Amended Claims:

1. Switching cell for a phase leg of a power converter, the switching cell comprising:

a power switch for conducting a current for driving a load;

a series connection comprising an auxiliary switch and a cell capacitor coupled in series, the series connection coupled in parallel with the power switch; and

a cell inductor coupled to a coupling of the power switch and the series connection,

wherein the switching cell has a commutation loop to conduct a commutation current arising from turn-off of the power switch, the loop comprising:

a first bypass circuit for blocking current flow in a direction and coupled in parallel with the power switch to conduct a said commutation current in an other, opposite direction;

a second bypass circuit for blocking current flow in a direction and coupled in parallel with the auxiliary switch to conduct a said commutation current in an other, opposite direction; and

the cell capacitor, and

wherein the switching cell comprises at least one control input line for receiving a control signal, the at least one control input line configured to drive a control terminal of the power switch and a control terminal of the auxiliary switch

wherein the switching cell comprises a said control terminal drive input line configured to simultaneously turn one of the power switch and the auxiliary switch ON and the other of the power switch and the auxiliary switch OFF.

2. Switching cell of claim 1, wherein at least one of the first and second bypass circuits comprises an extrinsic diode.

3. Switching cell of claim 1 or 2, wherein the first and second bypass circuits comprise at least one of an intrinsic diode of the power switch as the first bypass circuit and an intrinsic diode of the auxiliary switch as the second bypass circuit.

4. Switching cell of any one of claims 1 to 3, wherein one of the power switch and auxiliary switch comprises an n-type device and the other of the power switch and the auxiliary switch comprises a p-type device, the switching cell configured to control switching of the power switch and the auxiliary switch according to a control signal in common.

5. A plurality of switching cells of any one of claims 1 to 4, comprising at least one series connection of said switching cells, wherein each said switching cell of the at least one series connection is coupled to an adjacent said switching cell by a said cell inductor.

6. Plurality of switching cells of claim 5, comprising at least one switching cell of any one of claims 1 to 5 coupled in parallel with a said switching cell of a said series connection of switching cells.

7. Plurality of switching cells of claim 5 or 6, wherein at least one said power switch comprises a wide bandgap semiconductor device.

8. Plurality of switching cells of any of claims 5 to 7, wherein an auxiliary switch of at least one said switching cell is physically smaller than the power switch of the switching cell.

9. Plurality of switching cells of any one of claims 5 to 8, wherein an auxiliary switch of at least one said switching cell has lower power rating than the power switch of the switching cell.

10. Plurality of switching cells of any of claims 5 to 9, wherein at least one said power switch comprises an IGBT, MOSFET, HEMT, BJT, JFET, GTO or GCT.

11. Plurality of switching cells of any of claims 5 to 9, wherein each of at least some of the switching cells of the plurality comprises one of a vertical FET device and lateral HEMT as the power switch.

12. Plurality of switching cells of any one of claims 5 to 11, wherein at least one said switching cell has a resistor in parallel with the cell inductor of the switching cell.

13. Plurality of switching cells of any one of claims 5 to 14, comprising at least one drive circuit, the drive circuit to drive at least one of a control terminal of the power switch and a control terminal of the auxiliary switch of a said switching cell, the drive circuit configured to draw power from the switching cell.

14. Phase arm for a power converter, the phase arm comprising a plurality of switching cells of any of claims 5 to 13.

15. A power converter phase leg having arms coupled together to provide an output signal for driving a load, at least one said arm according to claim 14.

16. Power converter for driving a load, the power converter comprising at least one power converter phase leg of claim 15, each said phase leg having an output line for driving a phase input of a said load, the power converter further comprising a link capacitor, wherein the at least one phase leg and the link capacitor are coupled between a first power rail and a second power rail.

17. Power converter according to claim 16, wherein the power converter is a multilevel converter.

18. Method of making a power converter, comprising obtaining a power converter comprising a phase arm having at least one IGBT and replacing a said phase arm with a phase arm according to claim 14.

19. Method of making a power converter, comprising obtaining a power converter comprising a phase arm having a turn-on snubber and at least one GTO module, and replacing the turn-on snubber and at least one GTO module with a phase arm according to claim 14.

20. Method of controlling a power converter to drive a load, the power converter having a phase leg coupled between two power rails, the phase leg comprising two

arms each having a plurality of switching cells, the arms coupled at an output of the converter, wherein each said switching cell comprises:

a power switch for conducting a current for driving a load;

a series connection comprising an auxiliary switch and a cell capacitor coupled in series, the series connection coupled in parallel with the power switch; and

a cell inductor coupled to a coupling of the power switch and the series connection,

wherein the switching cell has a commutation loop to conduct a commutation current arising from turn-off of the power switch, the loop comprising:

a first bypass circuit for blocking current flow in a direction and coupled in parallel with the power switch to conduct a said commutation current in an other, opposite direction;

a second bypass circuit for blocking current flow in a direction and coupled in parallel with the auxiliary switch to conduct a said commutation current in an other, opposite direction; and

the cell capacitor, and

the method comprising at least one step of switching a first number of switching cells of one said arm ON and a second number of the switching cells of the other arm OFF to advance a voltage profile at the output of the converter and maintain a voltage across the phase leg, a said switching of a switching cell ON comprising turning the power switch of the switching cell ON and the auxiliary switch of the switching cell OFF, wherein the first and second numbers are one or more.

21. Method of claim 20, wherein at least two said switching cells of an arm are coupled in parallel, the method comprising switching said parallel cells at different times.

22. Method of any claim 20 or 21, wherein each said arm comprises an array having a number NS of rows and a number NP of columns of said switching cells, wherein the numbers NS and NP are one or more, wherein each said column comprises a series connection of said switching cells coupled between a said power rail and the converter output, wherein the method comprises less than or equal to NSxNP steps to generate the said voltage profile.

23. Method of any one of claims 20 to 22, wherein the voltage profile varies between a voltage of one said power rail and a voltage of the other said power rail.

24. Method of any one of claims 20 to 23, comprising determining a switching firing pattern of the switching cells according to a dv/dt value of a voltage profile transition.