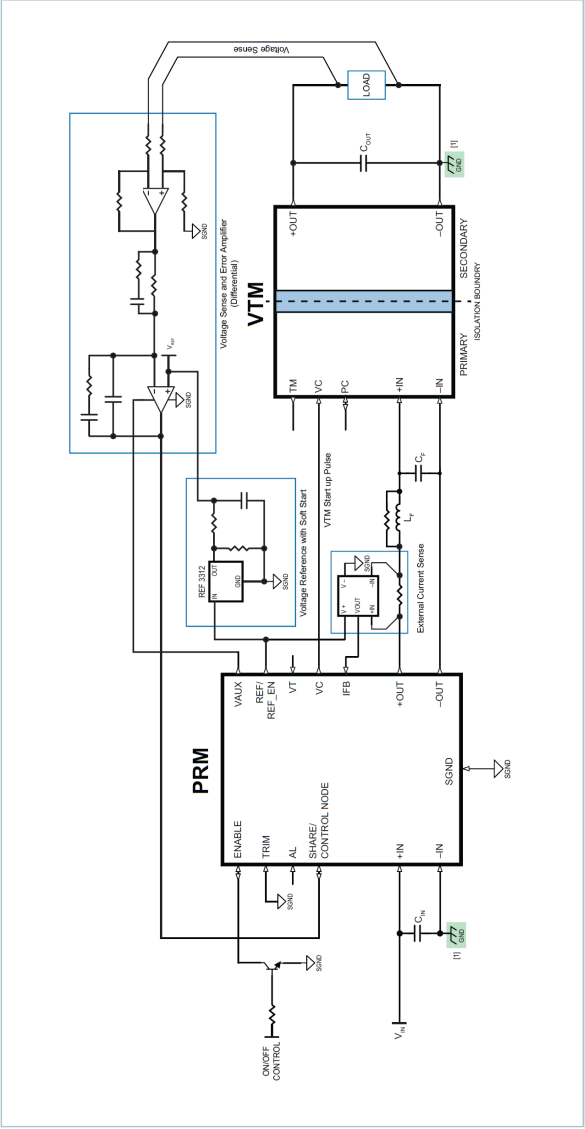
	 (PRM48Ay480x400A00 Datasheet at 1-2.)
a first controller, decreasing a duty cycle of a switching device of the buck converter to decrease the input voltage received by the resonant converter, when the resonant converter generates the over-current,	The VTM48EF060T040A00 and PRM48AF480T400A00 provide a first controller, decreasing a duty cycle of a switching device of the buck converter to decrease the input voltage received by the resonant converter, when the resonant converter generates the over-current. The PRM48AF480T400A00 is a buck converter, which modulates duty cycles to increase/decrease output voltage (the input voltage to the VTM48EF060T040A00). Features • 48.0 V input (36.0 V to 75.0 V), non-isolated ZVS buck-boost regulator (PRM48Ay480x400A00 Datasheet at 1.)



(Curatolo at 3, Factorized Power Architecture: Achieving high density and efficiency in board mounted power, available at <https://www.vicorpower.com/documents/whitepapers/wp-FPA-Achieving-high-density-efficiency-VICOR.pdf>.)

The PRM48AF480T400A00 decreases the output voltage when a VTM over-current is reached, *e.g.*, when a current limit is reached in Adaptive Loop Operation. (PRM48Ay480x400A00 Datasheet at 33 (excerpted below).) The VTM48EF060T040A00 uses a Sine Amplitude Converter, which moves energy from the input to the output, where the VTM's output is proportionally related to its input (where the VTM's input comes from the PRM) (VTM48Ex060y040A00 at 12-13). On information and belief, the PRM provides a limit in the Adaptive Loop mode. Given the configuration, the over-current in the PRM—thusly—equates to an overcurrent in the VTM, and control of the PRM overcurrent controls the VTM overcurrent.

	Current Limit (Adaptive Loop Operation) In Adaptive Loop Operation, the current limit is controlled by the internal microcontroller. The current limit approximates a “brick-wall” limit where the output current is prevented from crossing the current limit threshold by reducing the output voltage. The current limit threshold is pre-programmed into the internal microcontroller and cannot be changed externally. When the internal sensed current crosses the current limit threshold, the current limit will be activated after the detection time t_{LIM_SUPV}. Once activated, the microcontroller will reduce the error amplifier reference voltage (represented by REF) in order to maintain the output current at the limit value. Current limit is able to reduce the output down to V_{OUT_UVB} below which the device will shut down to output under voltage protection. (PRM48Ay480x400A00 Datasheet at 33.) The PRM and VTM are further configured to operate in a Remote Sense mode, which separately meets these limitations. Remote Sense configuration utilizes an External Sense circuit that provides signal IFB. (PRM48Ay480x400A00 Datasheet at 2 (excerpted below).) IFB is a “[c]urrent sense input for current limit and overcurrent protection in Remote Sense Operation.” (<i>Id.</i> at 4.) The output is based on the IFB value. (<i>Id.</i> at 29.) Further, given the configuration, the over-current in the PRM—thusly—equates to an overcurrent in the VTM, and control of the PRM overcurrent controls the VTM overcurrent.
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(PRM48Ay480x400A00 Datasheet at 2.)

IFB: Current Feedback (Remote Sense Operation)

In Remote Sense Operation, IFB is the input for the module output overcurrent protection and current limit features. A voltage proportional to the powertrain output current must be applied to IFB in order for overcurrent protection to operate properly. If the IFB voltage exceeds the IFB pin's overcurrent protection threshold, the powertrain will stop switching. If the IFB voltage falls below the overcurrent protection threshold within t_{BLANK} time, then the powertrain will immediately resume switching. Otherwise a fault is detected.

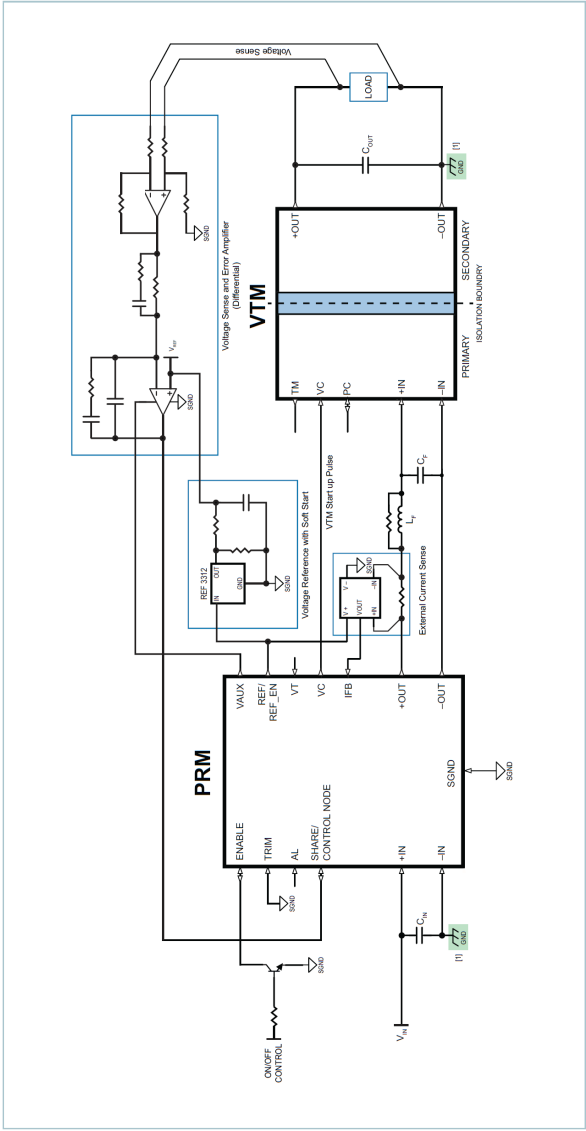
The current limit threshold for the IFB pin is set lower than the protection threshold. When the IFB pin average voltage exceeds the current limit threshold, an internal integrator will activate a clamp amplifier which overrides the modulator input maximum level. This causes the powertrain to maintain a constant output current. The bandwidth of this current limit integrator is significantly slower than that of the CONTROL NODE input. Therefore this current limit cannot be used in lieu of properly compensating the (external) control loop to avoid exceeding maximum current or power ratings for the device.

(PRM48Ay480x400A00 Datasheet at 29.)

wherein, when an output current exceeds a first predetermined current, the first controller determines that the resonant converter generates the over-current, and restricts the output current of the resonant converter in the first predetermined current or in a second predetermined current higher than the first predetermined current.	The VTM48EF060T040A00 and PRM48AF480T400A00 provide wherein, when an output current exceeds a first predetermined current, the first controller determines that the resonant converter generates the over-current, and restricts the output current of the resonant converter in the first predetermined current or in a second predetermined current higher than the first predetermined current. The PRM48AF480T400A00 determines when the output current exceeds a pre-programmed current limit in Adaptive Loop Mode (the brick-wall limit), and reduces the output voltage to prevent it from crossing that limit. Current Limit (Adaptive Loop Operation) In Adaptive Loop Operation, the current limit is controlled by the internal microcontroller. The current limit approximates a “brick-wall” limit where the output current is prevented from crossing the current limit threshold by reducing the output voltage. The current limit threshold is pre-programmed into the internal microcontroller and cannot be changed externally. When the internal sensed current crosses the current limit threshold, the current limit will be activated after the detection time t_{LIM_SUPV}. Once activated, the microcontroller will reduce the error amplifier reference voltage(represented by REF) in order to maintain the output current at the limit value. Current limit is able to reduce the output down to V_{OUT_UVB} below which the device will shut down do to output under voltage protection. (PRM48Ay480x400A00 Datasheet at 33.) The PRM48AF480T400A00 determines when the output current exceeds a measured current limit in Remote Sense mode.
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	IFB: Current Feedback (Remote Sense Operation) In Remote Sense Operation, IFB is the input for the module output overcurrent protection and current limit features. A voltage proportional to the powertrain output current must be applied to IFB in order for overcurrent protection to operate properly. If the IFB voltage exceeds the IFB pin's overcurrent protection threshold, the powertrain will stop switching. If the IFB voltage falls below the overcurrent protection threshold within t_{BLANK} time, then the powertrain will immediately resume switching. Otherwise a fault is detected. The current limit threshold for the IFB pin is set lower than the protection threshold. When the IFB pin average voltage exceeds the current limit threshold, an internal integrator will activate a clamp amplifier which overrides the modulator input maximum level. This causes the powertrain to maintain a constant output current. The bandwidth of this current limit integrator is significantly slower than that of the CONTROL_NODE input. Therefore this current limit cannot be used in lieu of properly compensating the (external) control loop to avoid exceeding maximum current or power ratings for the device. (PRM48Ay480x400A00 Datasheet at 29.) Finally, as stated immediately above, the VTM48EF060T040A00 uses a Sine Amplitude Converter, which moves energy from the input to the output, where the VTM's output is proportionally related to its input (where the VTM's input comes from the PRM) (VTM48Ex060y040A00 at 12-13). Given the configuration, the overcurrent in the PRM—thusly—equates to an overcurrent in the VTM, and control of the PRM overcurrent controls the VTM overcurrent.
3. The resonant conversion system as claimed in claim 1, further comprising at least one detection device detecting a signal corresponding to the output	The VTM48EF060T040A00 and PRM48AF480T400A00 provide at least one detection device detecting a signal corresponding to the output current of the resonant converter and outputting a first detection result to the first controller, such that the first controller, according to the first detection result, determines whether the resonant converter generates the over-current. As depicted below, the PRM48AF480T400A00 provides an External Current Sense circuit.

current of the resonant converter and outputting a first detection result to the first controller, such that the first controller, according to the first detection result, determines whether the resonant converter generates the over-current.



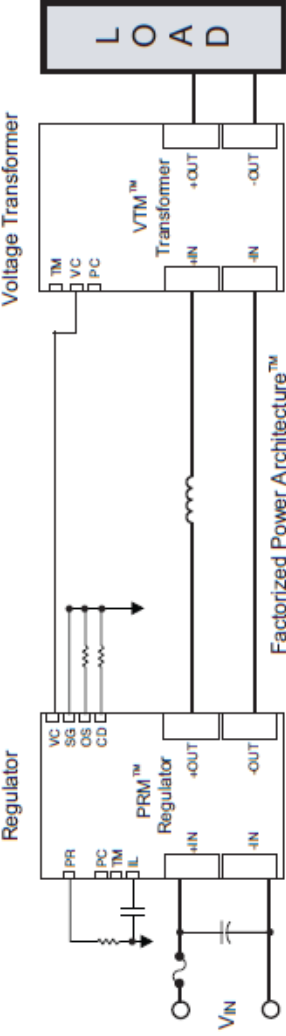
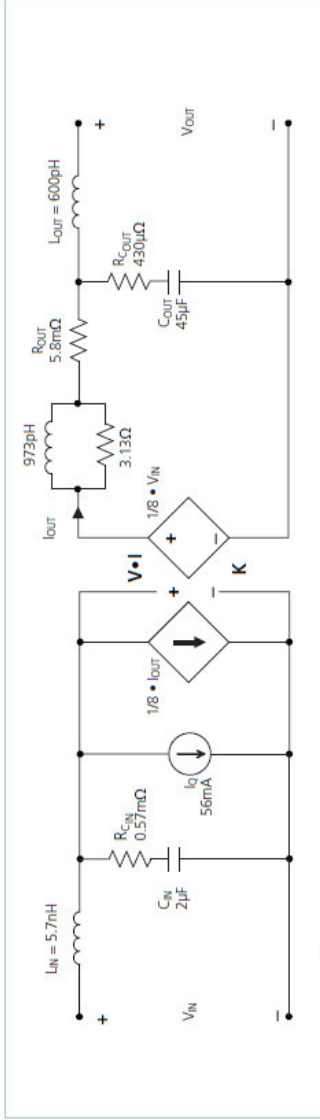
(PRM48Ay480x400A00 Datasheet at 2.)

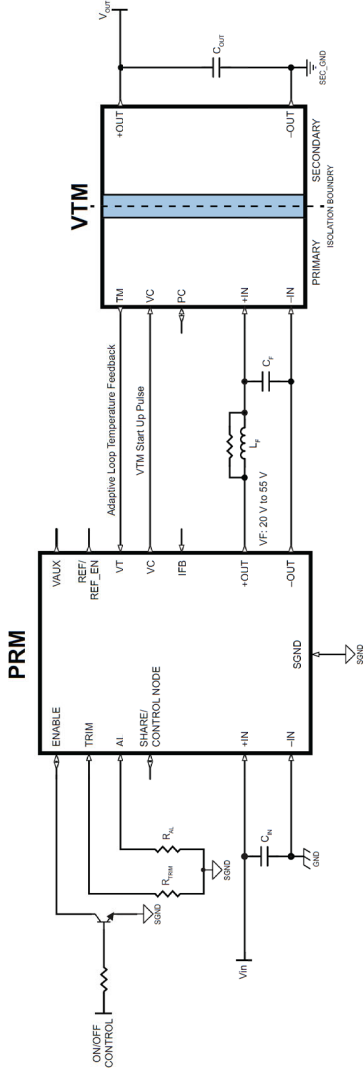
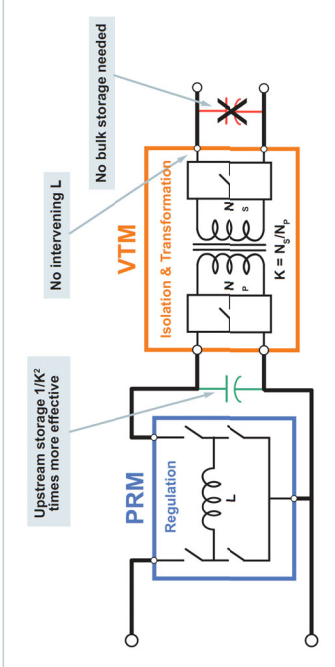
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VTM48EF060T040A00 and PRM48AH480X200A00

10. A resonant conversion system, comprising:

The VTM48EF060T040A00 and PRM48AH480x200A00 provide a resonant conversion system.

	 (VTM48Ex060y040A00 datasheet at 1.)
a resonant converter;	The VTM48EF060T040A00 is a resonant converter. Sine Amplitude Converter™ Point-of-Load Conversion The Sine Amplitude Converter (SAC) uses a high-frequency resonant tank to move energy from input to output. (The resonant tank is formed by Cr and leakage inductance Lr in the power transformer windings.) The resonant LC tank, operated at high frequency, is amplitude modulated as a function of input voltage and output current. A small amount of capacitance embedded  Figure 17 — VI Chip® module AC model (VTM48Ex060y040A00 datasheet at 12.)
a buck converter, providing a DC voltage to serve as an	The PRM48AH480X200A00 is a buck converter that provides the input voltage to a VTM (e.g., VTM48EF060T040A00), and the VTM generates an output voltage.

input voltage of the resonant converter such that the resonant converter generates an output voltage; and	Features • 48.0 V input (36.0 V to 75.0 V), non-isolated ZVS buck-boost regulator  (PRM48AH480x200A00 Datasheet at 1-2.)
a first controller, controlling the buck converter to decrease the input voltage received by the resonant converter for performing an over-current protection process, when determining that the resonant converter has generated an over-current,	The VTM48EF060T040A00 and PRM48AH480X200A00 provide a first controller, decreasing the input voltage received by the resonant converter, when the resonant converter generates the over-current. 

	(Curatolo at 3, Factorized Power Architecture: Achieving high density and efficiency in board mounted power, available at https://www.vicorpower.com/documents/whitepapers/wp-FPA-Achieving-high-density-efficiency-VICOR.pdf.) The PRM48AH480X200A00 decreases the output voltage when a VTM over-current is reached, e.g., when a current limit is reached in Remote Sense Operation. (PRM48AH480x200A00 Datasheet at 28 (excerpted below).) The VTM48EF060T040A00 uses a Sine Amplitude Converter, which moves energy from the input to the output, where the VTM’s output is proportionally related to its input (where the VTM’s input comes from the PRM) (VTM48Ex060y040A00 at 12-13). Remote Sense configuration utilizes an External Sense circuit that provides signal IFB. (PRM48AH480x200A00 Datasheet at 2 (excerpted below).) IFB is a “[c]urrent sense input for current limit and overcurrent protection in Remote Sense Operation.” (PRM48AH480x200A00 Datasheet at 3.) A voltage proportional to the powertrain output current must be applied to IFB in order for overcurrent protection to operate properly. (PRM48AH480x200A00 Datasheet at 28.) Further, given the configuration, the over-current in the PRM—thusly—equates to an overcurrent in the VTM, and control of the PRM overcurrent controls the VTM overcurrent.
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	IFB: Current Feedback (Remote Sense Operation) In Remote Sense Operation, IFB is the input for the module output overcurrent protection and current limit features. A voltage proportional to the powertrain output current must be applied to IFB in order for overcurrent protection to operate properly. If the IFB voltage exceeds the IFB pin's overcurrent protection threshold, the powertrain will stop switching. If the IFB voltage falls below the overcurrent protection threshold within t_{BLANK} time, then the powertrain will immediately resume switching. Otherwise a fault is detected. The current limit threshold for the IFB pin is set lower than the protection threshold. When the IFB pin average voltage exceeds the current limit threshold, an internal integrator will activate a clamp amplifier which overrides the modulator input maximum level. This causes the powertrain to maintain a constant output current. The bandwidth of this current limit integrator is significantly slower than that of the CONTROL NODE input. Therefore this current limit cannot be used in lieu of properly compensating the (external) control loop to avoid exceeding maximum current or power ratings for the device. (PRM48AH480x200A00 Datasheet at 28.)
wherein, when an output current exceeds a first predetermined current, the first controller determines that the resonant converter generates the over-current, and restricts the output current of the resonant converter in the first predetermined current or in	The VTM48EF060T040A00 and PRM48AH480X200A00 provide wherein, when an output current exceeds a first predetermined current, the first controller determines that the resonant converter generates the over-current, and restricts the output current of the resonant converter in the first predetermined current or in a second predetermined current higher than the first predetermined current. The PRM48AH480X200A00 determines when the output current exceeds a measured current limit in Remote Sense mode.

a second predetermined current higher than the first predetermined current.	IFB: Current Feedback (Remote Sense Operation) In Remote Sense Operation, IFB is the input for the module output overcurrent protection and current limit features. A voltage proportional to the powertrain output current must be applied to IFB in order for overcurrent protection to operate properly. If the IFB voltage exceeds the IFB pin's overcurrent protection threshold, the powertrain will stop switching. If the IFB voltage falls below the overcurrent protection threshold within t_{BLANK} time, then the powertrain will immediately resume switching. Otherwise a fault is detected. The current limit threshold for the IFB pin is set lower than the protection threshold. When the IFB pin average voltage exceeds the current limit threshold, an internal integrator will activate a clamp amplifier which overrides the modulator input maximum level. This causes the powertrain to maintain a constant output current. The bandwidth of this current limit integrator is significantly slower than that of the CONTROL NODE input. Therefore this current limit cannot be used in lieu of properly compensating the (external) control loop to avoid exceeding maximum current or power ratings for the device. (PRM48AH480x200A00 Datasheet at 28.) Finally, as stated immediately above, the VTM48EF060T040A00 uses a Sine Amplitude Converter, which moves energy from the input to the output, where the VTM's output is proportionally related to its input (where the VTM's input comes from the PRM) (VTM48Ex060y040A00 at 12-13). Given the configuration, the overcurrent in the PRM—thusly—equates to an overcurrent in the VTM, and control of the PRM overcurrent controls the VTM overcurrent. <table><tr><td rowspan="2">Output Current Limit</td><td rowspan="2">I_{LIMIT}</td><td colspan="2">$V_{IN} = 48.0\text{ V}$, $V_{OUT} = 48.0\text{ V}$, $T_{INT} = 25^{\circ}\text{C}$, constant current limit after supervisory limit detection time t_{UM_SUPV}</td><td>4.6</td><td>5.2</td><td>5.8</td><td>A</td></tr><tr><td colspan="2">Over line, load, trim and temperature</td><td>4.2</td><td></td><td>6.3</td><td>A</td></tr></table> (PRM48AH480x200A00 Datasheet at 6.)	Output Current Limit	I_{LIMIT}	$V_{IN} = 48.0\text{ V}$, $V_{OUT} = 48.0\text{ V}$, $T_{INT} = 25^{\circ}\text{C}$, constant current limit after supervisory limit detection time t_{UM_SUPV}		4.6	5.2	5.8	A	Over line, load, trim and temperature		4.2		6.3	A
Output Current Limit	I_{LIMIT}			$V_{IN} = 48.0\text{ V}$, $V_{OUT} = 48.0\text{ V}$, $T_{INT} = 25^{\circ}\text{C}$, constant current limit after supervisory limit detection time t_{UM_SUPV}		4.6	5.2	5.8	A						
		Over line, load, trim and temperature		4.2		6.3	A								