



LEADING THE ADVANCEMENT OF POWER CONVERSION

» Selection Guide **2017-2018**



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Isolated DC-DC Converters

Features

- High efficiency with synchronous rectifiers
- 8:1, 4:1 and 2:1 Input
- Output power from 1W to 800W
- Over-voltage, over-current, short-circuit, and over temperature protections
- Adjustable output voltage
- Fixed frequency operation
- Current sharing on selected products
- Wide operating temperature down to -55°C and up to +100°C

Packaging

- Industry standard (DOSA) footprint
- Open frame, baseplate, encapsulated, conformal coating, SMD, DIP, chassis mounting, DIN-rail

Safety

- UL 60950-1 recognized
- Basic and reinforced insulation

General Isolated DC-DC Converters

9-75VDC Input

Brick Converters (36W~150W)

Series	Power	Efficiency	Output Voltage					Isolation	Package
			3.3V	5V	12V	15V	28V		
S(Y)RS5 ^①	36W	Up to 90.5%	8A ^②	6A	3A ^②			1500VDC	Sixteenth brick
Q(Y)PS5 ^①	100W 150W	Up to 93%			7A 10A	8A		2250VDC	Quarter brick



9-36VDC Input

Brick Converters (15W~280W)

Series	Power	Efficiency	Output Voltage								Isolation	Package	
			3.3V	5V	6V	8V	12V	15V	28V	48V			56V
M(Y)RS1 ^①	15W 28W	Up to 85%	7A	3A 5A		3A	2A		1A		1500VDC	Thirty-second brick	
S(Y)RS1 ^① SCS1	30W 45W 60W	Up to 92%	10A 15A	8A 10A 12A	5A	3A 4A 7A	3A 5A	2A 3A 4A			1500VDC	Sixteenth brick	
E(Y)RS1 ^①	75W 100W 140W	Up to 92%		20A 25A ^②			8A 10A	5A 8A	3A 5A		2250VDC	Eighth brick	
Q(Y)PS1 ^①	100W 150W 200W	Up to 93%	30A	30A 40A			12A			3A	2A	2250VDC	Quarter brick
H(Y)PS1 ^①	280W	Up to 91.5%		50A			20A		8A			2250VDC	Half brick

① Y stands for encapsulated converters

② To be released

9-36VDC Input

Low Power Converters (3W~20W)

Series	Power	Efficiency	Output Voltage										Isolation	Package		
			3.3V	5V	9V	12V	15V	24V	±5V	±9V	±12V	±15V			±24V	
LMS1-STC	3W	Up to 83%		600mA		250mA	200mA	125mA							1500VDC	SMD
LMS1-ZPC LMB1-ZPC	5W 6W	Up to 88%	1.5A	1.2A	667mA	500mA	400mA	250mA	±600mA	±333mA	±250mA	±200mA	±125mA	1500VDC	DIP	
LMS1-YMC LMB1-YMC	5W 6W 8W 10W	Up to 88%	1.5A 2.4A	1.2A 2A	667mA 1.111A	500mA 833mA	400mA 667mA	250mA 416mA	±600mA ±1A	±250mA	±200mA	±125mA	1500VDC	DIP		
LMS1-PPC LMB1-PPC	5W 6W	Up to 88%	1.5A	1.2A	667mA	500mA	400mA	250mA	±600mA		±250mA	±200mA	3000VDC	DIP		
LMS1-LPC LMB1-LPC	8W 10W 17W 20W	Up to 89%	2.4A 5A	2A 4A	1.111A 2.222A	833mA 1.667A	667mA 1.334A	416mA 833mA	±1A		±416mA	±333mA	3000VDC	DIP		
LMS1-LDC LMB1-LDC	17W 20W	Up to 90%	5A	4A	2.222A	1.667A	1.333A	834mA	±2A	±1.111A	±834mA	±667mA	1500VDC	DIP		

9-18VDC Input

Low Power Converters (6W)

Series	Power	Efficiency	Output Voltage		Isolation	Package
			±5V	±12V		
LMB0-YMC	6W	Up to 85%	±600mA	±250mA	1500VDC	DIP



18-75VDC Input

Brick Converters (20W~360W)

Series	Power	Efficiency	Output Voltage							Isolation	Package
			3.3V	5V	8V	12V	15V	28V	48V		
LRS3-W	20W	Up to 88%	7A	4A		1.5A ^②				2250VDC	1x1
SCS3-W S(Y)RS3-W ^①	40W 50W 60W	Up to 92.5%	10A 15A	8A 10A 12A	4A 5A 7A	3A 5A 6A	3A 4A			1500VDC	Sixteenth brick
E(Y)RS3-W ^①	50W 75W 100W 140W	Up to 92.5%	20A 30A 35A	9A 14A 20A		6A 9A 10A		4A 5A		2250VDC	Eighth brick
Q(Y)PS3-W ^①	100W 150W 220W	Up to 93.5%	35A 60A	25A 40A	25A	11A 17A 19A	13A	5A	2A	2250VDC	Quarter brick
H(Y)PS3-W ^①	360W	Up to 90.5%				30A				2250VDC	Half brick

① Y stands for encapsulated converters

② To be released



Low Power Converters (5W~20W)

Series	Power	Efficiency	Output Voltage										Isolation	Package
			3.3V	5V	9V	12V	15V	24V	±5V	±12V	±15V	±24V		
LMS3-ZPC LMB3-ZPC	5W 6W	Up to 88%	1.5A	1.2A	667mA	500mA	400mA	250mA	±600mA	±250mA	±200mA		1500VDC	DIP
LMS3-YMC LMB3-YMC	5W 6W 8W 10W	Up to 88%	1.5A 2.4A	1.2A 2A		500mA 833mA	400mA 667mA	250mA 416mA	±600mA ±1A	±250mA ±416mA	±200mA ±333mA	±208mA	1500VDC	DIP
LMS3-PPC	5W 6W	Up to 88%	1.5A	1.2A		500mA	400mA	250mA					3000VDC	DIP
LMS3-LPC LMB3-LPC	8W 10W 17W 20W	Up to 89%	2.4A 5A	2A 4A		833mA 1.667A	667mA 1.334A	416mA 833mA	±1A	±416mA	±333mA		3000VDC	DIP
LMS3-LDC LMB3-LDC	17W 20W	Up to 90%	5A	4A		1.667A	1.333A	834mA	±2A	±834mA	±667mA		1500VDC	DIP

18-36VDC Input

Brick Converters (20W~600W)

Series	Power	Efficiency	Output Voltage											Isolation	Package	
			3.3V	5V	6V	8V	12V	15V	28V	48V	56V					
M(Y)RS2 ^①	30W 45W	Up to 88%	10A	8A	5A	5A	3A	1A 3A	1.5A						1500VDC	Thirty-second brick
S(Y)RS2 ^①	20W 30W 50W 65W 100W	Up to 92%	10A 15A 25A	8A 12A 17A	3A 6A 10A 12A		3A	3A				2.5A			1500VDC	Sixteenth brick
E(Y)RS2 ^①	60W 75W 100W 150W	Up to 92.5%	20A 35A	10A 15A 25A			5A 7A	3A		2A				2250VDC	Eighth brick	
Q(Y)BC2 ^① Q(Y)PS2 ^①	100W 125W 150W 200W 300W 360W	Up to 92.5%	60A	25A 40A 50A	33A	25A	10A 17A 20A 25A 30A		5A 7A	4A				2250VDC	Quarter brick	
H(Y)PS2 ^①	300W 400W 450W 500W 600W	Up to 93%		80A		50A		10A						2250VDC	Half brick	

① Y stands for encapsulated converters

② To be released

Low Power Converters (6W~20W)

Series	Power	Efficiency	Output Voltage										Isolation	Package			
			3.3V	5V	9V	12V	15V	24V	±5V	±9V	±12V	±15V					
LMB2-YMC	6W	Up to 87%											±600mA	±250mA	±200mA	1500VDC	DIP
LMS2-LDC LMB2-LDC	15W 17W 20W	Up to 90%	5A	3A 4A		1.25A 1.667A	1A 1.333A	625mA 834mA		±2A	±1.111A	±834mA	±667mA			1500VDC	DIP



36-75VDC Input

Brick Converters (25W~800W)



Series	Power	Efficiency	Output Voltage														Isolation	Package	
			1.0V	1.2V	1.5V	1.8V	2.5V	3.3V	5V	8V	9.6V	12V	15V	28V	48V				
MRS4	25W 40W	Up to 89%										5A 8A		3A				1500VDC	Thirty-second brick
SRS4 SCS4	50W 75W 100W	Up to 92.5%	35A	25A 35A	25A 30A	25A 30A	20A 30A	10A 15A 18A 25A 30A	8A 12A 13A	8A		3A 5A		2.5A			1500VDC	Sixteenth brick	
EBE4 EBC4 ERS4	40W 50W 75W 100W 140W 200W 250W 360W	Up to 95%	30A 40A	20A 30A 40A	20A 30A 40A	30A 40A	20A 25A 30A 35A	15A 20A 25A 30A 40A 60A	10A 15A 20A			5A 7A 10A	5A		5A 3A		2250VDC	Eighth brick	
QBE4 QBC4 QDS4 QPS4	100W 200W 300W 400W 450W 500W 700W	Up to 95.5%	70A 100A	100A	65A 100A	65A	60A	55A	40A	30A		17A 28A 33A	13A		2A 2.5A		2250VDC	Quarter brick	
HPS4	300W 400W 500W	Up to 94%							80A							30A		2250VDC	Half brick
FPS4	700W 800W	Up to 93.5%															25A 28A	2250VDC	Full brick

Low Power Converters (15W~20W)

Series	Power	Efficiency	Output Voltage									Isolation	Package			
			3.3V	5V	9V	12V	15V	24V	±5V	±12V	±15V					
LMS4-LDC LMB4-LDC	15W 17W 20W	Up to 90%	5A	3A 4A		1.25A 1.667A	1A 1.333A	625mA 834mA		±2A	±834mA	±667mA			1500VDC	DIP

40-60VDC Input

Brick Converters (500W~800W)

Series	Power	Efficiency	Output Voltage	Isolation	Package
			12V		
EBE4	500W	Up to 95.2%	40A	2250VDC	Eighth brick
QBE4	800W	Up to 96.8%	67A	2250VDC	Quarter brick



Railway DC-DC Converters (Compliant to EN50155)



34-160VDC Input

Series	Power	Efficiency	Output Voltage				Isolation	Package
			5V	12V	24V	48V		
QYR6A	60W 120W	Up to 91%	10A 24A	5A 10A	2A 5A	1A 2.5A	3000VAC	Quarter brick
HYR6A	240W 250W	Up to 91%	50A ^②	20A ^②	10A ^②	5A ^②	3000VAC	Half brick

66-160VDC Input

Series	Power	Efficiency	Output Voltage				Isolation	Package
			5V	12V	24V	48V		
QYR7A	75W 150W	Up to 90%	15A ^② 25A ^②	6A ^② 12A ^②	3A ^② 6A ^②	1.5A ^② 3A ^②	3000VAC	Quarter brick
HYR7A	240W 250W	Up to 91%	50A ^②	20A ^②	10A ^②	5A ^②	3000VAC	Half brick
FYR7A	300W	Up to 92%		25A ^②	13A ^②	6.25A	3000VAC	Full brick

High Voltage DC-DC Converters

180-400VDC Input

Series	Power	Efficiency	Output Voltage					Isolation	Package
			5V	12V	28V	48V	56V		
HYUEA	300W 400W	Up to 92%	60A ^②	25A	11A ^②	7A ^②	6A ^②	4250VDC	Half brick
FYUEA	500W 800W	Up to 94%	100A	67A ^②	28A	17A ^②	14A	4250VDC	Full brick

300-500VDC Input

Series	Power	Efficiency	Output Voltage			Isolation	Package
			5V	8.5V	28V		
HYVEC	300W	Up to 91.5%	60A			2250VDC	Half brick
FYVEC	800W	Up to 93%	78A	28A		2250VDC	Full brick



② To be released

Non-Isolated DC-DC Converters

Features

- High efficiency up to 96%
- Multiple input voltage ranges
- Over-voltage, over-current, short-circuit, and over temperature protections
- Output voltage tracking on selected codes
- High current up to 120A
- Load sharing on selected codes

Packaging

- DOSA standard footprint
- SMT, SIP and Through-hole packages
- Open frame, baseplate and encapsulated

Safety

- UL 60950-1 recognized



DOSA Point-of-Load Converters

Input Voltage (V)	Series	Output Voltage (V)	Output Current (A)	Efficiency	Package	Size (in)
2.5-5.5	NAT0	0.75-3.63	12-20	Up to 96%	SIP	2.00 x 0.50 x 0.25
	NAS0	0.75-3.63	12-20		SMT	1.30 x 0.53 x 0.25
	NBS0	0.75-3.63	8		SMT	1.10 x 0.45 x 0.25
4.5-14	NKS1	0.59-5.5	6-12	Up to 93.3%	SMT	0.48 x 0.48 x 0.35
7.0-14	NRT1	1.2-6	10	Up to 95%	SIP	0.42 x 0.66 x 0.38
8.0-14	NHT1	0.5-1.6	100	Up to 89%	SMT, SIP, Horizontal TH	2.05 x 1.10 x 0.64
			120			2.70 x 1.20 x 0.64
8.0-16	NCT1	0.8-5.5	45-60	Up to 93%	SMT, SIP, Horizontal TH	2.00 x 0.68 x 0.39
8.5-16	NBS1	0.75-5.5	8	Up to 91%	SMT	1.10 x 0.45 x 0.25
8.5-18	NAT1 NAS1 NES1	0.75-5.5	12-20	Up to 96%	SIP SMT SMT	2.00 x 0.50 x 0.25
			12-20			1.30 x 0.53 x 0.25
			16-30			1.30 x 0.53 x 0.38
9-36	NAT2 NAS2 NBS2	3-6	10	Up to 88%	SIP SMT SMT	2.00 x 0.50 x 0.25
			10			1.30 x 0.53 x 0.25
			3.5			1.10 x 0.45 x 0.25
18-36	NAT3 NAS3 NBS3	5-15.5	9	Up to 94%	SIP SMT SMT	2.00 x 0.50 x 0.25
			9			1.30 x 0.53 x 0.25
			3.5			1.10 x 0.45 x 0.25

② To be released

Low Power Non-isolated DC-DC Converters

Input Voltage(V)	Series	Output Voltage								Efficiency	Package	Size (mm)
		3.3V	5V	-5V	9V	12V	-12V	15V	-15V			
4.75-36	NM78-A50HE(-N)	500mA	500mA	-300mA	500mA	500mA	-150mA	500mA	-150mA	Up to 90%	SIP	11.60 x 7.55 x 10.16
4.75-36	NM78-A50HB(-N)	500mA	500mA	-300mA		500mA	-150mA	500mA	-150mA	Up to 91%	SIP	10.00 x 7.20 x 11.00
6-36	NM78-1A0HE(-N)	1A	1A	-500mA	1A	1A	-300mA	1A	-300mA	Up to 94%	SIP	11.50 x 9.00 x 17.50
6-36	NM78-1A0LE(-N)	1A	1A	-500mA	1A	1A	-300mA	1A	-300mA	Up to 94%	SIP	19.00 x 11.50 x 9.00
6-36	NM78-1A0HB(-N)	1A	1A	-500mA		1A	-300mA	1A	-300mA	Up to 94%	SIP	11.50 x 7.20 x 17.50

AC-DC Converters

Features

- Universal AC input including 85-264VAC, 85-305VAC, 90-264VAC, 90-528VAC
- Operating Temperature: -40°C~+70°C, -40°C~+85°C



Packaging

- Industry standard footprint and package
- DIP, SIP, Chassis mounting, DIN-rail packages available

Safety

- UL60950-1 recognized
- Isolation: 3000VAC, 4000VAC

Output Power	Input Voltage	Output Voltage(V)	Efficiency	Isolation	Package
2.5W 3W	90-528VAC/100-745VDC	5, 9, 12, 15, 24	Up to 76%	4000VAC	SIP
3W	85-305VAC/70-430VDC	5, 9, 12, 15, 24	Up to 77%	3000VAC	SIP
3W 5W	85-264VAC/100-400VDC	3.3, 5, 9, 12, 15, 24	Up to 79%	3000VAC	SIP
4W-25W	85-305VAC/100-430VDC	3.3, 5, 9, 12, 15, 24, 48	Up to 87%	3000VAC	DIP
4W-25W	85-264VAC/100-370VDC	3.3, 5, 9, 12, 15, 24, 48	Up to 87%	3000VAC	DIP
10W-40W	85-264VAC/100-370VDC	±5, ±12, ±15, ±24, 5/5, 5/12, 5/15, 5/24	Up to 87%	3000VAC	DIP
50W 80W	90-264VAC/122-370VDC	5, 9, 12, 15, 24, 48	Up to 86%	4000VAC	DIP

Custom Power Supplies

Based on its mature platforms or standard modular products, NetPower can quickly design and develop semi and full custom products. The customization may range from minor changes to the standard products to full custom designs for specific electrical, mechanical, thermal, and environmental requirements.

EV on-board DC-DC Converters

Highlights

- High efficiency up to 94%
- High power density: up to 100W/inch³
- Low profile, space saving
- Advanced CAN communication

Flexibility

- Fast development with modular solution
- Customized to fit the size and shape
- EMI filter included

Power Range (kW)	Input Voltage (V)	Output Voltage (V)	Output Current (A)	Communication
1-1.5	200-400; 400-800	12-16	83-100	CAN
1.5-2	200-400; 400-800	12-16	125-170	CAN
2-3	200-400; 400-800	12-16	166-208	CAN
2-3	200-400; 400-800	24-32	72-108	CAN



Other Custom DC-DC Solutions

Highlights

- Mature technology and proven high reliability
- Wide Input range and power ratings
- Excellent thermal performance
- Low noise
- High efficiency and power density
- Protection against abnormal conditions
- Fast development cycle

Output Power(W)	Input Voltage(V)	Output Voltage(V)	Efficiency	Package(mm)
40	26-72	3.3, +/-5.1, 10.4/8.6(switchable), 13	80%	106.0 x 58.0 x 15.4
250	18-36	56	90%	206.5 x 129.4 x 21.7
450	36-75	12	95.5%	58.1 x 37.1 x 15.3



Custom AC-DC Products

Highlights

- Universal AC or wide range DC input
- Single or multiple outputs
- Compact design
- Protection against abnormal conditions
- High efficiency and high reliability
- Designed to meet UL and other safety requirements

Output Power(W)	Input Voltage(VAC)	Output Voltage(V)	Efficiency	Package(mm)
100	90-264	54, 48, 12	Up to 90%	170 x 85 x 36
150	90-264	54, 48, 12	Up to 91%	214 x 66 x 41.5
200	90-264	54, 12	Up to 91%	170 x 93 x 33
300	90-264	54, 12	Up to 89%	185 x 100 x 35
400	90-264	54, 12	Up to 90%	265 x 100 x 35
800	90-264	5, 12, 20, 24, 48, 60	Up to 91%	235 x 110 x 4

