

IDD15U SERIES

DC - DC CONVERTER

13 ~ 15W SINGLE & DUAL OUTPUT



FEATURES

- LOW COST
- 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT Pi FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 2 YEARS WARRANTY
- UL/cUL/TUV/CE

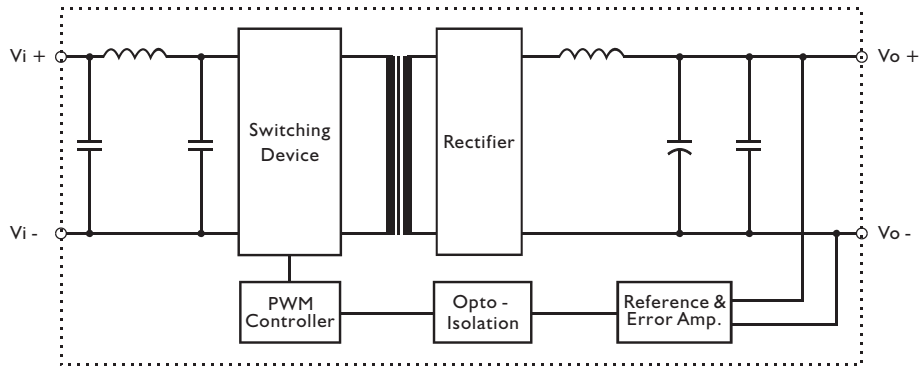
MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
IDD15 - 03S1U	9~18 VDC	13.2 WATTS	+3.3 VDC	4000 mA	82%	80%
IDD15 - 05S1U	9~18 VDC	15 WATTS	+ 5 VDC	3000 mA	84%	82%
IDD15 - 12S1U	9~18 VDC	15 WATTS	+ 12 VDC	1250 mA	87%	85%
IDD15 - 15S1U	9~18 VDC	15 WATTS	+ 15 VDC	1000 mA	89%	87%
IDD15 - 03S2U	18~36 VDC	13.2 WATTS	+3.3 VDC	4000 mA	83%	81%
IDD15 - 05S2U	18~36 VDC	15 WATTS	+ 5 VDC	3000 mA	85%	83%
IDD15 - 12S2U	18~36 VDC	15 WATTS	+ 12 VDC	1250 mA	88%	86%
IDD15 - 15S2U	18~36 VDC	15 WATTS	+ 15 VDC	1000 mA	89%	87%
IDD15 - 03S3U	35~75 VDC	13.2 WATTS	+3.3 VDC	4000 mA	83%	81%
IDD15 - 05S3U	35~75 VDC	15 WATTS	+ 5 VDC	3000 mA	85%	83%
IDD15 - 12S3U	35~75 VDC	15 WATTS	+ 12 VDC	1250 mA	88%	86%
IDD15 - 15S3U	35~75 VDC	15 WATTS	+ 15 VDC	1000 mA	89%	87%
Dual Output Models						
IDD15 - 05D1U	9~18 VDC	15 WATTS	± 5 VDC	± 1500 mA	84%	82%
IDD15 - 12D1U	9~18 VDC	15 WATTS	± 12 VDC	± 630 mA	87%	85%
IDD15 - 15D1U	9~18 VDC	15 WATTS	± 15 VDC	± 500 mA	87%	85%
IDD15 - 05D2U	18~36 VDC	15 WATTS	± 5 VDC	± 1500 mA	86%	84%
IDD15 - 12D2U	18~36 VDC	15 WATTS	± 12 VDC	± 630 mA	88%	86%
IDD15 - 15D2U	18~36 VDC	15 WATTS	± 15 VDC	± 500 mA	89%	87%
IDD15 - 05D3U	35~75 VDC	15 WATTS	± 5 VDC	± 1500 mA	86%	84%
IDD15 - 12D3U	35~75 VDC	15 WATTS	± 12 VDC	± 630 mA	88%	86%
IDD15 - 15D3U	35~75 VDC	15 WATTS	± 15 VDC	± 500 mA	89%	87%

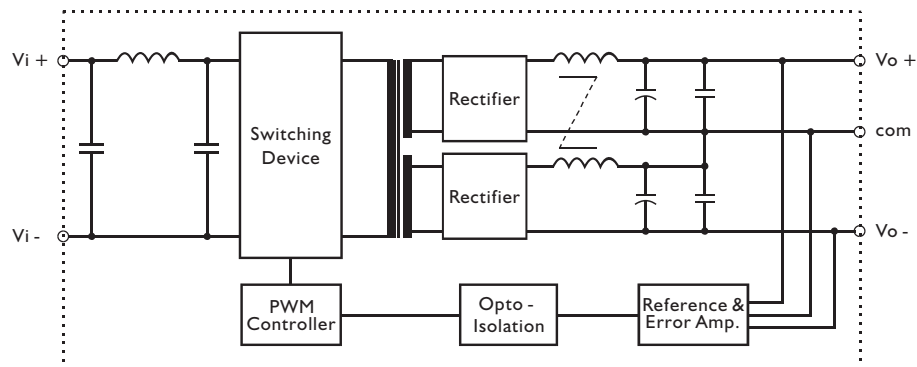


CIRCUIT SCHEMATIC

- Block diagram for IDD15U series with single output



- Block diagram for IDD15U series with dual output



SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL					
Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		200		KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom, Io nom	-40		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 100	°C
Derating	Vi nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L50.8 x W25.4 x H10.16				mm
Cooling	Free air convection				
Case material	Metal				

INPUT SPECIFICATIONS					
Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	Ta min ... Ta max, Io nom	9	12	18	VDC
		18	24	36	VDC
		35	48	75	VDC
No load input current	Vi = nom Io = 0	12V models	25		
		24V models	20		mA
		48V models	15		mA
Input voltage w/o damage	Io nom	12V models		20	
		24V models		40	VDC
		48V models		80	VDC
Startup voltage	Io nom	12V models	8.5		VDC
		24V models	16		VDC
		48V models	33		
Input filter	Pi type				

OUTPUT SPECIFICATIONS					
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom	0			%
		10			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom Io 0 ... Io nom, single output models			± 2	%
	Vi nom, Io min ... Io nom, dual output models			± 5	%
Transient recovery time	25% load, step changed		500		μs
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, 3.3V & 5V model			100	mV
	BW = 20MHz, 12V, 15V & dual			150	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 89%, See model list			

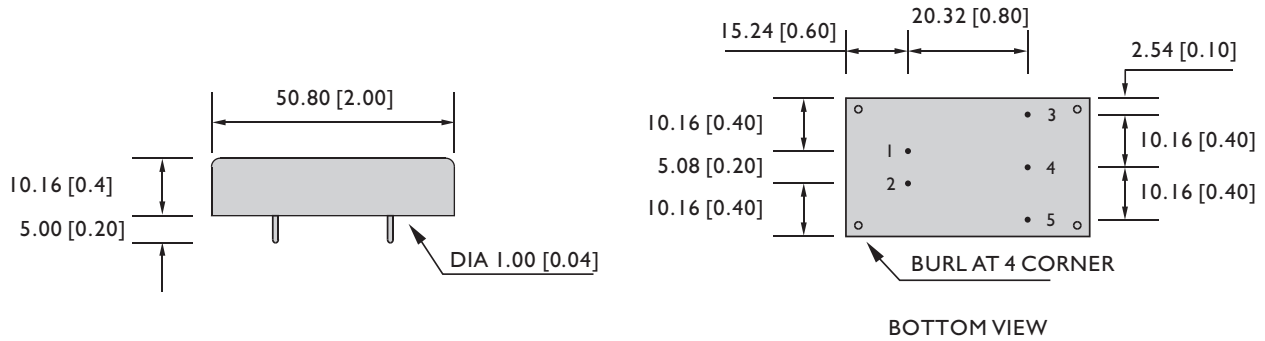
CONTROL AND PROTECTION	
Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

APPROVALS AND STANDARD

UL/cUL	UL60950-1
TUV	EN60950-1
CE	EN61204-3(Class A for EMI)

MECHANISM & PIN CONFIGURATION

mm [inch]



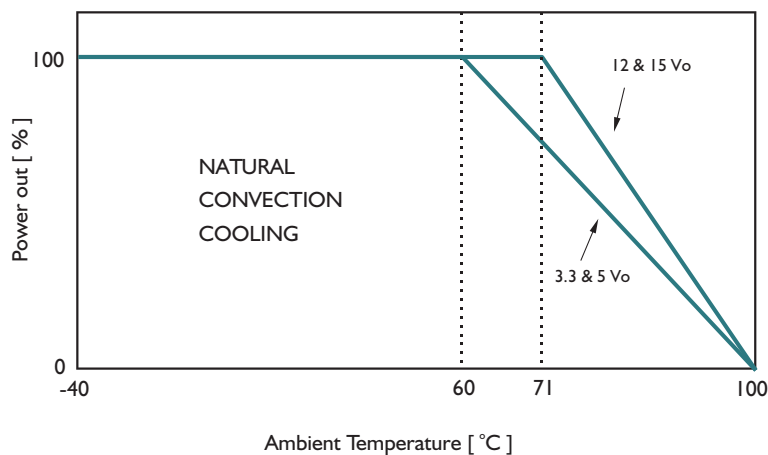
PHYSICAL CHARACTERISTICS

CASE SIZE	50.8 x 25.4 x 10.16 mm 1 x 2 x 0.4 inches
CASE MATERIAL	Metal
WEIGHT	33 g (typ.)

PIN ASSIGNMENT

GENERAL					
PIN NO.	1	2	3	4	5
SINGLE	V_{i+}	V_{i-}	V_{o+}	NO PIN	V_{o-}
DUAL	V_{i+}	V_{i-}	V_{o+}	com	V_{o-}

DERATING



IDD15U SERIES

DC - DC CONVERTER
13 ~ 15W SINGLE & DUAL OUTPUT



FEATURES

- LOW COST
- 4:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT Pi FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 2 YEARS WARRANTY
- UL/cUL/TUV/CE

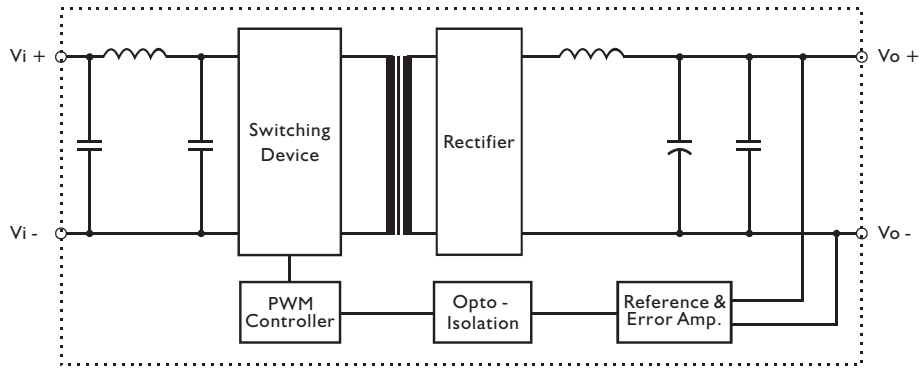
MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
IDD15 - 03S4U	9~36 VDC	13.2WATTS	+3.3 VDC	4000 mA	80%	78%
IDD15 - 05S4U	9~36 VDC	15 WATTS	+ 5 VDC	3000 mA	83%	81%
IDD15 - 12S4U	9~36 VDC	15 WATTS	+ 12 VDC	1250 mA	84%	82%
IDD15 - 15S4U	9~36 VDC	15 WATTS	+ 15 VDC	1000 mA	84%	82%
IDD15 - 03S5U	18~75 VDC	13.2 WATTS	+3.3 VDC	4000 mA	80%	78%
IDD15 - 05S5U	18~75 VDC	15 WATTS	+ 5 VDC	3000 mA	83%	81%
IDD15 - 12S5U	18~75 VDC	15 WATTS	+ 12 VDC	1250 mA	84%	82%
IDD15 - 15S5U	18~75 VDC	15 WATTS	+ 15 VDC	1000 mA	84%	82%
Dual Output Models						
IDD15 - 05D4U	9~36 VDC	15 WATTS	± 5 VDC	1500 mA	82%	80%
IDD15 - 12D4U	9~36 VDC	15 WATTS	± 12 VDC	630 mA	82%	80%
IDD15 - 15D4U	9~36 VDC	15 WATTS	± 15 VDC	500 mA	84%	82%
IDD15 - 05D5U	18~75 VDC	15 WATTS	± 5 VDC	1500 mA	83%	81%
IDD15 - 12D5U	18~75 VDC	15 WATTS	± 12 VDC	630 mA	82%	80%
IDD15 - 15D5U	18~75 VDC	15 WATTS	± 15 VDC	500 mA	83%	81%

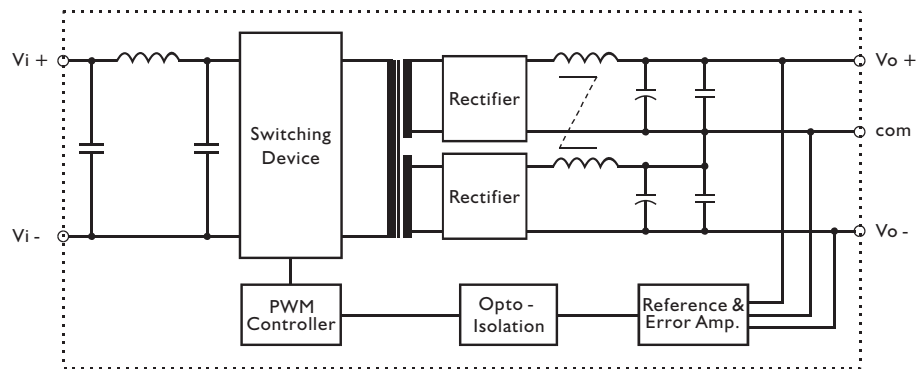


CIRCUIT SCHEMATIC

- Block diagram for IDD15U series with single output



- Block diagram for IDD15U series with dual output



SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		200		KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom, Io nom	-40		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 100	°C
Derating	Vi nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L50.8 x W25.4 x H10.16				mm
Cooling	Free air convection				
Case material	Metal				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	Ta min ... Ta max, Io nom	9	24	36	VDC
		18	48	75	VDC
No load input current	Vi = nom Io = 0	24V models		25	mA
		48V models		15	mA
Input voltage w/o damage	Io nom	24V models		40	VDC
		48V models		80	VDC
Startup voltage	Io nom	24V models	8.5		VDC
		48V models	16		VDC
Input filter	Pi type				

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom sing output models	0			%
	dual output models (each output)	10			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom Io 0 ... Io nom, single output models			± 2	%
	Vi nom, Io min ... Io nom, dual output models			± 5	%
Transient recovery time	25% load, step changed		500		μS
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz	3.3V & 5V model		100	mV
		12V, 15V & dual		150	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 84%, See model list			

CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

IDD15U SERIES

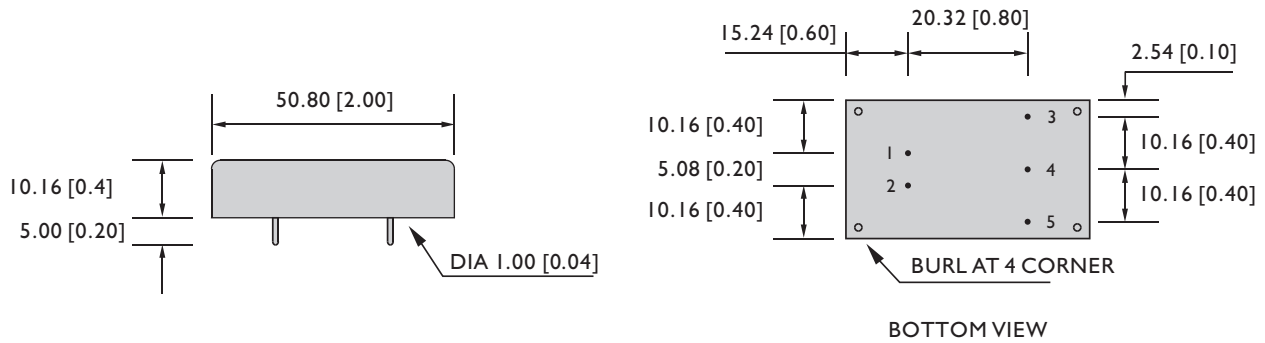
SINGLE & DUAL OUTPUT

APPROVALS AND STANDARD

UL/cUL	UL60950-1
TUV	EN60950-1
CE	EN61204-3(Class A for EMI)

MECHANISM & PIN CONFIGURATION

mm [inch]



PHYSICAL CHARACTERISTICS

CASE SIZE	50.8 x 25.4 x 10.16 mm 2 x 1 x 0.4 inches
CASE MATERIAL	Metal
WEIGHT	33 g (typ.)

PIN ASSIGNMENT

GENERAL

PIN NO.	1	2	3	4	5
SINGLE	Vi+	Vi-	Vo+	NO PIN	Vo-
DUAL	Vi+	Vi-	Vo+	com	Vo-

DERATING

