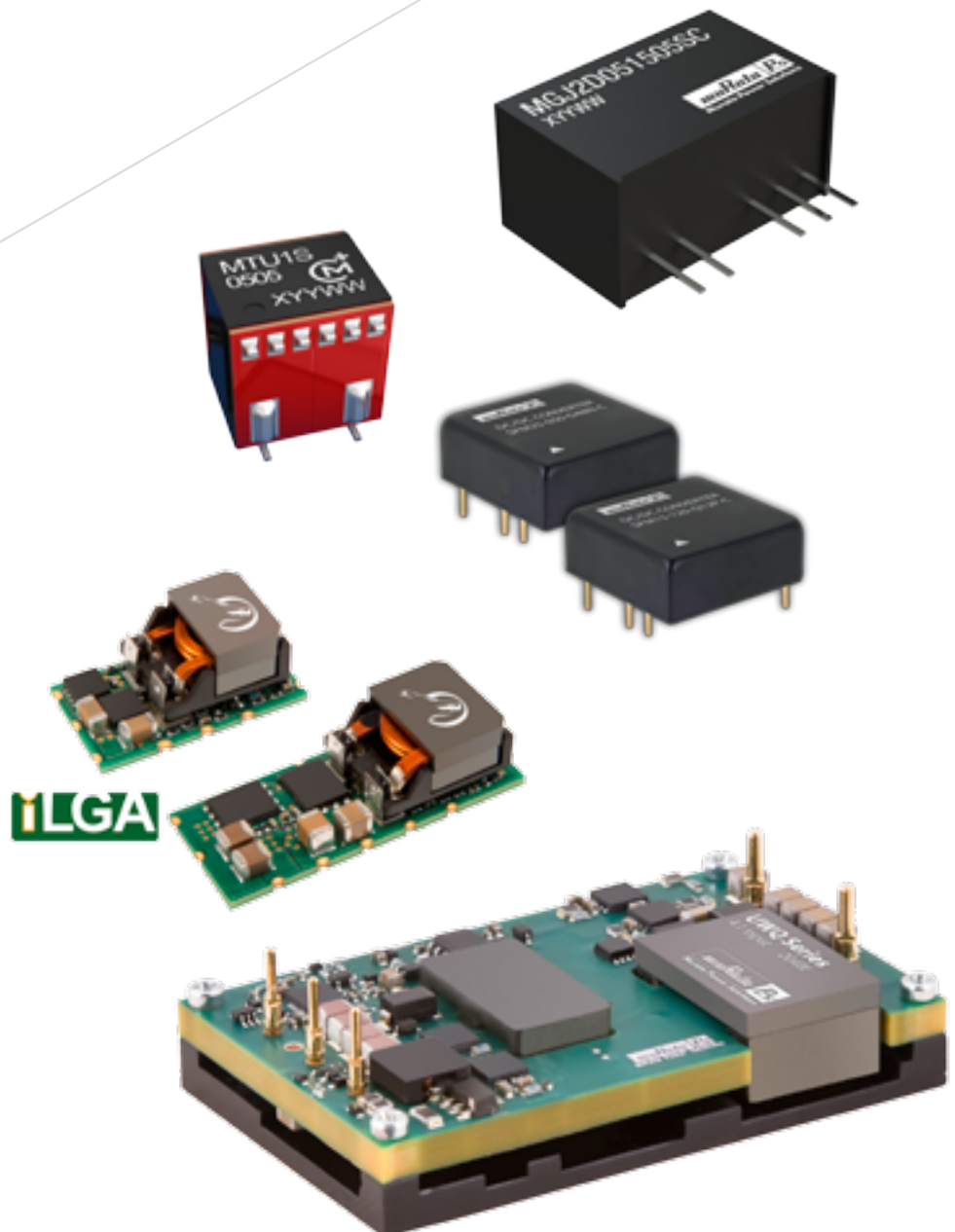


Latest products:

# DC-DC Converters

Isolated single, dual & triple output:  
<1W to 450W

Point-of-Load: 1A to 16A



# Powering Innovation

## About Murata Power Solutions

We are the #1 supplier of board mount power and among the top suppliers of overall power electronics. From 0.25W isolated converters to 2100W front-end power supplies, along with filtering and isolation solutions, our current offering exceeds 3,500 standard models developed in our design and manufacturing centers located in the US, Canada, England, Japan and China.

Murata's worldwide network of Technical Sales Managers, FAEs, Customer Support and industry-leading Distributors, reliably support the power requirements of local and global manufacturers of telecommunications equipment, data management systems, industrial controls, transportation electronics, energy systems, and more.

## Our DC-DC Converters

This catalog provides specifications for our entire offering of:

### Point-of-Load Converters

- DOSA compatible designs
- OKAMI, the new breed of DC-DCs

### Isolated DC to DC Converter Products

- Single, dual, and triple output
- Power from 0.25 to 450 Watts; Currents from 0.02 to 50 Amps

### Bricks

- DOSA compliant 1/32 to full size
- 1 x 1" and 2 x 2" encapsulated

### To sum it all up for you, Murata Power Solutions delivers:

- ✓ Innovation and reliability
- ✓ The largest variety of industry-standard DC/DCs
- ✓ Modified-standards and custom design expertise

Your preferred power partner . . . delivering innovative solutions you can rely on . . . again and again.

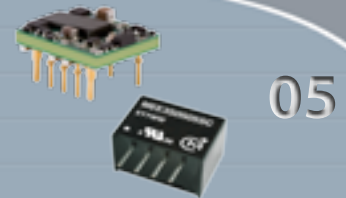


# Contents

## PoL Converters



## Isolated Single



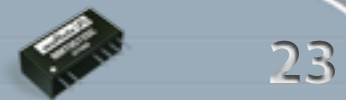
## Isolated Dual/Bipolar



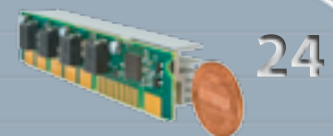
## Isolated Dual/Asymmetric



## Isolated Triple



## VRM Processor Support



## How to use this databook

Products are listed according to output voltage.

**1 Find** your **output voltage** from the product data tables.

– or –

**2 Refer** to **Quick Selection Guides** for

- **Output power** (isolated)
- **Output current** (PoLs)

**3 Choose** the ideal product series for your application.

**Visit [murata-ps.com](http://murata-ps.com)** for data sheets and complete specifications.



# Point-of-Load

## Non-Isolated DC DC Converter Series



Murata Power Solutions offers more non-isolated, point-of-load (PoL) DC/DCs, in standard packages and pinouts, than any other company.

Our PoL output voltages range from 0.75 to 6V at current levels from 2 to 50A. Input voltages are centered around traditional 3, 5 and 12V levels, with some devices operating

from 7.5 to 40V. Standard packages include SMT and SIP models.

The newest Okami SMT and SIP models offer user programmable outputs (0.6-15.5V) while operating from wide-range inputs (2.4-5.5V, 2.9-14V, 4.5-14V, 6-14V, 8.3-14V, 9-32V, 16-40V, or 19-40V). For many applications, they can be genuine “one-size-fits-all” solutions.

PoLs may be powered from AC to DC converters and DC to DC regulators, among other design options. Also, many designers find them a quick, cost-effective solution when isolation is not required and in-house designs are too expensive and time consuming.

### User programmable output voltages

Part Number* <small>Note: Root part numbers may be shown. Please refer to datasheets for available options.</small>	Output Characteristics			Input Voltage			Efficiency	Package				Package Dimensions						Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>
	Rated Output Current	Rated Output Voltage	Total Output Power	Nom.	Min.	Max.		SM	TH	DIP	SIP	Inches			mm			
												L	W	H	L	W	H	
OKL-T/1-W12x-C	1A	0.9-5.5V	5W	12V	2.9V	14V	90%	•				0.49	0.18	0.49	12.4	4.57	12.4	OKL-T/1-W12
OKR-T/1.5-W12-C	1.5A	0.591-6V	7.5W	12V	4.5V	14V	93%			•		0.41	0.24	0.40	10.4	6.1	10.16	OKR-T/1.5-W12
OKL-T/3-W5x-C	3A	0.6-3.63V	9.9W	5V	2.4V	5.5V	95%	•				0.48	0.24	0.48	12.2	6.2	12.2	OKL-T/3-W5
OKL-T/3-W12x-C		0.591-5.5V	15W	12V	4.5V	14V	93%	•				0.48	0.24	0.48	12.2	6.2	12.2	OKL-T/3-W12
OKL-T/6-W5x-C	6A	0.6-3.3V	19.8W	5V	2.4V	5.5V	94%	•				0.48	0.28	0.48	12.2	7.2	12.2	OKL-T/6-W5
OKL-T/6-W12x-C		0.591-5.5V	30W		4.5V			•				0.48	0.28	0.48	12.2	7.2	12.2	OKL-T/6-W12
OKX-T/3-D12-C	3A	0.75-5.5V	15W	12V	8.3V	14V	93%			•		0.40	0.09	0.28	10.16	22.9	7.2	OKX-T/3-D12
OKY-T/3-D12x-C												•				0.47	0.082	0.28
OKX-T/5-D12-C	5A	0.75-5.5V	25W	12V	8.3V	14V	93%			•		0.40	0.09	0.28	10.16	22.9	7.2	OKX-T/5-D12
OKY-T/5-D12x-C												•				0.47	0.082	0.28
OKX-T/3-W5-C	3A	0.7525-3.63V	9.9W	5V	2.4V	5.5V	94%			•		0.40	0.09	0.28	10.16	22.9	7.2	OKX-T/3-W5
OKY-T/3-W5x-C												•				0.47	0.082	0.28
OKX-T/5-W5-C	5A	0.7525-3.63V	16.5W	5V	2.4V	5.5V	94%			•		0.40	0.09	0.28	10.16	22.9	7.2	OKX-T/5-W5
OKY-T/5-W5x-C												•				0.47	0.082	0.28
OKY-T/10-D12x-C	10A	0.7525-5.5V	50W	12V	8.3V	14V	95%	•				0.53	0.33	1.3	33	8.4	33	OKY-T/10, T/16-D12
OKY-T/16-D12x-C	16A		80W				94%	•			0.53	0.33	1.3	33	8.4	33		
OKY-T/10-W5x-C	10A	0.7525-3.63V	33W	5V	2.4V	5.5V	95%	•				1.3	0.33	0.53	13.5	8.3	13.5	OKY-T/10, T/16-W5
OKY-T/16-W5x-C	16A		52.8W				95%	•			1.3	0.33	0.53	13.5	8.3	13.5		
OKX-T/10-D12x-C	10A	0.7525-5.5V	50W	8.3V			95%			•		0.5	0.37	2	50.8	9.4	50.8	OKX-T/10, T/16-D12
OKX-T/16-D12x-C	16A		80W				94%	•			0.5	0.37	2	50.8	9.4	50.8		
OKX-T/10-W5x-C	10A	0.7525-3.63V	33W	5V	2.4V	5.5V	96%			•		2	0.5	0.37	9.4	12.7	9.4	OKX-T/10, T/16-W5
OKX-T/16-W5x-C	16A		52.8W				95%	•			2	0.5	0.37	9.4	12.7	9.4		
OKR-T/3-W12-C	3A	0.591-6V	15W	12V	4.5V	14V	93%			•		0.65	0.22	0.41	10.4	5.6	10.4	OKR-T/3-W12
OKR-T/6-W12-C	6A		30W				96%	•			0.65	0.3	0.41	10.4	7.6	10.4	OKR-T/6-W12	
OKR-T/10-W12-C	10A		50W				92%	•			0.65	0.3	0.41	10.4	7.6	10.4	OKR-T/10-W12	
OKI-T/3-W32x-C	3A		0.7525-4.5V				13.5W	24V	9V	32	89%	•				0.82	0.34	0.47
OKI-T/3-W40x-C		0.7525-5.5V	15W	16V	40V	88%	•					0.82	0.34	0.47	11.9	8.5	11.9	OKI-T/3-W40
OKI-T/36W-W40x-C		5.021-15.5V	36W	19V	40V	95%	•					0.82	0.34	0.47	11.9	8.6	11.9	OKI-T/36W-W40

\*x = N (negative) or P (positive) polarity

### OKI-78SR Series fixed output voltages

Part Number	Rated Output Current	Rated Output Voltage	Total Output Power	Input Voltage	Efficiency	Package	Package Dimensions	Datasheet					
				Nom.	Min.	Max.	Inches	mm					
							L	W	H				
OKI-78SR3.3/1.5-W36-C	1.5A	3.3V	4.95W	24V	7V	36V	0.65	0.3	0.41	16.5	7.62	10.4	OKI-78SR
OKI-78SR3.3/1.5-W36H-C													
OKI-78SR5/1.5-W36-C		5V	7.5W				0.65	0.3	0.41	16.5	7.62	10.4	
OKI-78SR5/1.5-W36H-C													

# Single Output

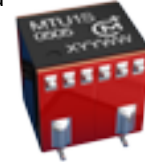
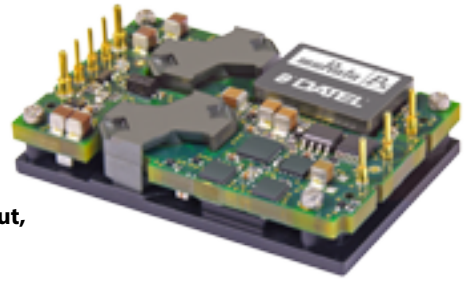
## Isolated DC to DC Converter Series

Power from 0.25 to 300 Watts; currents from 0.02 to 80 Amps; voltages from 1.2 to 96 Volts; inputs from 3 to 75 Volts . . . Murata Power Solutions offers the broadest line of single-output, isolated DC/DC converters in the entire power industry . . . without a doubt.

Our low-power encapsulated products (mini SIPs, DIPs and SMDs) are among the smallest available. Many use contemporary ceramic-substrates and copper-lead-frame technologies to achieve their small size.

At the other extreme, our high-power 1/32, 1/16, 1/8, 1/4, and 1/2 bricks are open-frame assemblies using multi-layer, heavy-copper pc boards and planar magnetics. Their high efficiencies enable full-power operation to high ambient temperatures, and optional baseplates deliver the best thermal performance in the industry.

If you can't find the DC/DC power solution you need in the tables below, contact us, and we'll develop one for you.



### Quick Selection Guide Listed by output power

Output Power	Output Voltages						Series
	3.3V	5V	6V	9V	12V	15V	
<1W							LME
							NMF
1-2W							MEE1
							MER1
							MEV1
							MTE1
							MTU1
							NKE
							NME
							NMJ
							NMR
							NMV
							NTE
							NTF
							PWR13XXC
2-3W							NDL
							MEJ2
							NMG
							NMK
							NML
3-4W							MEE3
							MEV3
							NDTS
							NDY

Output Power	Output Voltages											Series	
	1.2V	1.5V	1.8V	2.5V	3.3V	5V	5.2V	12V	15V	24V	96V		
6-10W													NCS6
													NDS6
													UWR 9.6W
10W													NPH10
15-18W													NPH15
													RUW15
													SPM15
													UEI15
18-25W													UEI25
													UHE 12-30W
25-35W													NPH25
													SPM25
													UEI30
													ULS-30W
35-50W													UEI 50-60W
													UEE
													UWS

Output Power	Output Voltages														Series		
	1.2V	1.5V	1.8V	2.5V	3.3V	5V	8.3	12V	15V	18V	24V	28V	29V	48V		53V	54V
50-75W																	UEI 50-60W
																	ULE
																	ULS
																	UVQ
																	UWE
75-100W																	UWS
																	PAE
																	UEE
																	ULS 100W
100-120W																	UVQ
																	UWE 100-120W
																	EMH
																	HPQ 165W
																	HPQ 182.6W
120-240W																	PAQ
																	RBE
																	UEE 150W
																	UWQ
300-450W																	PAH 350W
																	PAH 450W
																	PAH 450W
																	RBQ



# Single Output Isolated

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style							Package Dimensions						Further Information										
Rated Output Voltage	Rated Output Current	Total Output Power	Nom.	Min.	Max.			Bricks							Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>									
								1/32	1/16	1/8	1/4	1/2	SM	TH	DIP	SIP	L	W	H	L			W	H							
<b>3.3V</b>	<b>20A</b>	<b>66W</b>	48V	18V	75V	2.25kV	89.5%			•				•				2.3	0.38	0.9	58.4	9.7	22.9	UWE-3.3/20-Q48N-C	UWE						
			48V	36V	75V	2.25kV	89%			•				•	•				2.3	0.9	0.41	58.4	22.9	10.4	ULE-3.3/20-D48N-C	ULE20A					
	<b>25A</b>	<b>82.5W</b>	48V	18V	75V	2.25kV	90%			•				•	•			1.3	0.4	0.9	33.02	10.16	22.86	ULS-3.3/20-D48N-C	ULS						
			48V	18V	75V	2.25kV	88.5%			•				•	•				2.22	1.45	0.43	56.4	36.8	10.9	UEE-3.3/25-D48	UEE					
			12V	9V	36V	2kV	88%			•				•	•				2.22	1.45	0.43	56.4	36.8	10.9	UQQ-3.3/25-Q12P-C	UQQ7-15A					
			48V	18V	75V	2.25kV	88.5%			•				•	•				2.22	1.45	0.43	56.4	36.8	10.9	UQQ-3.3/25-Q48N-C						
	<b>30A</b>	<b>99W</b>	24V	18V	36V	2kV	89%			•				•	•				2.3	1.45	0.42	58.4	36.8	10.7	UVQ-3.3/30-D24P-C	UVQ					
			48V	18V	75V	2.25kV	89.5%			•				•	•				2.3	0.9	0.39	58.4	22.9	9.9	UWE-3.3/30-Q48-C	UWE-100-120W					
				36V	75V	2.25kV	90%			•				•	•					2.3	0.9	0.4	58.4	22.9	10.2	UEE-3.3/30-D48	UEE				
	<b>35A</b>	<b>115.5W</b>	48V	36V	75V	2.25kV	92%			•				•	•				2.3	1.45	0.42	58.4	36.8	10.7	UVQ-3.3/35-D48N-C	UVQ					
							92%			•			•	•								2.3	0.9	0.4	58.4	22.9	10.2	UEE-3.3/45-D48	UEE 150W		
							90%			•				•	•								2.3	1.45	0.4	58.4	36.8	10.2	HPQ-3.3/50-D48N-C	HPQ	
	<b>5V</b>	<b>0.05A</b>	<b>0.25W</b>	3.3V	2.97V	3.63V	1kV	70%						•	•				0.24	0.45	0.39	6	11.5	10	LME0305SC	LME					
				5V	4.5V	5.5V	1kV	70%							•	•				0.39	0.45	0.27	9.8	11.5	6.8		LME0505DC				
12V				10.8V	13.2V	1kV	70%							•	•				0.24	0.45	0.39	6	11.5	10	LME0505SC						
<b>0.1A</b>		<b>0.5W</b>	5V	4.75V	5.25V	1kV	50%							•	•				0.39	0.77	0.27	9.8	19.5	6.8	NMF0505DC	NMF					
							50%							•	•							0.24	0.77	0.39	6		19.5	10	NMF0505SC		
							50%							•	•								0.39	0.77	0.27		9.8	19.5	6.8	NMF1205DC	
							50%							•	•								0.24	0.77	0.39		6	19.5	10	NMF1205SC	
<b>0.2A</b>		<b>1W</b>	5V	4.5V	5.5V	1kV	84%							•	•				0.39	0.77	0.27	9.8	19.5	6.8	MEV1S0505DC	MEV1					
							80%							•	•								0.24	0.45	0.39		6	11.5	10	MEV1S0505SC	
							84%							•	•								0.24	0.77	0.39		6	19.5	10	MER1S0505SC	
							82%							•	•									0.5	0.43		0.27	12.7	11	7.05	MTE1S0505MC
							83%							•	•									0.323	0.331		0.335	8.2	8.4	8.5	MTU1S0505MC
							84%												•	•				0.39	0.77		0.27	9.8	19.5	6.8	NKE0505DC
							69%												•	•				0.24	0.45		0.29	6	11.5	7.5	NKE0505SC
							78%												•	•				0.39	0.45		0.21	9.8	11.5	5.4	NKE0505DEC
							78%												•	•				0.39	0.45		0.29	6	11.5	7.5	NKE0505SEC
							69%												•	•				0.39	0.45		0.27	9.8	11.5	6.8	NME0505DC
		<b>1W</b>	5V	4.5V	5.5V	1kV	68%								•	•				0.24	0.45	0.39	6	11.5	10	NME0505SC					
							68%																0.39	0.77	0.49	9.8	19.5	12.5	NMJ0505SAC		
							69%												•	•				0.24	0.77	0.39	6	19.5	10	NMR100C	
							68%												•	•				0.39	0.77	0.27	9.8	19.5	6.8	NMV0505DAC	
							68%												•	•				0.24	0.77	0.39	6	19.5	10	NMV0505SAC	
							68%												•	•				0.30	0.5	0.26	7.7	12.7	6.6	NTE0505MC	
							77%												•	•				0.30	0.5	0.26	7.7	12.7	6.6	NTE0505MEC	
							73%												•	•				0.70	0.5	0.13	17.8	12.7	3.3	NTFS1205MC	









**Single Output Isolated**

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style							Package Dimensions						Further Information											
Rated Output Voltage	Rated Output Current	Total Output Power	Nom.	Min.	Max.			Bricks							Inches			mm			Part Number <small>Note: Root part numbers may be shown. Please refer to datasheets for available options.</small>	Datasheet <small>Available at www.murata-ps.com</small>										
								1/32	1/16	1/8	1/4	1/2	SM	TH	DIP	SIP	L	W	H	L			W	H								
<b>9V</b>	<b>0.111A</b>	<b>1W</b>	48V	43.2V	52.8V	1kV	83%												0.24	0.77	0.39	6	19.5	10	MER1S4809SC	MER1						
						3kV	82%																0.24	0.77	0.39	6	19.5	10	MEV1S4809SC	MEV1		
	<b>0.22A</b>	<b>2W</b>	5V	4.5V	5.5V	9V	1kV	71%												0.36	0.86	0.44	9.2	21.8	11.1	NDL0509SC	NDL					
						1kV	84%															0.30	0.77	0.4	7.5	19.5	10	NMG0509SC	NMG			
						1kV	81%																0.30	0.55	0.39	7.5	14	10	NML0509SC	NML		
						3kV	83%																0.30	0.77	0.4	7.5	19.5	10	NMK0509SAC	NMK		
						5.2kV	78%																0.77	0.39	0.5	19.65	9.95	12.65	MEJ2S0509SC	MEJ2		
						12V	9V	18V	1kV	79%													0.36	0.86	0.44	9.2	21.8	11.1	NDL1209SC	NDL		
			12V	10.8V	13.2V	1kV	83%														0.30	0.77	0.4	7.5	19.5	10	NMG1209SC	NMG				
						1kV	84%															0.30	0.55	0.39	7.5	14	10	NML1209SC	NML			
						3kV	83%															0.30	0.77	0.4	7.5	19.5	10	NMK1209SAC	NMK			
						5.2kV	79%															0.77	0.39	0.5	19.65	9.95	12.65	MEJ2S1209SC	MEJ2			
						3kV	86%															0.30	0.77	0.4	7.5	19.5	10	NMK1509SAC	NMK			
						5.2kV	78%															0.77	0.39	0.5	19.65	9.95	12.65	MEJ2S1509SC	MEJ2			
						24V	18V	36V	1kV	81%												0.36	0.86	0.44	9.2	21.8	11.1	NDL2409SC	NDL			
						24V	21.6V	26.4V	3kV	87%												0.30	0.77	0.4	7.5	19.5	10	NMK2409SAC	NMK			
						48V	36V	72V	1kV	80%												0.36	0.86	0.44	9.2	21.8	11.1	NDL4809SC	NDL			
						<b>0.333A</b>	<b>3W</b>	5V	4.5V	5.5V	1kV	87%											0.56	0.32	0.4	14.15	8.15	10.15	MEE3S0509SC	MEE3		
											3kV	87%													0.4	0.77	0.3	10.2	19.7	7.7	MEV3S0509SC	MEV3
											9V	1kV	72%												0.58	1.27	0.28	14.7	32.3	7	NDY0509C	NDY
	12V	10.8	13.2	1kV	78%													0.58	1.27	0.28	14.7	32.3	7	NDY1209C	NDY							
				1kV	88%														0.56	0.32	0.4	14.15	8.15	10.15	MEE3S1209SC	MEE3						
				3kV	87.5%												0.4	0.77	0.3	10.2	19.7	7.7	MEV3S1209SC	MEV3								
	24V	18V	36V	1kV	78%												0.58	1.27	0.28	14.7	32.3	7	NDY2409C	NDY								
	48V	36V	72V	1kV	80%												0.58	1.27	0.28	14.7	32.3	7	NDY4809C									

<b>12V</b>	<b>0.021A</b>	<b>0.25W</b>	5V	4.5V	5.5V	1kV	75%											0.39	0.45	0.27	9.8	11.5	6.8	LME0512DC	LME					
																			0.24	0.45	0.39	6	11.5	10		LME0512SC				
			12V	10.8V	13.2V	1kV	75%										0.39	0.45	0.27	9.8	11.5	6.8	LME1212DC							
	<b>0.083A</b>	<b>1W</b>	3.3V	2.97V	3.63V	1kV	81%											0.39	0.45	0.27	9.8	11.5	6.8	MEE1S0312DC	MEE1					
																			0.24	0.45	0.39	6	11.5	10		MEE1S0312SC				
									86%												0.5	0.43	0.27	12.7	11	7.05	MTE1S0312MC	MTE1		
									77%											0.30	0.5	0.26	7.7	12.7	6.6	NTE0312MC	NTE			
									67%											0.70	0.5	0.13	17.8	12.7	3.3	NTFS0512MC	NTF			
						5V	4.5V	5.5V	1kV	81%											0.39	0.45	0.27	9.8	11.5	6.8	MEE1S0512DC	MEE1		
																						0.24	0.45	0.39	6	11.5	10		MEE1S0512SC	
												87%											0.24	0.77	0.39	6	19.5	10	MER1S0512SC	MER1
												87%											0.5	0.43	0.27	12.7	11	7.05	MTE1S0512MC	MTE1
									87%											0.39	0.77	0.27	9.8	19.5	6.8	MEV1S0512DC	MEV1			
									87%											0.24	0.77	0.39	6	19.5	10	MEV1S0512SC				
									87%											0.323	0.331	0.335	8.2	8.4	8.5	MTU1S0512MC	MTU1			
									78%											0.39	0.45	0.27	9.8	11.5	6.8	NME0512DC	NME			
									77%											0.24	0.45	0.39	6	11.5	10	NME0512SC				
									77%											0.39	0.45	0.21	9.8	11.5	5.4	NKE0512DC	NKE			
									77%											0.24	0.45	0.29	6	11.5	7.5	NKE0512SC				
									77%											0.39	0.77	0.27	9.8	19.5	6.8	NMV0512DAC	NMV			
						77%											0.24	0.77	0.39	6	19.5	10	NMV0512SAC							
						71%											0.39	0.77	0.49	9.8	19.5	12.5	NMJ0512SAC	NMJ						
						77%											0.24	0.77	0.39	6	19.5	10	NMR101C	NMR						
			5V	4.75V	5.25V	1kV	62%										0.39	0.77	0.27	9.8	19.5	6.8	NMF0512DC	NMF						
																0.24	0.77	0.39	6	19.5	10	NMF0512SC								
	12V	9V				15V	1kV	66%									0.70	0.5	0.13	17.8	12.7	3.3	NTFS1212MC	NTF						









Single Output Isolated

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style								Package Dimensions						Further Information														
Rated Output Voltage	Rated Output Current	Total Output Power	Nom.	Min.	Max.			Bricks								Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>													
								1/32	1/16	1/8	1/4	1/2	SM	TH	DIP	SIP	L	W	H	L	W			H												
<b>15V</b>	<b>1.7A</b>	<b>25W</b>	24V	18V	36V	1.5kV	87%													1.38	1.97	0.39	35	50	10	NPH25S2415EIC	NPH25S									
																					1.38	1.97	0.39	35	50	10		NPH25S2415IC								
	<b>2A</b>	<b>30W</b>	12V	9V	18V	1.5kV	89%													2	1.6	0.4	50.8	40.6	10.2	UHE-15/2000-D12-C	UHE 12-30W									
																					2	1.6	0.4	50.8	40.6	10.2		UHE-15/2000-Q12-C								
			24V	9V	36V	1.5kV	92%														1.92	0.35	0.92	48.8	8.9	23.4	UEI30-150-Q12P-C	UEI30								
				18V	36V	1.5kV	90%														2	1.6	0.4	50.8	40.6	10.2	UHE-15/2000-D24-C	UHE 12-30W								
			48V	18V	75V	1.5kV	90.5%														2	1.6	0.4	50.8	40.6	10.2	UHE-15/2000-Q48-C	UHE 12-30W								
																					1.92	0.35	0.92	48.8	8.9	23.4	UEI30-150-Q48N-C	UEI30								
				36V	75V	1.5kV	92%														2	1.6	0.4	50.8	40.6	10.2	UHE-15/2000-D48-C	UHE 12-30W								
																			2.25kV	89%									0.9	1.3	0.36	22.9	33.02	9.14	ULS-15/2-D48	ULS-30W
	<b>3.3A</b>	<b>49.5W</b>	24V	9V	36V	2.25kV	90%												1.95	1.55	0.375	49.5	39.4	9.5	UEI-15/3.3-Q12P-C	UEI-50/60										
<b>4A</b>	<b>60W</b>	48V	18V	75	2.25kV	89.3%											1.95	1.55	0.375	49.5	39.4	9.5	UEI-15/4-Q48N-C													
<b>5A</b>	<b>75W</b>	12V	9V	36	2.25kV	91.5%												2.3	0.38	0.9	58.4	9.7	22.9	UWE-15/5-Q12P-C	UWE											
<b>7A</b>	<b>105W</b>	12V	9V	36V	2kV	90.5%												2.22	1.45	0.43	56.4	36.8	10.9	UQQ-15/7-Q12P-C	UQQ7-15A											
		24V	18V	36V	2kV	93%												2.3	1.45	0.42	58.4	36.8	10.7	UVQ-15/7-D24P-C	UVQ											
		48V	36V	75V	2.25kV	94%												2.3	1.45	0.42	58.4	36.8	10.7	UVQ-15/7-D48N-C												
<b>18V</b>	<b>5.6A</b>	<b>100.8W</b>	24V	18V	36V	2kV	90%											2.3	1.45	0.42	58.4	36.8	10.7	UVQ-18/5.6-D24P-C	UVQ											
	<b>6A</b>	<b>108W</b>	48V	36V	75V	2.25kV	93%											2.3	1.45	0.42	58.4	36.8	10.7	UVQ-18/6-D48N-C												
<b>24V</b>	<b>0.042A</b>	<b>1W</b>	5V	4.5V	5.5V	1kV	80%											0.39	0.45	0.27	9.8	11.5	6.8	NME0524DC	NME											
																			0.24	0.45	0.39	6	11.5	10		NME0524SC										
	<b>0.625A</b>	<b>15W</b>	N/A	16V	160V	4kV	78%											2	2	0.79	50.8	50.8	20	RUW15SL24C	RUW15											
									77%											2	2	0.79	50.8	50.8		20	RUW15SL24HC									
	<b>3A</b>	<b>72W</b>	12V	9V	36V	2.25kV	89.5%											2.3	0.38	0.9	58.4	9.7	22.9	UWE-24/3-Q12P-C	UWE											
			48V	36V	75V	2.25kV	94%												2.3	0.9	0.41	58.4	22.9	10.4	ULE-24/3-D48N-C	ULE20A										
<b>4A</b>	<b>96W</b>	12V	9V	36V	2kV	89%											2.22	1.45	0.43	56.4	36.8	10.9	UQQ-24/4-Q12P-C	UQQ 7-15A												
<b>4.5A</b>	<b>108W</b>	24V	18V	36V	2kV	94%											2.3	1.45	0.42	58.4	36.8	10.7	UVQ-24/4.5-D24P-C	UVQ												
		48V	36V	75V	2.25kV	94%											2.3	1.45	0.42	58.42	36.8	10.7	UVQ-24/4.5-D48N-C													
<b>28V</b>	<b>12.5A</b>	<b>350W</b>	48V	36V	75V	2.25kV	93%											2.3	2.4	0.5	58.4	60.9	12.7	PAH-28/12.5-D48	PAH-28V, 350W											
	<b>16A</b>	<b>450W</b>					93.5%													2.3	2.4	0.5	58.4	60.9	12.7	PAH-28/16-D48	PAH-28V, 450W									
<b>29V</b>	<b>5</b>	<b>150W</b>	48V	36V	75V	2.25kV	92.5%											2.3	1.45	0.46	58.42	36.8	11.7	PAQ-29/5-D48-C	PAQ											
<b>29.8V</b>	<b>3.3A</b>	<b>98.34W</b>	48V	36V	75V	1.5kV	92.5%											2.3	0.9	0.44	58.4	22.9	11.1	PAE-29/3-D48	PAE											
<b>48V</b>	<b>1.25A</b>	<b>60W</b>	48V	36V	75V	2.25kV	92.5%											2.3	0.9	0.41	58.4	22.9	10.4	ULE-48/1.25-D48N-C	ULE20A											
	<b>2.5A</b>	<b>120W</b>					91.5%													2.3	1.45	0.42	58.4	36.8	10.7	UVQ-48/2.5-D48N-C	UVQ									
	<b>8.5A</b>	<b>408W</b>					94%													2.3	2.4	0.5	58.4	60.9	12.7	PAH-48/8.5-D48	PAH-53V, 450W									
<b>53V</b>	<b>8.5A</b>	<b>450W</b>	48V	36V	75V	2.25kV	94%											2.3	2.4	0.5	58.4	60.9	12.7	PAH-53/8.5-D48	PAH-53V, 450W											
<b>54V</b>	<b>3A</b>	<b>162W</b>	48V	18V	72V	2.25kV	91.5%											2.4	2.3	0.43	61.0	58.4	10.92	EMH-54/3-Q48N-C	EMH											
<b>96V</b>	<b>0.10</b>	<b>9.600</b>	48V	36V	75V	1.5kV	88%											2	1	0.4	50.8	25.4	10.2	UWR-96/100-D48A-C	UWR-96-100											



# Dual Output

## Bipolar Isolated DC-DC Converters



For analog/linear and other applications requiring bipolar/symmetric rail voltages, Murata Power Solutions' isolated duals generate  $\pm 3.3V$ ,  $\pm 5V$ ,  $\pm 12V$  or  $\pm 15V$  outputs from a single input voltage. Not surprisingly, our offering is the industry's broadest.

We offer bipolar duals with output power ranges from 0.75 to 20 Watts, input voltage ranges from 3 to 75 Volts, and package styles from sub-miniature SIPs, DIPs and SMDs to traditional 2" x 2" (51 x 51mm) through-hole devices. Isolation voltages run as high as 8,000Vdc. When relevant, all products offer

UL/EN safety certifications, CE marks, and EMI/EMC testing.

If your available voltage is anywhere between 3.3 and 75 Volts and your need is  $\pm 3.3V$ ,  $\pm 5V$ ,  $\pm 12V$  or  $\pm 15V$  at moderate power levels – in a small area – we've got your solution.

### Quick Selection Guide Listed by output power

	Vout						Series
	$\pm 3.3V$	$\pm 5V$	$\pm 9V$	$\pm 12V$	$\pm 15V$	$\pm 24V$	
<b>1W</b>	•	•	•	•	•		MEA1
	•	•	•	•	•		MTU1
	•	•	•	•	•		NKA
	•	•	•	•	•		NMA
	•	•	•	•	•		NMJ
	•	•	•	•	•		NMV
	•	•	•	•	•		NTA
	•	•	•	•	•		NTV
<b>1.5W</b>	•	•	•	•	•		PWR13XXC
	•	•	•	•	•		PWR1726AC

	Vout						Series
	$\pm 3.3V$	$\pm 5V$	$\pm 9V$	$\pm 12V$	$\pm 15V$	$\pm 24V$	
<b>2W</b>	•	•	•	•	•		MEJ2
	•	•	•	•	•	•	NMH
	•	•	•	•	•		NMK
	•	•	•	•	•		NMS
	•	•	•	•	•		NTH
<b>3W</b>	•	•	•	•	•		NDH
	•	•	•	•	•		NDTD
	•	•	•	•	•		PWR70C

	Vout						Series
	$\pm 3.3V$	$\pm 5V$	$\pm 9V$	$\pm 12V$	$\pm 15V$	$\pm 24V$	
<b>5W</b>				•			PWR1546AC
<b>6W</b>	•	•	•	•	•		NCS6
	•	•	•	•	•		NDS6
<b>15W</b>	•	•	•	•	•		BEI

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style						Package Dimensions						Further Information		
Rated Output Voltages	Rated Output Currents	Total Output Power	Nom.	Min.	Max.			Bricks		SM	TH	DIP	SIP	Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>	
								1/8	1/4					1/2	L	W	H	L	W			H
<b><math>\pm 3.3V</math></b>	$\pm 0.152A$	<b>1W</b>	3.3V	2.97V	3.63V	3kV	74%				•	•	0.39	0.77	0.21	9.8	19.5	5.4	NKA0303DC	NKA		
						1kV	75%				•	•	0.23	0.65	0.3	6.0	16.6	7.6	NKA0303SC			
			5V	4.5V	5.5V	3kV	77%				•	•	•	0.39	0.77	0.21	9.8	19.5	5.4	NKA0503DC	NKA	
						1kV	77%				•	•	0.23	0.65	0.3	6	16.6	7.6	NKA0503SC			
			$\pm 0.303A$	<b>2W</b>	5V	4.5V	5.5V	5.2kV	71%				•	•	0.5	0.77	0.39	12.7	19.7	10.0	MEJ2D0503SC	MEJ2
								12	10.8V	13.2V	5.2kV	75%				•	•	•	0.5	0.77	0.39	
	5V	4.5V			9V	1kV	67%					•	•	•	0.58	1.27	0.27	14.7	32.3	7.0	NDTD0503C	NDTD
							73%					•	•	•	0.58	1.27	0.27	14.7	32.3	7.0	NDTD1203C	
							73%					•	•	•	0.58	1.27	0.27	14.7	32.3	7.0	NDTD2403C	
							72%					•	•	•	0.58	1.27	0.27	14.7	32.3	7.0	NDTD4803C	
	$\pm 0.454A$	<b>3W</b>	3.3V	2.97V	3.63V	1kV	83%				•		0.323	0.331	0.335	8.2	8.4	8.5	MTU1D0305MC	MTU1		
						78%				•		0.30	0.60	0.26	7.7	15.2	6.6	NTA0305MC	NTA			
5V			4.5V	9V	1kV	79%				•	•	•	0.39	0.77	0.21	9.8	19.5	5.4		NKA0305DC	NKA	
						79%				•	•	•	0.23	0.65	0.30	6.0	16.6	7.6	NKA0305SC			





### Dual Output Bipolar

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style						Package Dimensions						Further Information						
Rated Output Voltages	Rated Output Currents	Total Output Power	Nom.	Min.	Max.			Bricks		SM	TH	DIP	SIP	Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>					
								1/8	1/4					1/2	L	W	H	L	W			H				
<b>±12V</b>	<b>±0.042A</b>	<b>1W</b>	3.3V	2.97V	3.63V	3kV	78%						0.39	0.77	0.21	9.8	19.5	5.4	NKA0312DC	NKA						
						1kV	77%						0.23	0.65	0.3	6	16.6	7.6	NKA0312SC							
			5V	4.5V	5.5V	1kV	87%								0.39	0.77	0.27	9.8	19.5	6.8	MEA1D0512DC	MEA1				
															0.24	0.77	0.39	6.0	19.5	10.0	MEA1D0512SC					
							87%								0.323	0.331	0.335	8.2	8.4	8.5	MTU1D0512MC	MTU1				
							78%								0.39	0.77	0.21	9.8	19.5	5.4	NKA0512DC	NKA				
														0.23	0.65	0.3	6	16.6	7.6	NKA0512SC						
									77%									0.39	0.77	0.27	9.8	19.5	6.8	NMA0512DC	NMA	
																		0.24	0.77	0.39	6	19.5	10	NMA0512SC		
									5.2kV	65%								0.39	0.77	0.49	9.8	19.5	12.5	NMJ0512SC	NMJ	
									3kV	78%								0.39	0.77	0.27	9.8	19.5	6.8	NMV0512DC	NMV	
																		0.24	0.77	0.39	6	19.5	10	NMV0512SC		
						1kV	77%								0.3	0.6	0.26	7.7	15.2	6.6	NTA0512MC	NTA				
						3kV	79%								0.3	0.6	0.26	7.7	15.2	6.6	NTV0512MC	NTV				
			12V	10.8V	13.2V	1kV	89%								0.39	0.77	0.27	9.8	19.5	6.8	MEA1D1212DC	MEA1				
															0.24	0.77	0.39	6.0	19.5	10.0	MEA1D1212SC					
									88%									0.323	0.331	0.335	8.2	8.4	8.5	MTU1D1212MC	MTU1	
									3kV	81%								0.39	0.77	0.21	9.8	19.5	5.4	NKA1212DC	NKA	
																		0.65	0.30	6	16.6	7.6	NKA1212SC			
									1kV	75%								0.39	0.77	0.27	9.8	19.5	6.8	NMA1212DC	NMA	
																		0.24	0.77	0.39	6	19.5	10	NMA1212SC		
									5.2kV	65%								0.39	0.77	0.49	9.8	19.5	12.5	NMJ1212SC	NMJ	
									3kV	75%								0.39	0.77	0.27	9.8	19.5	6.8	NMV1212DC	NMV	
																		0.24	0.77	0.39	6	19.5	10	NMV1212SC		
									1kV	75%								0.3	0.6	0.26	7.7	15.2	6.6	NTA1212MC	NTA	
									3kV	80%								0.3	0.6	0.26	7.7	15.2	6.6	NTV1212MC	NTV	
						15V	13.5V	16.5V	1kV	87.5%								0.39	0.77	0.27	9.8	19.5	6.8	MEA1D1512DC	MEA1	
																		0.24	0.77	0.39	6.0	19.5	10.0	MEA1D1512SC		
			15V	13.5V	16.5V	1kV	78%								0.39	0.77	0.27	9.8	19.5	6.8	NMA1512DC	NMA				
															0.24	0.77	0.39	6	19.5	10	NMA1512SC					
						3kV	75%								0.24	0.77	0.39	6.0	19.5	10.0	NMV1512SC	NMV				
			24V	21.6V	26.4V	1kV	87%								0.39	0.77	0.27	9.8	19.5	6.8	MEA1D2412DC	MEA1				
															0.24	0.77	0.39	6.0	19.5	10.0	MEA1D2412SC					
			48V	43.2V	52.8V	1kV	83%								0.39	0.77	0.27	9.8	19.5	6.8	MEA1D4812SC	MEA1				
			<b>±0.063A</b>	<b>1.5W</b>	5V	4.5V	5.5V	8kV	75%							1.27	0.81	0.4	32.3	20.5	10.2	PWR1304AC	PWR13XXC			
																					1.27	0.81		0.4	32.3	20.5
			<b>±0.083A</b>	<b>2W</b>	5V	4.5V	5.5V	1kV	82%							0.39	0.77	0.3	9.8	19.5	7.7	NMH0512DC	NMH			
																0.3	0.77	0.4	7.5	19.5	10	NMH0512SC				
								3kV	87%							0.30	0.77	0.4	7.5	19.5	10	NMK0512SC		NMK		
								6kV	77%							0.58	1.28	0.37	14.7	32.6	9.4	NMS0512C		NMS		
								1kV	82%								0.5	0.7	0.21	12.7	17.8	6.0	NTH0512MC	NTH		
					12V	10.8V	13.2V	1kV	84%								0.39	0.77	0.30	9.8	19.5	7.7	NMH1212DC	NMH		
																	0.3	0.77	0.4	7.5	19.5	10	NMH1212SC			
											3kV	87%							0.30	0.77	0.4	7.5	19.5	10	NMK1212SC	NMK
											6kV	82%							0.58	1.28	0.37	14.7	32.6	9.4	NMS1212C	NMS
								1kV	84%								0.5	0.7	0.21	12.7	17.8	6.0	NTH1212MC	NTH		
					15V	13.5V	16.5V	3kV	88%								0.30	0.77	0.4	7.5	19.5	10	NMK1512SC	NMK		
																	0.39	0.77	0.3	9.8	19.5	7.7	NMH2412DC			
					24V	21.6V	26.4V	1kV	86%								0.3	0.77	0.4	7.5	19.5	10	NMH2412SC	NMH		
					24V	21.6V	26.4V	3kV	89%								0.30	0.77	0.4	7.5	19.5	10	NMK2412SC	NMK		
			48V	43.2V	52.8V	1kV	85%								0.39	0.77	0.3	9.8	19.5	7.7	NMH4812DC	NMH				
															0.3	0.77	0.4	7.5	19.5	10	NMH4812SC					

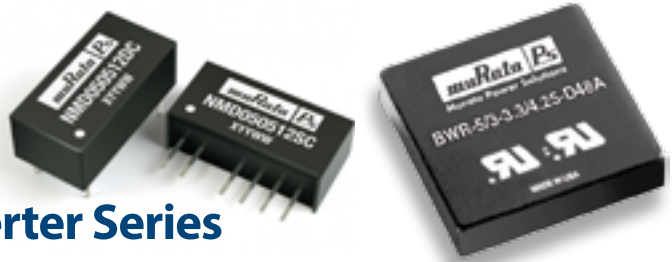


## Dual Output Bipolar

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style						Package Dimensions						Further Information				
Rated Output Voltages	Rated Output Currents	Total Output Power	Nom.	Min.	Max.			Bricks		SM	TH	DIP	SIP	Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>			
								1/8	1/4					1/2	L	W	H	L	W			H		
<b>±15V</b>	<b>±0.067A</b>	<b>2W</b>	5V	4.5V	5.5V	1kV	84%						0.39	0.77	0.30	9.8	19.5	7.7	NMH0515DC	NMH				
																								NMH0515SC
						1kV	84%										0.50	0.70	0.21	12.7	17.8	6.0	NTH0515MC	NTH
						3kV	87%										0.30	0.77	0.4	7.5	19.5	10	NMK0515SC	NMK
						5.2kV	79%										0.5	0.77	0.39	12.7	19.7	10.0	MEJ2D0515SC	MEJ2
			6kV	78%										0.58	1.28	0.37	14.7	32.6	9.4	NMS0515C	NMS			
			12V	10.8V	13.2V	1kV	84%								0.39	0.77	0.30	9.8	19.5	7.7	NMH1215DC	NMH		
																								NMH1215SC
						1kV	84%										0.50	0.70	0.21	12.7	17.8	6.0	NTH1215MC	NTH
						3kV	87%										0.30	0.77	0.4	7.5	19.5	10	NMK1215SC	NMK
						5.2kV	82%										0.5	0.77	0.39	12.7	19.7	10.0	MEJ2D1215SC	MEJ2
						6kV	82%										0.58	1.28	0.37	14.7	32.6	9.4	NMS1215C	NMS
			15V	13.5V	16.5V	1kV	84%								0.30	0.77	0.40	7.5	19.5	10.0	NMH1515SC	NMH		
						3kV	88%									0.30	0.77	0.4	7.5	19.5	10	NMK1515SC	NMK	
						5.2kV	79%									0.5	0.77	0.39	12.7	19.7	10.0	MEJ2D1515SC	MEJ2	
	24V	21.6V	26.4V	1kV	86%								0.39	0.77	0.30	9.8	19.5	7.7	NMH2415DC	NMH				
																						NMH2415SC		
		3kV	89%										0.30	0.77	0.4	7.5	19.5	10	NMK2415SC	NMK				
	48V	43.2V	52.8V	1kV	85%								0.39	0.77	0.30	9.8	19.5	7.7	NMH4815DC	NMH				
	48V	43.2V	52.8V	1kV	85%								0.30	0.77	0.40	7.5	19.5	10.0	NMH4815SC					
	<b>±0.1A</b>	<b>3W</b>	5V	4.5V	9V	1kV	75%							0.58	1.27	0.27	14.7	32.3	7.0	NDTD0515C	NDTD			
						12V	9V	18V	1kV	78%							0.58	1.27	0.27	14.7	32.3	7.0	NDTD1215C	NDTD
			15V	10V	18V	5kV	66%								1.13	1.13	0.41	28.6	28.6	10.7	PWR70C	PWR70C		
				18V	36V	1kV	82%								0.36	1.02	0.49	9.3	26.0	12.5	NDH2415SC	NDH		
			48V	36V	75V	1kV	81%								0.58	1.27	0.27	14.7	32.3	7.0	NDTD2415C	NDTD		
	48V	36V	75V	1kV	81%								0.58	1.27	0.27	14.7	32.3	7.0	NDTD4815C	NDTD				
	<b>±0.167A</b>	<b>5W</b>	5V	4.5V	5.5V	0.75kV	60%						2.00	2.00	0.40	50.8	50.8	10.2	PWR1546AC	PWR1546A				
	<b>±0.20A</b>	<b>6W</b>	12V	9V	36V	1.5kV	87%							1.26	0.79	0.39	32	20	10	NCS6D1215C	NCS6			
			24V	18V	36V	1.5kV	87.5%							1.26	0.79	0.39	32	20	10	NDS6D2415C	NDS6			
			48V	18V	75V	1.5kV	84%							1.26	0.79	0.39	32	20	10	NCS6D4815C	NCS6			
<b>±0.50A</b>	<b>15W</b>	24V	9V	36V	2.25kV	84%							1.1	0.35	0.96	27.9	8.9	24.4	BEI15-150-Q12	BEI15-Series				
		48V	18V	75V		86%								1.1	0.35	0.96	27.9	8.9	24.4		BEI15-150-Q48			

# Dual Output

## Asymmetric Isolated DC DC Converter Series



When your application requires multiple positive voltages and you can't easily derive one from the other using a non-isolated PoL, consider an asymmetric dual.

Asymmetric duals are isolated, 2-output DC/DC converters that typically provide two low voltages such as 3.3V and 1.8V. As

such, they are ideal for driving the core and I/O logic of complex PLDs or ASICs. On DSL line cards, they can power both the DSP and the line drivers. In evolving process-control systems, they can power older 5V logic and newer 3.3V micros.

Asymmetric duals provide the real estate

and cost savings of a single package with one set of input circuitry (stand-up caps, filters, etc.). On the output side, many duals feature 2-loop designs that effectively deliver two independently regulated converters in a single package . . . with a standard pinout and internationally recognized safety approvals.

Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style						Package Dimensions						Further Information	
Rated Output Voltages	Rated Output Currents	Total Output Power	Nom.	Min.	Max.			Bricks		SM	TH	DIP	SIP	Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>
								1/8	1/4					1/2	L	W	H	L	W		
5/3.3V	6/7A	33W	12V	10V	18V	1.5kV	86%						2.00	2.00	0.45	50.8	50.8	11.4	BWR-5/6-3.3/7-D12-C	BWR-5/3.3 33W	
			24V	18V	36V	1.5kV	88%							2.00	2.00	0.45	50.8	50.8	11.4		BWR-5/6-3.3/7-D24-C
			48V	36V	75V	1.5kV	88%							2.00	2.00	0.45	50.8	50.8	11.4		BWR-5/6-3.3/7-D48-C
5/5V	0.1/0.1A	1W	5V	4.5V	5.5V	1.0kV	70%						0.39	0.77	0.27	9.8	19.5	6.8	NMD050505DC	NMD	
														0.24	0.77	0.39	6.0	19.5	10.0		NMD050505SC
5/9V	0.1/0.056A	1W	5V	4.5V	5.5V	1.0kV	80%						0.39	0.77	0.27	9.8	19.5	6.8	NMD050509DC	NMD	
														0.24	0.77	0.39	6.0	19.5	10.0		NMD050509SC
			12V	10.8V	13.2V	1.0kV	80%							0.39	0.77	0.27	9.8	19.5	6.8		NMD120509DC
												0.24	0.77	0.39	6.0	19.5	10.0	NMD120509SC			
5/12V	0.1/0.042A	1W	5V	4.5V	5.5V	1.0kV	80%						0.24	0.77	0.39	6.0	19.5	10.0	NMD050512SC	NMD	
			12V	10.8V	13.2V	1.0kV	80%							0.24	0.77	0.39	6.0	19.5	10.0		NMD120512SC
5/15V	0.1/0.034A	1W	5V	4.5V	5.5V	1.0kV	80%						0.24	0.77	0.39	6.0	19.5	10.0	NMD050515SC	NMD	
														0.39	0.77	0.27	9.8	19.5	6.8		NMD120515DC
			12V	10.8V	13.2V	1.0kV	80%							0.24	0.77	0.39	6.0	19.5	10.0		NMD120515SC

# Triple Output

## Isolated DC to DC Converters



Output Characteristics			Input Voltage			Isolation	Efficiency	Package Style						Package Dimensions						Further Information	
Rated Output Voltages	Rated Output Currents	Total Output Power	Nom.	Min.	Max.			Bricks		SM	TH	DIP	SIP	Inches			mm			Part Number <i>Note: Root part numbers may be shown. Please refer to datasheets for available options.</i>	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>
								1/8	1/4					1/2	L	W	H	L	W		
24/48/72V	42/21/14mA	3W	5V	4.5V	5.5V	1.0kV	85%						0.30	0.86	0.44	7.5	21.8	11.1	NMT0572SC	NMT	
			12V	10.8V	13.2V	1.0kV	85%							0.30	0.86	0.44	7.5	21.8	11.1		NMT1272SC

# VRM Processor Support

Powering next generation 32-Bit and 64-Bit processors is becoming more demanding, requiring lower output voltages, higher currents, and higher di/dts.

Our VRM products are designed to meet and exceed the performance demanded

by the next generation processors and are available in a variety of packages for an optimal fit in systems <1U to 2U with innovative open-frame designs that allow for better thermal management in today's system environments.



Output Characteristics				Input Voltage				Package Style										Further Information				
VRM Spec	Thermal Design Current	Max. Output Current	Output Voltage Range (VDC)	Nom.	Min.	Max.	Efficiency	Card Edge	Thru Hole	Height				L	W	H	W	H	Part Number	Datasheet Available at <a href="http://www.murata-ps.com">www.murata-ps.com</a>		
										<1U	1U	1.5U	2U									
Intel® 11.1	80A	70A	0.5-1.6	12	11.04	12.6	87%	•		•				3.66	0.75	0.78	92.96	19.05	19.81	VR111B080CA-C	VR111 Series	
	150A	130A	0.5-1.6	12	11.04	12.6	87%	•			•			3.80	0.87	1.18	96.52	22.10	29.97	VR111B150CU-C		
								•				•			3.80	1.00	1.86	96.52	25.40	47.24		VR111B150CL-C
								•				•			3.80	0.87	2.50	96.52	22.10	63.50		VR111B150CS-C



# Global locations

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- ② Undersea equipment
- ③ Medical equipment
- ④ Traffic signal equipment
- ⑤ Data-processing equipment
- ⑥ Aerospace equipment
- ⑦ Power plant equipment
- ⑧ Transportation equipment (vehicles, trains, ships, etc.)
- ⑨ Disaster prevention / crime prevention equipment
- ⑩ Application of similar complexity and/or reliability requirements to the applications listed above

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