



Expertise Applied | Answers Delivered

Residential Solar Solutions



Renewable Energy



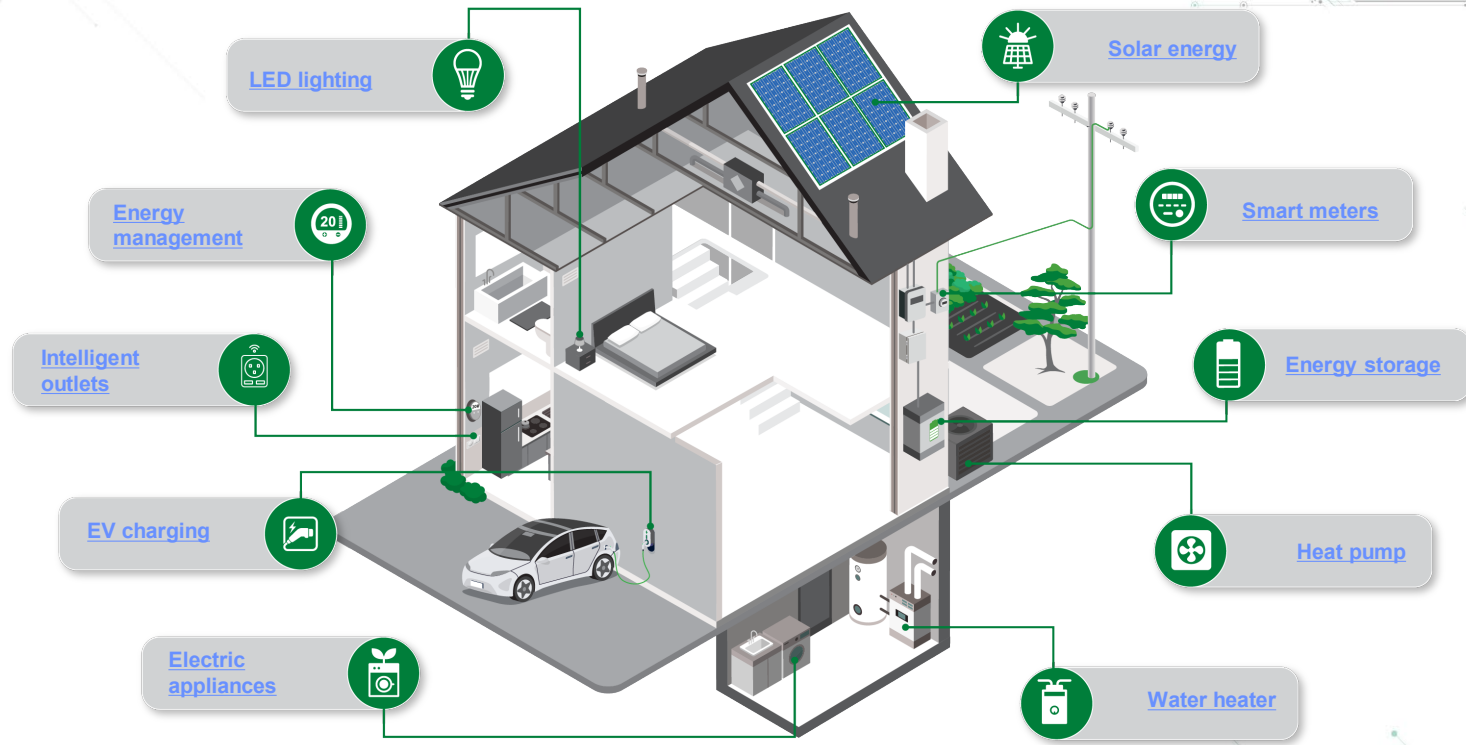
Building Solutions

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Solar power and energy storage is the key to “net-zero” homes and residential buildings



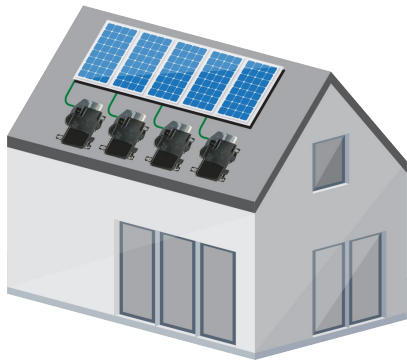
Click the application name listed below for more information



Littelfuse technologies are helping drive decarbonization in clean energy systems.

Types of solar inverters for residential applications

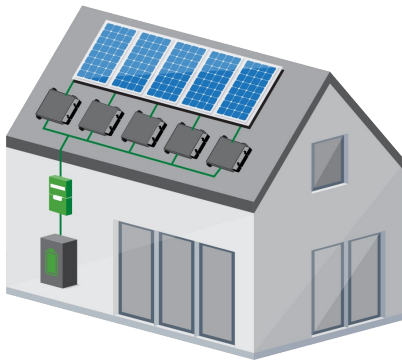
Micro inverter



Features

- Panel-level DC to AC conversion
- Single phase; rated up to 300 W range; output voltage 110–230 V
- Power output of each panel is optimized independently
- Easily expandable systems to meet future needs
- Battery back-up AC coupled

Power optimizer + string inverter



Features

- Centralized DC to AC conversion
- Rated up to 300 W range; output voltage 50 VDC (per panel)
- Power output of each panel is optimized independently
- Provide both system- and panel-level monitoring
- Battery back-up can be high-voltage DC coupled

String inverter



Features

- Centralized DC to AC conversion
- Rated 1 kW–10 kW; output voltage: single-phase 230 V and three-phase 400 V
- Easier system maintenance with no electronics on the roof
- Known for their availability and reliability
- Battery back-up can be high-voltage DC coupled

Residential solar inverter market is growing at CAGR of 11%

Market trends and drivers

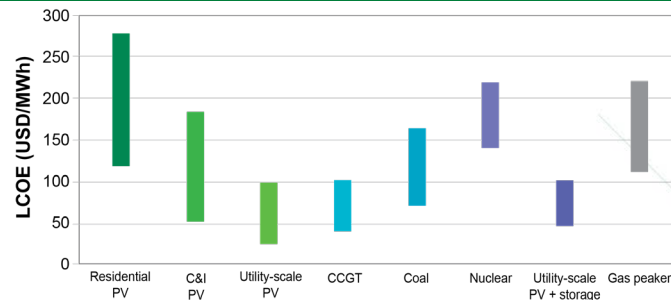
Both the rooftop and utility-scale segments experienced strong growth in 2022. The energy crisis played a role, and the reaction from citizens was immediate: the rooftop market increased by 50% in 2022, with installations reaching 118 GW from 79 GW the year before.

The impressive growth of the rooftop segment was seen across the world in 2022 - Brazil added an additional 5.3 GW, Italy 127%, Spain 105%, and China 51.1 GW (54% of it's 2022 installations.)

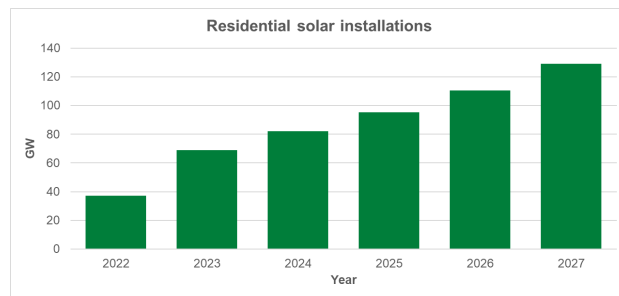
In 2023, the rooftop segment is expected to further increase to 159 GW, a 35% growth from 2022. We expect a slight slowdown in the growth rate of the rooftop segment in the following years, as energy prices are expected to return to lower levels. The annual installed rooftop capacity is forecasted to increase to 183 GW in 2024 and up to 268 GW in 2027.

Solar panels are becoming integral building materials, and smart cities are embracing small-scale distributed solar panels combined with storage and digital solutions.

Solar electricity generation cost in comparison with conventional power sources 2023



Residential solar inverter is fastest growing segment in the solar PV market



Source:

1. [Residential Solar PV Inverter Market](#)
2. [PV Inverter Market Size](#)

3. [Iea.org](#)
4. [Global Market Outlook 2023-2027](#)

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Littelfuse recommended solutions for residential solar inverters

1

Input protection

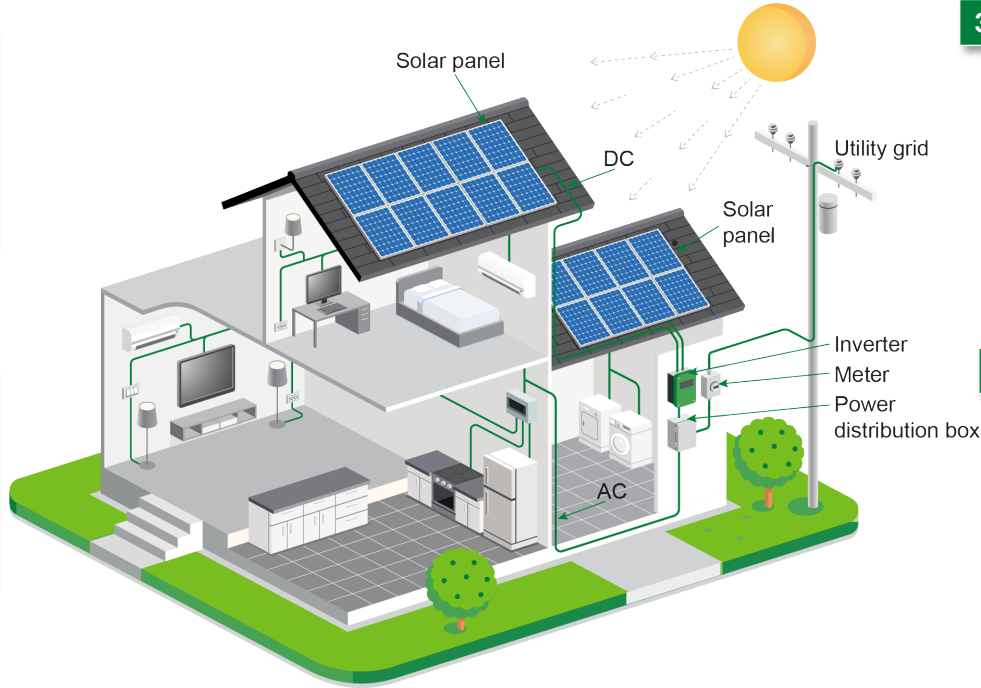
Fuse, MOV,
GDT, NTC



2

Power conversion

MOSFET, IGBT, Power Module,
Schottky Diode, Gate Driver



3

Output protection

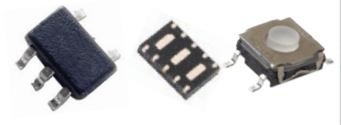
Fuse, Fuseholder,
MOV, SPD, TVS Diode



4

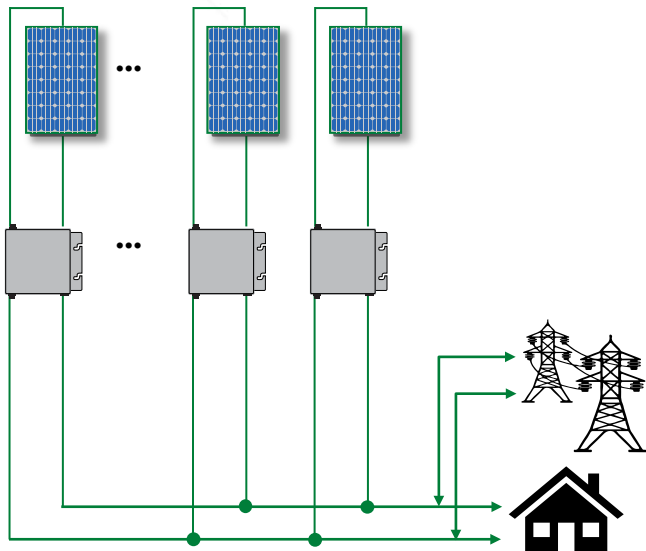
Communication and user interface

TVS Diode Array, MLV, Switch

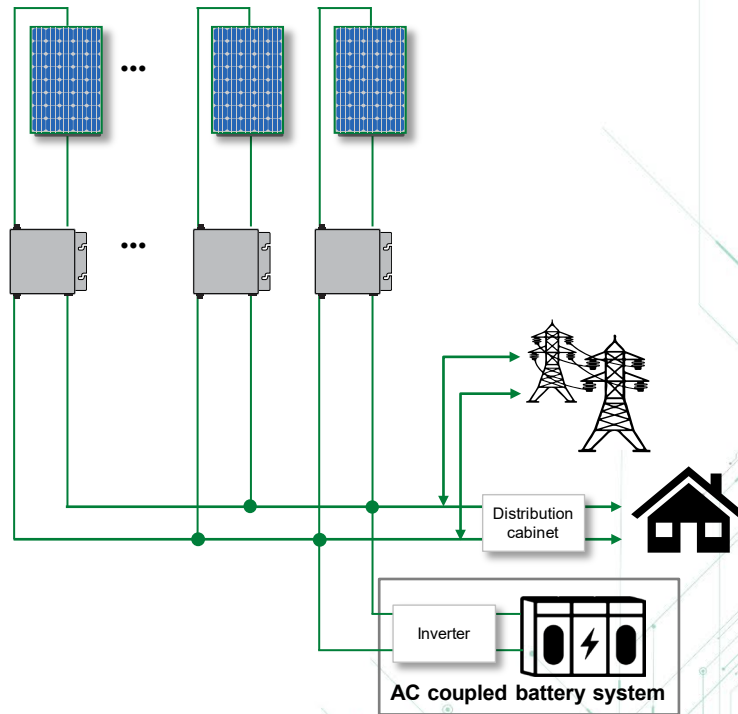


Microinverter topologies

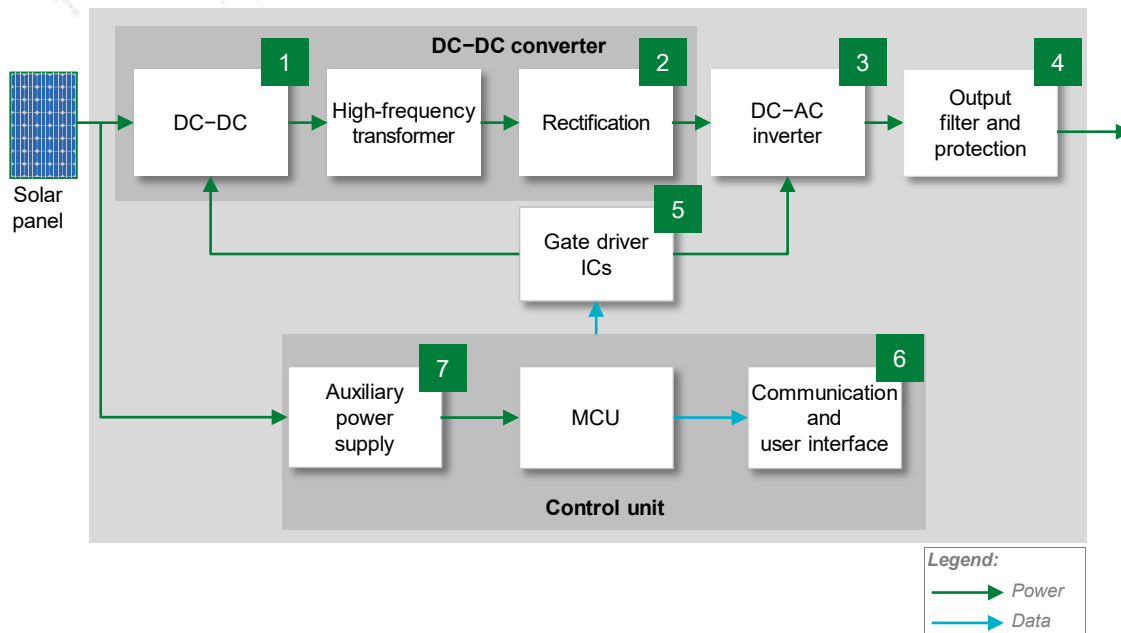
Microinverter



Microinverter + Energy Storage System



Microinverter block diagram



	Technology	Product series
1	MOSFET	Trench Gate Gen2, X4-Class
	TVS Diode	SMCJ, SMDJ
	NTC	RA, RB, KR
2	SiC Schottky Diode	650V Diodes
3	MOSFET or IGBT	Ultra-junction X2, X4-Class
	TVS Diode	650 V Trench SMBJ
4	MOV	TMOV, UltraMOV, LA
	GDT	CG3/CG4
	Fuse	215, 369
5	Gate Driver	IXD 6xxSI
	TVS Diode	SMBJ
6	TVS Diode Array	SP712, SP2555NUTG
7	MOSFET	650V X2-Class, 650V X3-Class

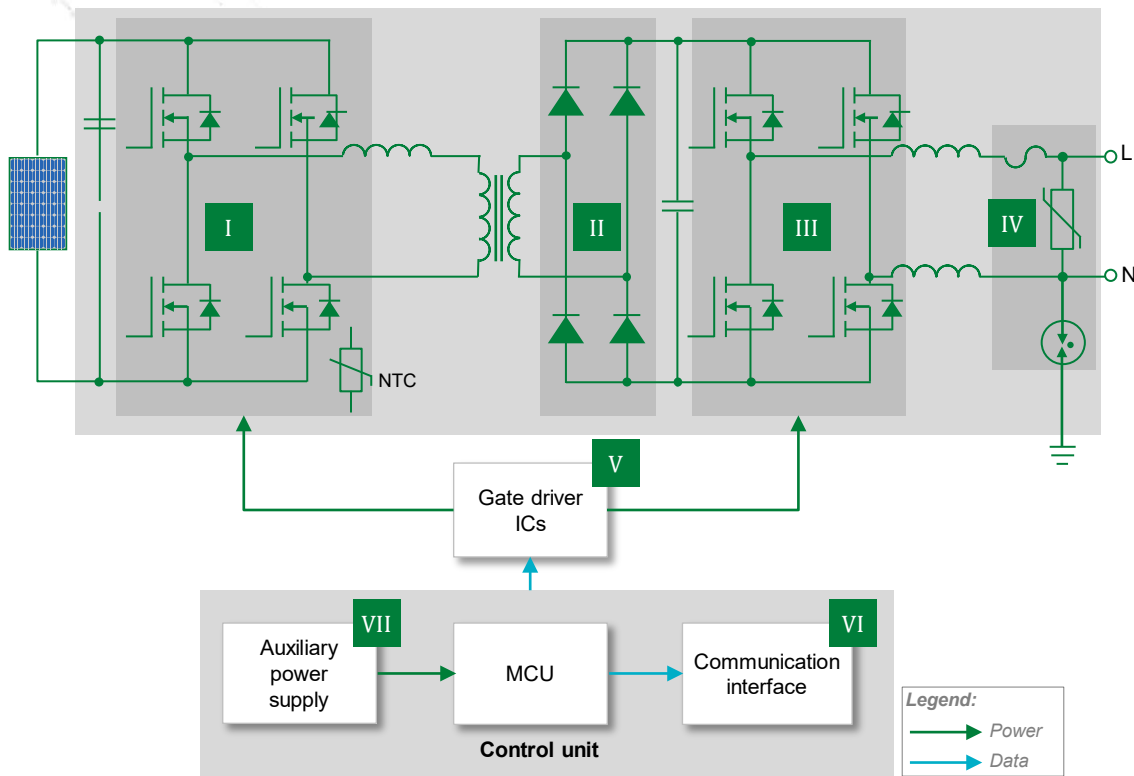
Recommended Littelfuse products for microinverters

	Technology	Function in application	Series	Benefits	Features
1	MOSFET	High-frequency switching	Trench Gate Gen2, X4-Class	High power density; easy to mount; space-saving	Ultra low on-resistance R_{DS} ; high current handling capability; fast body diode
	TVS Diode	Protects MOSFET from voltage transients	SMCJ, SMDJ	Enables compact design; improves system reliability	3000 W P_{PPM} capability; low profile package
	NTC	High temperature detection due to high sunlight, power component failure, etc.	RA, RB, KR	Provides safe operation of PV panels; smaller footprint saves space	Surface mountable; small form factor
2	SiC Schottky Diodes	Used for rectification	650V Diodes	Reduces switching losses; increases system efficiency, reliability, and thermal management	High surge capability; negligible reverse recovery current; $T_J = 175^\circ\text{C}$
3	MOSFET or IGBT	Convert DC voltage from PV panel to AC line voltage	Ultra-junction X2, X4-Class 650 V Trench	High efficiency; high power density; easy to mount Reduced thermal resistance; low energy losses; fast switching	Ultra low on-resistance $R_{DS(ON)}$ and gate charge Q_g ; low package inductance; dv/dt ruggedness Low V_{sat} , low E_{on}/E_{off} , high surge current capability; positive thermal co-efficient of $V_{CE(sat)}$
	TVS Diode	Protects IGBTs from transient overload event	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
4	MOV	Protects power unit from voltage transients and lightning	TMOV, UltraMOV, LA	Reduces customer qualification time by complying with third-party safety standards	High energy absorption capability: 40–530 J (2 ms)
	GDT	Protects from voltage transients and lightning	CG3/CG4	Small form-factor allows compact system design; enables product to comply with IEC/UL standards	High energy absorption capability; small form-factor; low leakage current
	Fuse	Protects from overcurrent events	215, 369	Reduces customer qualification time by complying with third-party safety standards	High breaking capacity; meets the IEC 60127-2
5	Gate Driver	Controls the switching MOSFETs	IXD 6xxSI	Dual outputs provide space-efficient design; high immunity to latch-up; rise/fall times <10 ns	Tight tolerance; small form factor; fast thermal response
	TVS Diode	Protects gate driver from transient overload event	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
6	TVS Diode Array	Protects data lines from ESD/EFT and surge events	SP712, SP2555NUTG	Minimizes signal distortion; reduces voltage over-shoot, and simplified PCB design	Low capacitance of 2.5 pF; low leakage current of 0.1 μA ; small form factor
7	MOSFET	High-frequency switching	650V X2-Class, 650V X3-Class	High power density; easy to mount; space-saving	Ultra-low on-resistance R_{DS} ; high current handling capability; fast body diode



Click the product series in the table below for more information

Typical schematic of a microinverter

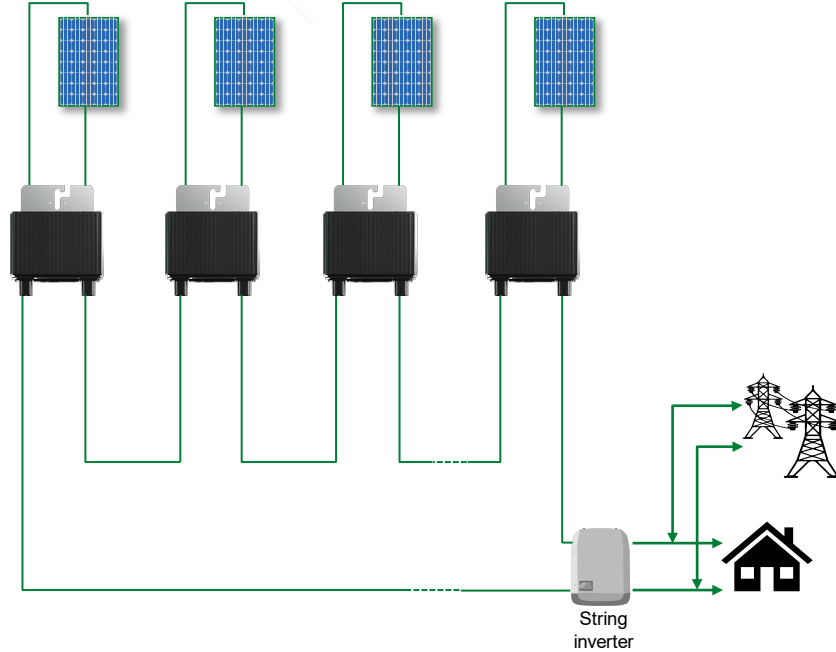


	Technology	Product series
I	MOSFET	Trench Gate Gen2, X4-Class
	TVS Diode	SMCJ, SMDJ
	NTC	RA, RB, KR
II	SiC Schottky Diode	650V Diodes
III	MOSFET or IGBT	Ultra-junction X2, X4-Class
	TVS Diode	650 V Trench
IV	MOV	TMOV, UltraMOV, LA
	GDT	CG3/CG4
	Fuse	215, 369
V	Gate Driver	IXD_6xxSI
	TVS Diode	SMBJ
VI	TVS Diode Array	SP712 SP2555NUTG
VII	MOSFET	650V X2-Class, 650V X3-Class

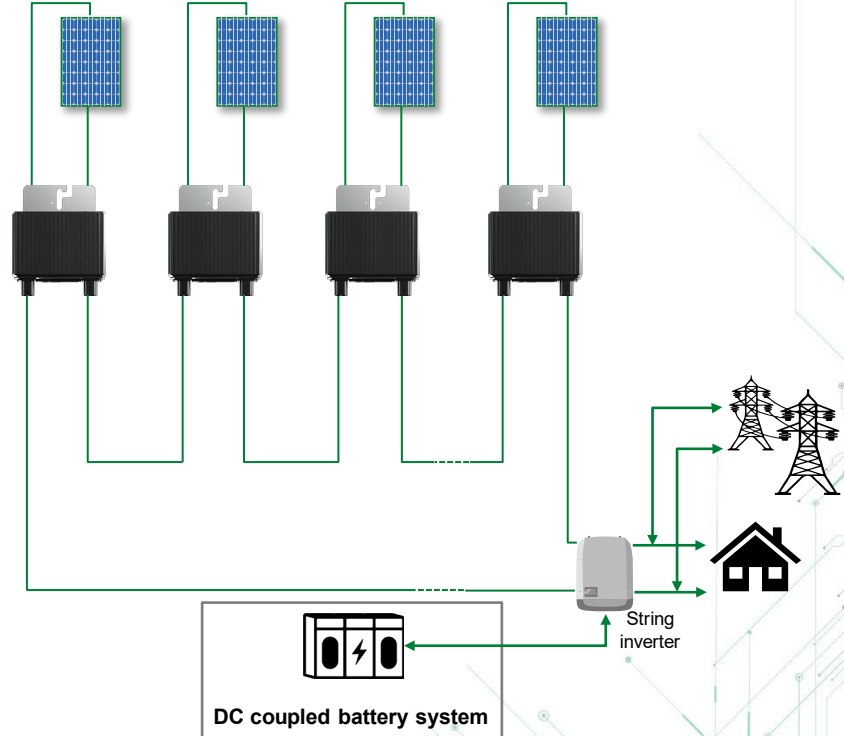
Power optimizer topologies

(Power optimizers may not be included in all string inverter-based PV systems)

Power optimizers



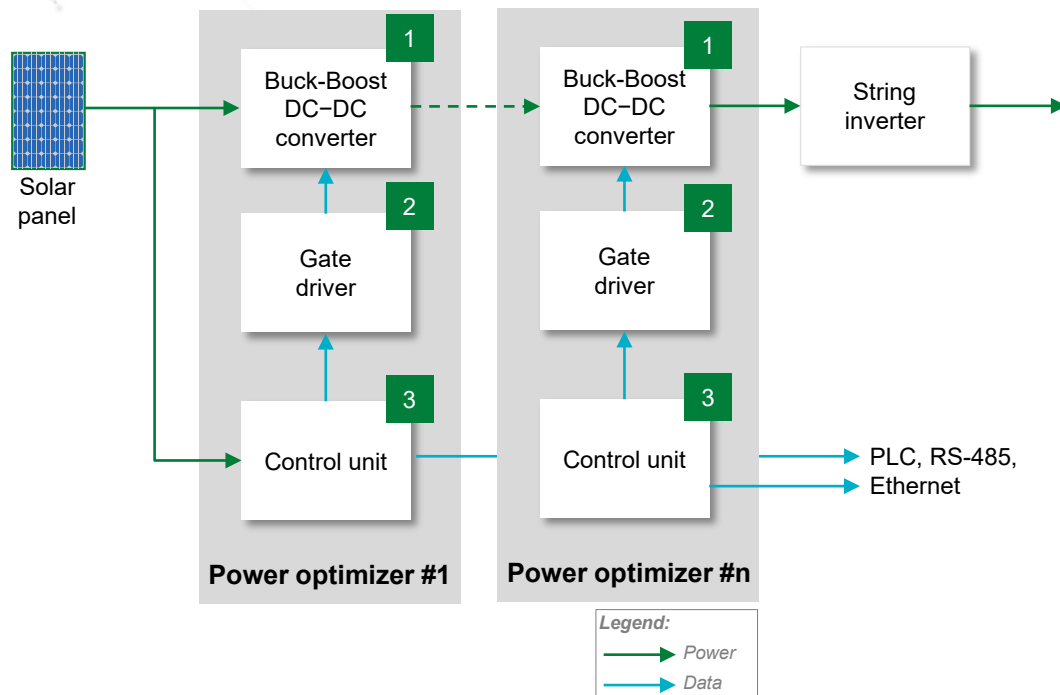
Power optimizers + DC coupled Energy Storage System (ESS)





Click the product series in the table below for more information

Power optimizer block diagram



	Technology	Product series
1	MOSFET	Trench Gate Gen2, X4-Class
	TVS Diode	SMCJ , SMDJ , 1.5SMC
	NTC	RA , RB , KR
2	Gate Driver	IXD_6xxSI
	TVS Diode	SMBJ
3	TVS Diode Array	SP712 , SP2555NUTG , SM712 , SP3130

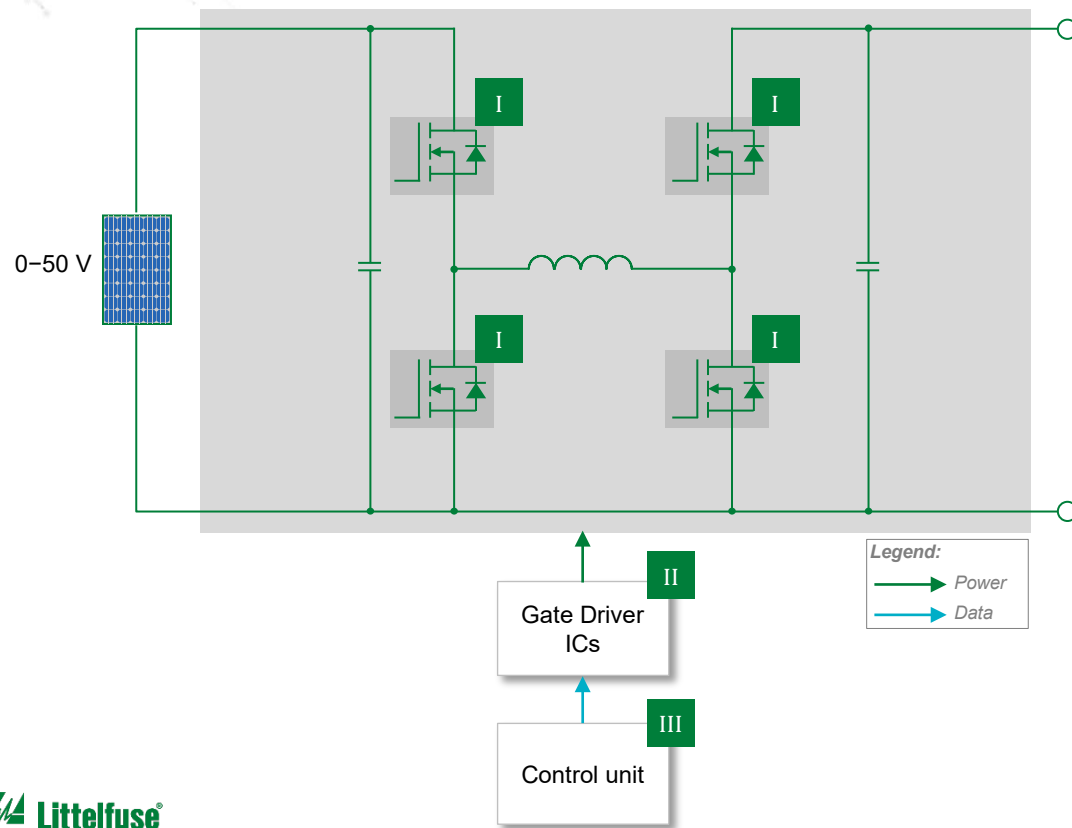
Recommended Littelfuse products for power optimizers

	Technology	Function in application	Series	Benefits	Features
1	MOSFET	High-frequency switching	Trench Gate Gen2, X4-Class	High power density; easy to mount; space-saving	Ultra-low on-resistance RDS; high current handling capability; fast body diode
	TVS Diode	Protects MOSFET from voltage transients	SMCJ , SMDJ , 1.5SMC	Enables compact design; improves system reliability	3000 W P _{PPM} capability; low-profile package
	NTC	High temperature detection due to high sunlight, power component failure, etc.	RA , RB , KR	Provides safer operation of PV panels; smaller footprint saves space	Surface mountable; small form factor
2	Gate Driver	Controls the switching MOSFETs	IXD_6xxSI	Dual outputs provide space-efficient design; high immunity to latch-up; rise/fall times <10 ns	Tight tolerance; small form factor; fast thermal response
	TVS Diode	Protects gate driver from transient overload event	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
3	TVS Diode Array	Protects against ESD and EFT	SP712 , SP2555NUTG , SM712 , SP3130	Smaller form factor and multi-line protection enables ease of design	Low capacitance of 1.0 pF per I/O



Click the product series in the table below for more information

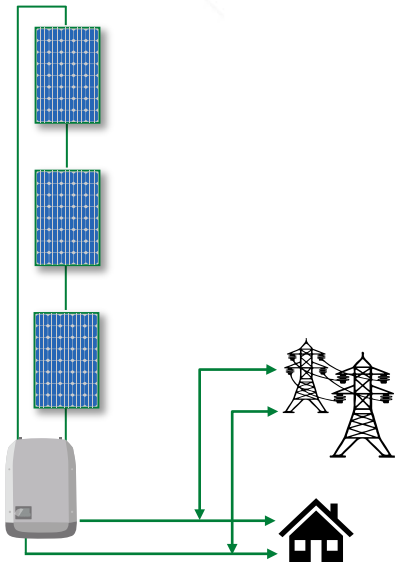
Typical schematic of a power optimizer



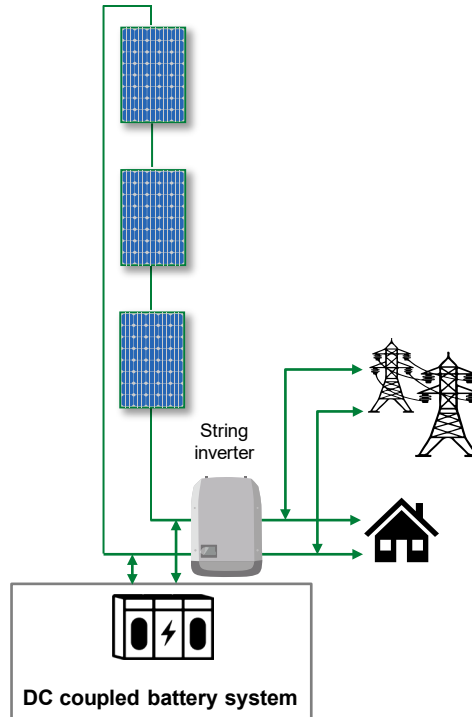
	Technology	Product series
I	MOSFET	Trench Gate Gen2, X4-Class
	TVS Diode	SMCJ , SMDJ , 1.5SMC
	NTC	RA , RB , KR
II	Gate Driver	IXD_6xxSI
	TVS Diode	SMBJ
III	TVS Diode Array	SP712 , SP2555NUTG , SM712 , SP3130

String inverter topologies

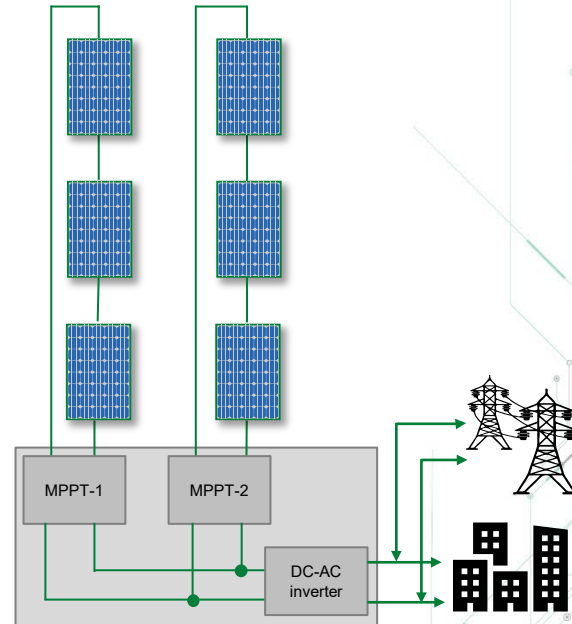
String inverter



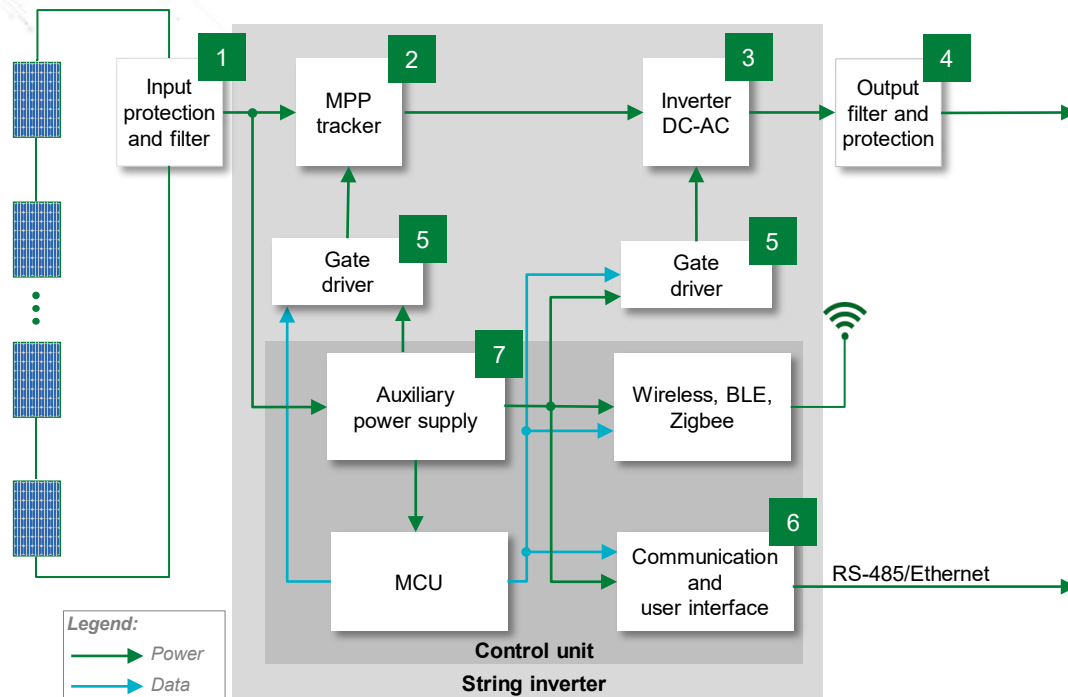
String inverter + DC coupled ESS



Multi-string inverter



String inverter block diagram

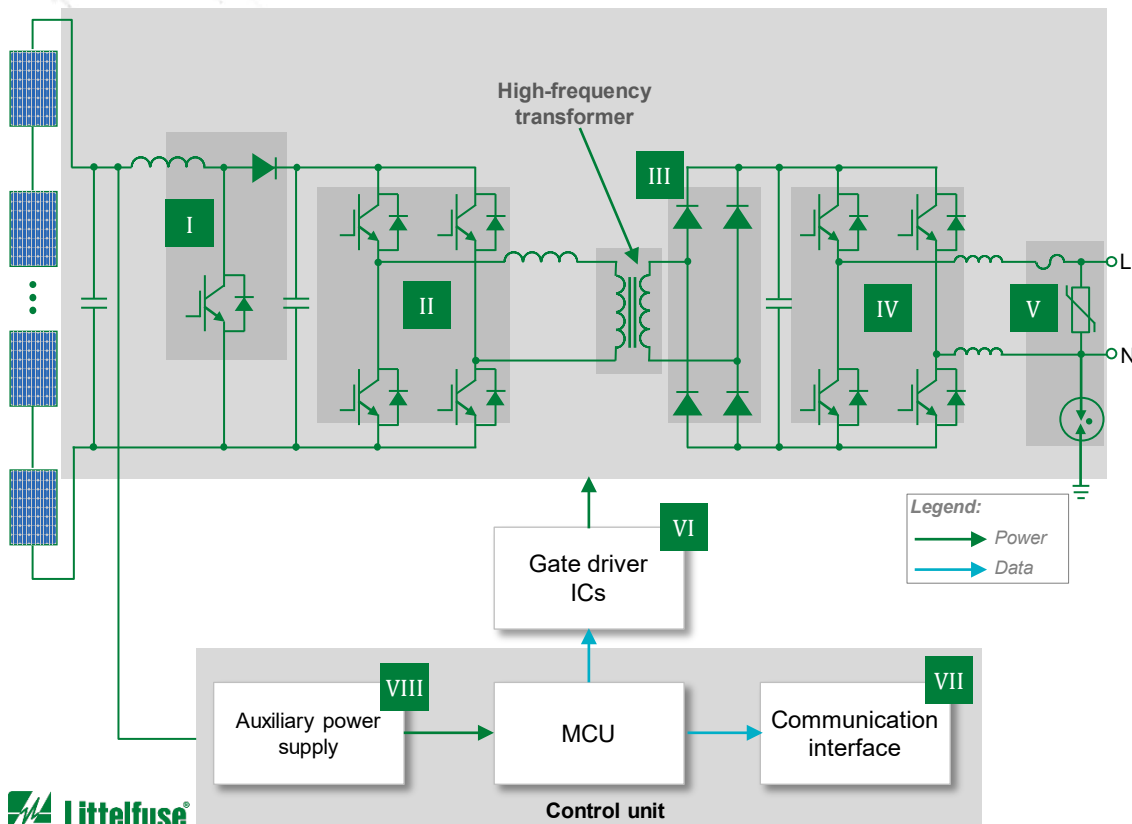


	Technology	Product series
1	MOV	UltraMOV , LA , SM20
	MOSFET	650V X2-Class , 650V X3-Class
2	TVS Diode	SMCJ , SMDJ
	SiC Schottky Diode	650V Diodes
	NTC	RA , RB , KR
3	MOSFET or IGBT	650V X2-Class , 650V X3-Class , 650 V Trench
	TVS Diode	SMBJ
	MOV	TMOV , UltraMOV , LA
4	GDT	CG3/CG4
	Fuse	Class J , Class RK5 , KLKD
	Gate Driver	IXD_6xxSI , IX4351NE
5	TVS Diode	SMBJ
	TVS Diode Array	SP712 , SM712 , SP2555NUTG
	Switch	7000 , KSC , ES , KSR
6	MOSFET	650V X2-Class , 650V X3-Class

Recommended Littelfuse products for string inverters

	Technology	Function in application	Series	Benefits	Features
1	MOV	Protects from voltage transients and lightning surges	UltraMOV, LA, SM20	Reduces customer qualification time by complying with third-party safety standards	High energy absorption capability: 40–530 J (2 ms)
2	MOSFET	High-frequency switching	650V X2-Class , 650V X3-Class	High power density; easy to mount; space-saving	Ultra-low on-resistance RDS; high current handling capability; fast body diode
	TVS Diode	Protects MOSFET from voltage transients	SMCJ , SMDJ	Enables compact design; improves system reliability	3000 W P _{PPM} capability; low profile package
	SiC Schottky Diode	Used for rectification	650V Diodes	Reduces switching losses; increases system efficiency, reliability, and thermal management	High surge capability; negligible reverse recovery current; TJ = 175 °C
	NTC	High temperature detection due to high sunlight, power component failure, etc.	RA , RB , KR	Provides safe operation of PV panels; smaller footprint saves space	Surface mountable; small form factor
3	MOSFET or IGBT	Converts DC voltage from PV panel to AC line voltage	650V X2-Class , 650V X3-Class	High efficiency; high power density; easy to mount	Ultra low on-resistance R _{DS(ON)} and gate charge Qg; low package inductance; dv/dt ruggedness
			650 V Trench	Reduces thermal resistance; low energy losses; fast switching	Low V _{sat} , low E _{on} /E _{off} , high surge current capability; positive thermal coefficient of V _{CE(sat)}
	TVS Diode	Protects IGBTs from transient overload event	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
4	MOV	Protects power lines from voltage transients and lightning surges	TMOV , UltraMOV, LA	Reduces customer qualification time by complying with third-party safety standards	High energy absorption capability: 40–530 J (2 ms)
	GDT	Protects from voltage transients and lightning	CG3 / CG4	Small form-factor allows for compact system design; enables product to comply with IEC/UL standards	High energy absorption capability; small form-factor; low leakage current
	Fuse	Protects from overcurrent events	Class J , Class RK5 , KLKD	Reduces customer qualification time by complying with third-party safety standards	High breaking capacity; meets the IEC 60127-2
5	Gate Driver	Controls the switching MOSFETs	IXD_6xxSI , IX4351NE	Dual outputs provide space-efficient design; high immunity to latch-up; rise/fall times less than 10 ns	Tight tolerance; small form factor; fast thermal response
	TVS Diode	Protects gate driver from transient overload event	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
6	TVS Diode Array	Protects data lines from ESD/EFT and surge events	SP712 , SM712 SP2555NUTG	Minimizes signal distortion; reduces voltage over-shoot; simplified PCB design	Low capacitance of 2.5 pF; low leakage current of 0.1 µA; small form factor
	Switch	On/Off/Reset switch	7000 , KSC , ES , KSR	Micro miniature; long life; low voltage; low power and performance; low voltage leakage	IP 67 sealing; Au plating; operation temps to 125 °C; low contact resistance
7	MOSFET	Power conversion	650V X2-Class , 650V X3-Class	High power density; easy to mount; space-saving	Ultra-low on-resistance RDS; high current handling capability; fast body diode

String inverter using high-frequency transformer

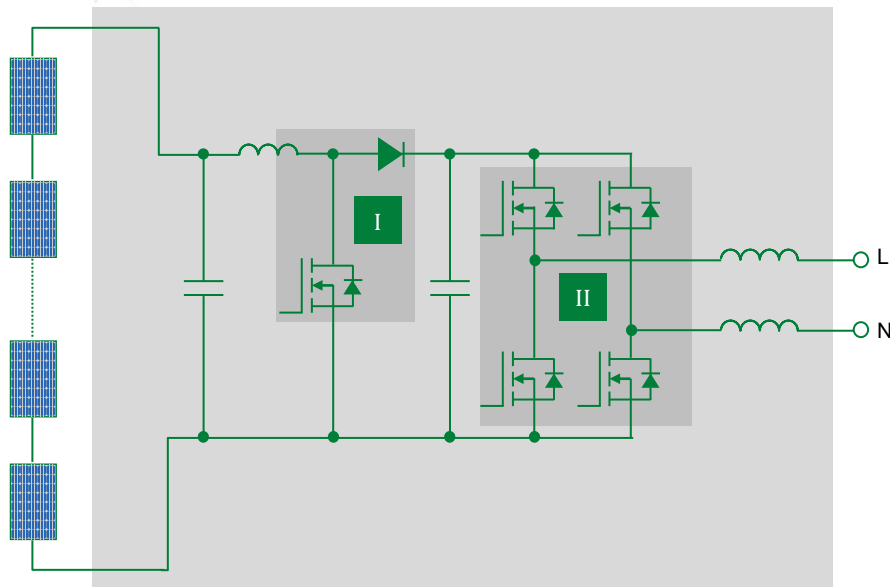


	Technology	Product series
I	MOSFET	X2-Class , X3-Class
	SiC Schottky Diode	650V Diodes
	NTC	RA , RB , KR
II	MOSFET or IGBT	X2-Class , X3-Class 650 V Trench
III	SiC Schottky Diode	650V Diodes
IV	MOSFET or IGBT	X2-Class , X3-Class 650 V Trench
V	MOV	TMOV , UltraMOV , LA
	GDT	CG3/CG4
VI	Fuse	Class J , Class RK5 , KLKD
	Gate Driver	IXD_6xxSI , IX4351NE
VII	TVS Diode	SMBJ
	TVS Diode Array	SP3130 , SP712 , SM712 SP2555NUTG
VIII	Switch	7000 , KSC , ES , KSR
	MOSFET	X2-Class , X3-Class

Transformerless topology for string inverters—Full bridge + MPPT (Boost)



Click the product series in the table below for more information

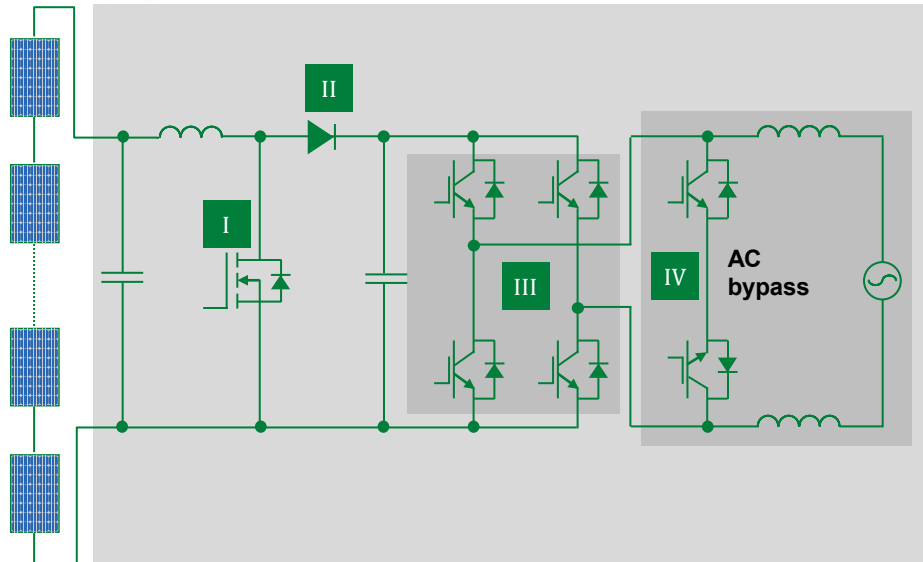


	Technology	Product series
I	MOSFET	650V X2-Class , 650V X3-Class
	SiC Schottky Diode	650V Diodes
	NTC	RA , RB , KR
II	MOSFET or IGBT	650V X2-Class , 650V X3-Class
		650 V Trench

Transformerless topology for string inverters—HERIC Topology + Boost (MPPT)



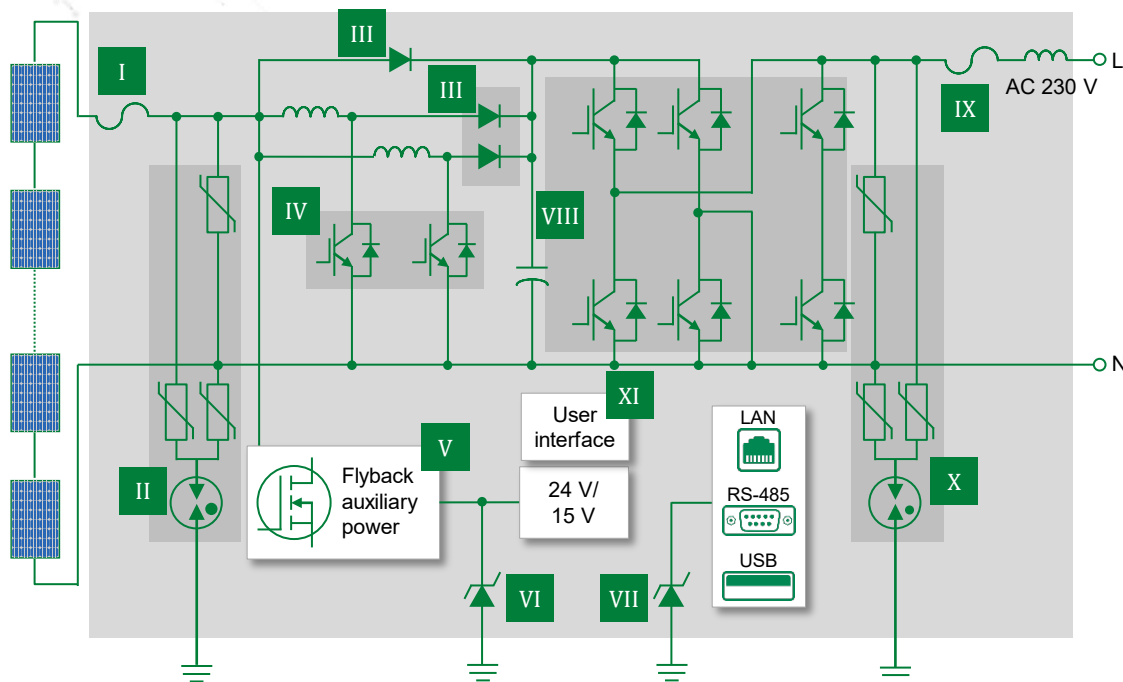
Click the product series in the table below for more information



	Technology	Product series
I	MOSFET or IGBT	650V X2-Class, 650V X3-Class
		650 V Trench
II	SiC Schottky Diode	650V Diodes
III	IGBT	650 V Trench
IV	IGBT	650 V Trench

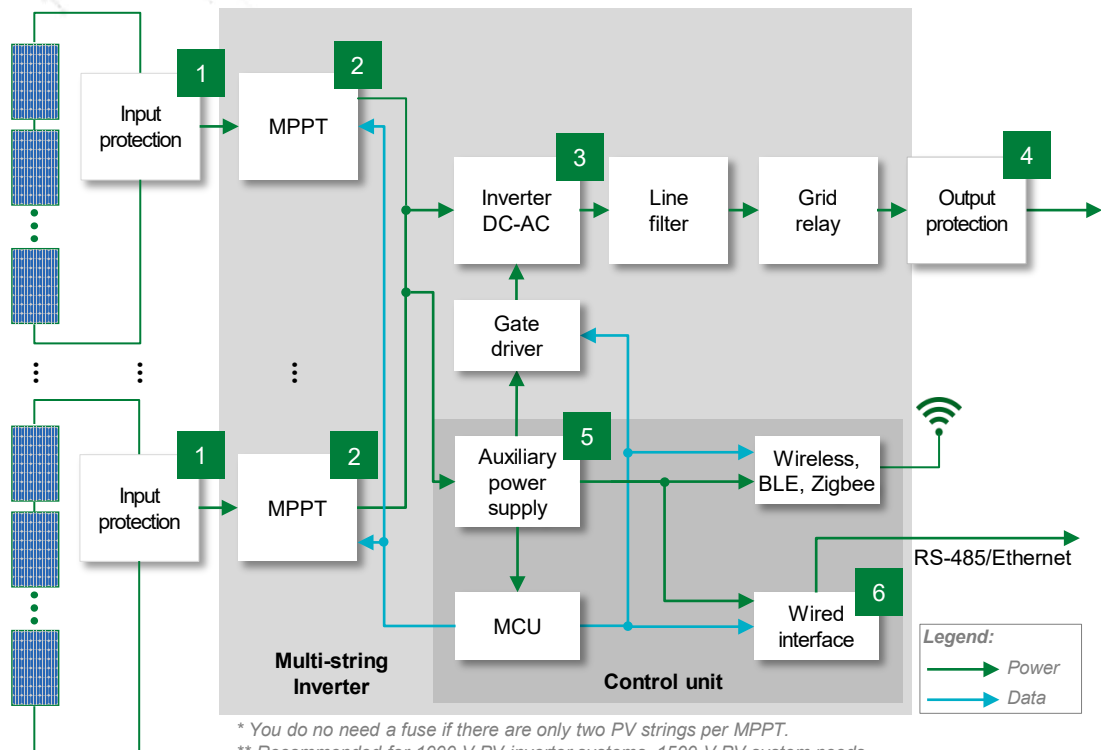
Transformerless topology for string inverters—(<10 kW, MPPT + HERIC)

 Click the product series in the table below for more information



	Technology	Product series
I	Fuse	SPFJ/SPF/SPFI
	Fuse Block	LPHV
II	MOV	Xtreme
	GDT	CG3/CG4
III	Rectifier Diode	DSP/DSI/DLA
	Fast Recovery Diode	DSEI/DSEP
IV	IGBT	XPT
	Gate Driver	IXDN602SIATR
V	SiC MOSFET	LSIC1MO170E0750
	Si MOSFET	High Voltage Series, 1200/1500V Polar/HV
	IGBT	IXG*N170(A)
	Gate Driver	IX4427
VI	TVS Diode Array	SM15-02HTG , SM712
VII	TVS Diode Array	SMBJ18CA , SMBJ30CA
VIII	IGBT	XPT
	Gate Driver	IXDN602SIATR
IX	Fuse	215/324
X	MOV	M3/Xtreme
	GDT	CG/CG2
XI	Switch	7000 , KSC , ES , KSR

Multi-string inverter block diagram



* You do not need a fuse if there are only two PV strings per MPPT.

** Recommended for 1000 V PV inverter systems. 1500 V PV system needs 1700 V MOSFET or IGBT.

	Technology	Product series
1	Fuse*	SPF , SPFI , SPXV , SPXI
	SPD	SPD2 PV
2	SiC MOSFET or MOSFET**	LSIC1MO120E0120 High Voltage Series
	SiC Diode**	1200 V Diode
3	IGBT Module	MIXA , MIXG
	Fuse	L75QS
4	TVS Diode	SMBJ
	Fuse	Class T , Class J
	MOV or SPD	UltraMOV , LA , SM7 SPD type 2
5	GDT	CG3/CG4
	SiC MOSFET or MOSFET	LSIC1MO170E1000 , High Voltage Series , 1200/1500V Polar/HV
	Gate Driver	IX4351NE
6	TVS Diode	SMF
	TVS Diode Array	SP712 , SM712 SP2555NUTG
	Switch	7000 , KSC , ES , KSR

Recommended Littelfuse products for multi-string inverters



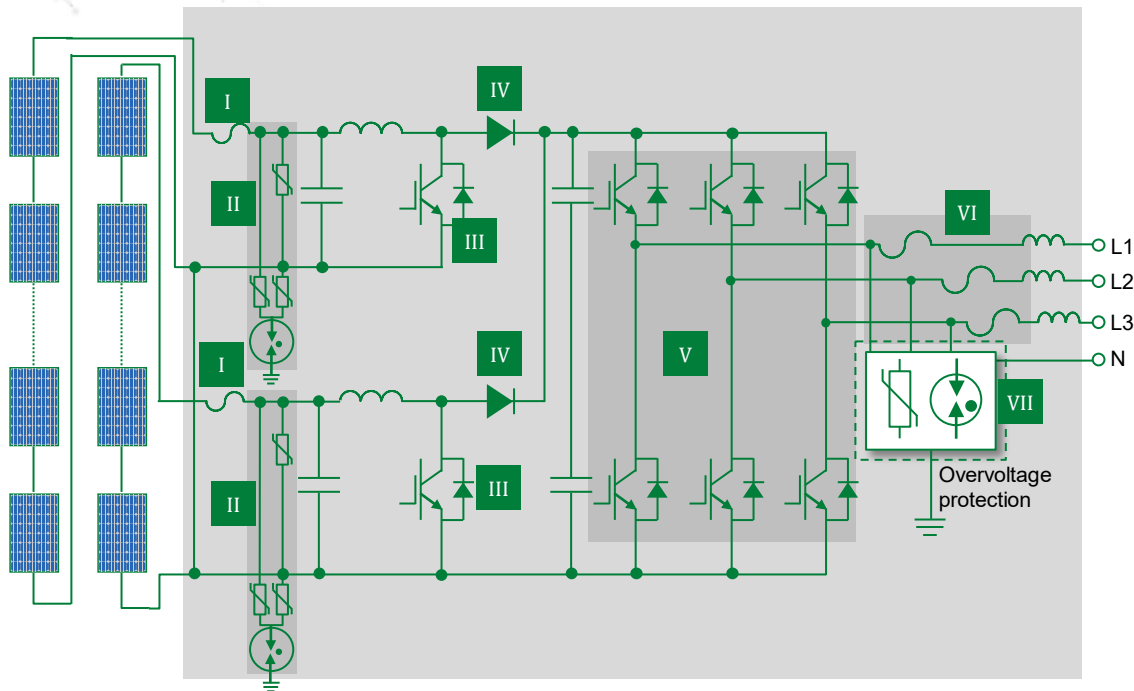
Click the product series in the table below for more information

	Technology	Function in application	Series	Benefits	Features
1	Fuse	Protects PV modules and conductors from reverse overcurrent conditions	SPE , SPFI , SPXV , SPXI	Prevents power generation losses due to nuisance tripping from changes in temperature	Meets UL and IEC standards; 1000 VDC, 1–30 A ratings available; max interrupt rating 50 kA
	SPD	Provides equipment protection from transient overvoltage events	SPD2 PV	Withstands high-energy transients to prevent disruption, downtime, and degradation of equipment	Available in 1100 and 1500 Vdc; compact footprint; capability to clamp and withstand transients
2	SiC MOSFET or MOSFET*	Boost converter for high-frequency switching	LSIC1MO120E0120	Optimized for high-frequency applications	Ultra-low output capacitance and on-resistance
	SiC Diode		High Voltage Series	High power density; easy to mount; space-saving	Fast switching time; ultra-low $R_{DS(on)}$
3	IGBT Module	Switches power supplies	1200 V Diode	Reduces switching losses; increases system efficiency, reliability, and thermal management	High surge capability; negligible reverse recovery current; T_J 175 °C
	Fuse	Protects semiconductor devices in inverter	MIXA , MIXG	Allows low power consumption and fast response	Rugged design with thin wafer technology; low gate charge; low EMI and competitive low $V_{CE(SAT)}$
	TVS Diode	Protects IGBTs from transient overload event	L75QS	Lower I^2t performance allows for quick response to protect devices from higher heat energy	750 VDC, 35–800 A; interrupt rating DC: 50 kA
4	Fuse	Overcurrent or short circuit protection	SMBJ	Enables compact design; improves system reliability	600 W peak pulse power capability; excellent clamping capability; small footprint
	MOV or SPD	Protects from power fluctuations or surges	Class T , Class J	Reduces damage to equipment caused by heating and magnetic effects of short-circuit currents	Extremely current-limiting; small footprint; 200 kA interrupting rating
	GDT	Protects from voltage transients and lightning	UltraMOV , LA , SM7 SPD type 2	Withstands high-energy transients to prevent disruption, downtime, degradation of equipment	20 kA nominal interrupting rating and 50 kA maximum interrupting rating
5	SiC MOSFET or MOSFET	High-frequency switching	CG3/CG4	Small form-factor allows for compact system design; enables product to comply with IEC/UL standards	High energy absorption capability; small form-factor; low leakage current
	Gate Driver	To drive SiC MOSFETs and high-power IGBTs	LSIC1MO170E1000 , High Voltage Series , 1200/1500V Polar/HV	Optimized for high frequency; high-power density; easy to mount; space-saving	extremely low gate charge and output capacitance; ultra low on-resistance; fast switching time
	TVS Diode	Protects SiC MOSFET from voltage transients	IX4351NE	Eliminates the need for separate negative supply; quick turn-on and turn-off of power SiC MOSFET	Separate 9 A peak source and sink outputs; internal negative charge pump regulator improved dV/dt immunity and faster turn-off
6	TVS Diode Array	Protection of data lines from ESD/EFT and surge events	SMF	Enables compact design; improves system reliability	200 W peak pulse power capability; excellent clamping capability; low profile
	Switch	On/Off/Reset switch	SP712 , SM712 , SP2555NUTG	Minimizes signal distortion, reduces voltage overshoot, and provides a simplified PCB design	Low capacitance of 2.5 pF; low leakage current of 0.1 μ A; small form factor
			7000 , KSC , ES , KSR	Micro miniature; long life; and low voltage; low power and performance; low voltage leakage	IP 67 Sealing; Au plating; operation temps to 125 °C; low contact resistance

Multistring inverters for commercial buildings—multiple boost + 2 Level

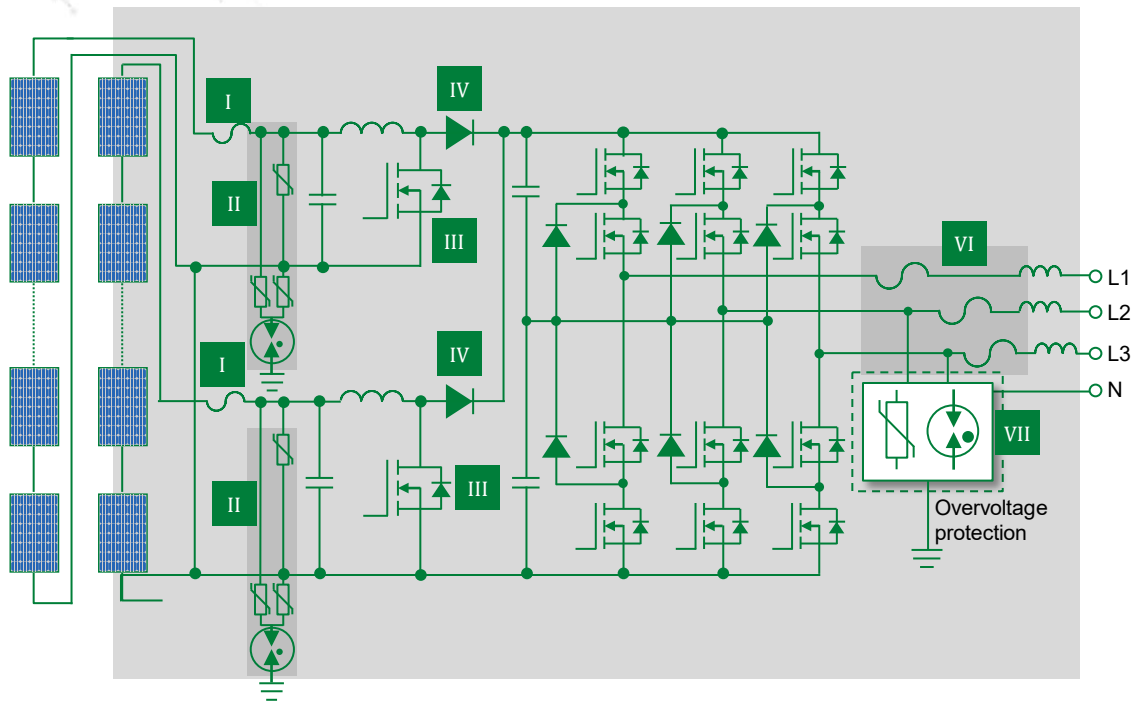


Click the product series in the table below for more information



	Technology	Product series
I	Fuse	SPF, SPFI
	Fuse Block	LPHV
II	MOV	UltraMOV/Xtreme
	GDT	CG2/CG3
	SPD	SPD2 PV
III	IGBT	XPT
	Gate Driver	IXDN602SIATR
IV	Rectifier Diode	DSP/DSI/DLA
	Fast Recovery Diode	DSEI/DSEP
V	IGBT	IXG*N170(A)
	Gate Driver	IXDN604SIA
VI	Fuse	Class T/ Class J
	MOV	UltraMOV/Xtreme
VII	GDT	CG2/CG3
	SPD	SPD2 PV

Multistring inverters for commercial buildings—multiple boost + 3 Level



	Technology	Product series
I	Fuse	SPF, SPFI
	Fuse Block	LPHV
II	MOV	UltraMOV/Xtreme
	GDT	CG2/CG3
	SPD	SPD2 PV
III	IGBT	XPT
	MOSFET	X Class
IV	Gate Driver	IXDN602SIATR
	Rectifier Diode	DSP/DSI/DLA
V	Fast Recovery Diode	DSEI/DSEP
	SiC MOSFET	LSIC1MQ170E0750
	HV IGBT	IXG*N170(A)
VI	Gate Driver	IXDN604SIA
	Fuse	Class T/ Class J
VII	MOV	UltraMOV/Xtreme
	GDT	CG2/CG3
	SPD	SPD2 PV

Safety standards for residential solar installations

PV system	Standard	Title	Market
	IEC 60364-1	Low-Voltage Electrical Installations - Part 1: Fundamental principles, assessment of general characteristics, definitions	Global
	IEC 60364-7-712	Low-Voltage Electrical Installations - Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems	Global
	NFPA 70	National Electrical Code - Article 690 Solar Photovoltaic (PV) Systems	US

Safety standards for residential solar installations

PV inverters	Standard	Title	OC	OV	Breaker & Switch	Relay	Power Semi	Market
	IEC 61683	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency					●	Global
	IEC/UL 62109-1	Safety of Power Converters for Use in Photovoltaic Power Systems - Part 1: General requirements	●	●	●	●	●	Global and US
	IEC/UL 62109-2	Safety of Power Converters for Use in Photovoltaic Power Systems - Part 2: Particular requirements for inverters.	●	●	●	●	●	Global and US
	IEC 60269-6	Low-Voltage Fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems.	●					Global
	IEC 61643-31	Low-voltage surge protective devices – Part 31: Requirements and test methods for SPDs for photovoltaic installations.		●				Global
	UL 1741	Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources.	●	●	●	●	●	US
	UL 1449	Surge Protective Devices		●				US
	UL 4248-19	Fuseholders - Part 19: Photovoltaic	●					US
	UL 1699B	Photovoltaic (PV) DC Arc-Fault Circuit Protection				●		US
	UL 489B	Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures for Use with Photovoltaic (PV) Systems.			●			US
	IEEE 1547	IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces.						Global
	IEEE 1547.1	IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Energy Resources with Electric Power Systems and Associated Interfaces.						Global

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