

IDD10U SERIES

DC - DC CONVERTER
10W SINGLE & DUAL OUTPUT



FEATURES

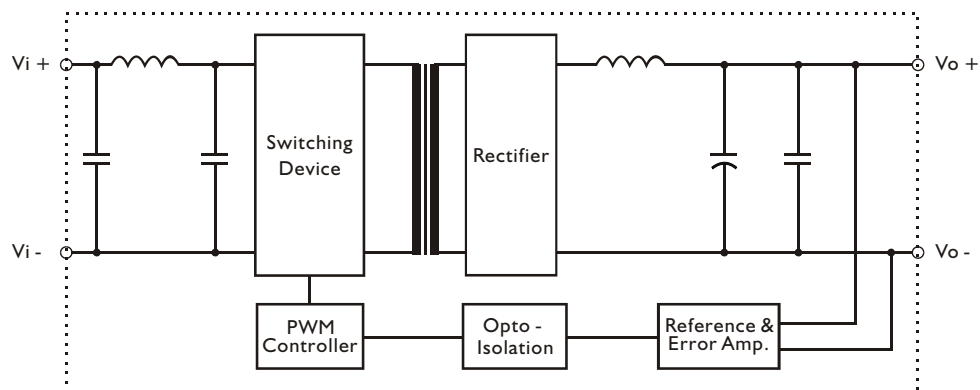
- LOW COST
- 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT P_i FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 2 YEARS WARRANTY
- UL/cUL/TUV/CE

MODEL LIST

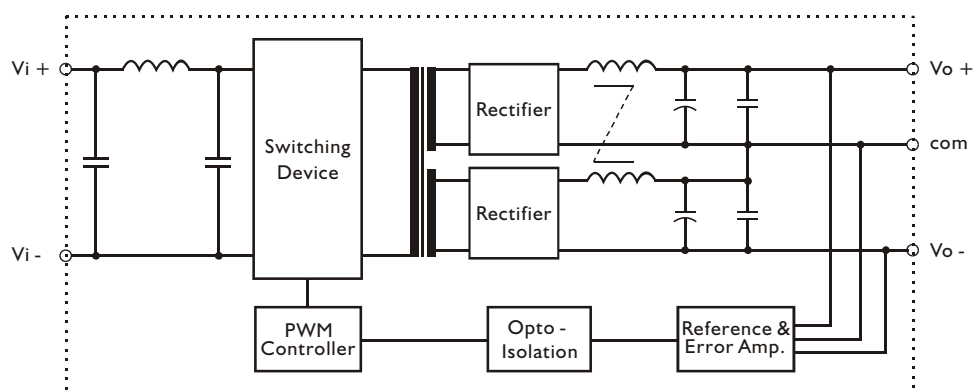
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
IDD10 - 03S1U	9~18 VDC	10 WATTS	+3.3 VDC	3000 mA	83%	81%
IDD10 - 05S1U	9~18 VDC	10 WATTS	+ 5 VDC	2000 mA	85%	83%
IDD10 - 12S1U	9~18 VDC	10 WATTS	+ 12 VDC	830 mA	89%	87%
IDD10 - 15S1U	9~18 VDC	10 WATTS	+ 15 VDC	670 mA	89%	87%
IDD10 - 03S2U	18~36 VDC	10 WATTS	+3.3 VDC	3000 mA	83%	81%
IDD10 - 05S2U	18~36 VDC	10 WATTS	+ 5 VDC	2000 mA	85%	83%
IDD10 - 12S2U	18~36 VDC	10 WATTS	+ 12 VDC	830 mA	89%	87%
IDD10 - 15S2U	18~36 VDC	10 WATTS	+ 15 VDC	670 mA	89%	87%
IDD10 - 03S3U	35~75 VDC	10 WATTS	+3.3 VDC	3000 mA	83%	81%
IDD10 - 05S3U	35~75 VDC	10 WATTS	+ 5 VDC	2000 mA	85%	83%
IDD10 - 12S3U	35~75 VDC	10 WATTS	+ 12 VDC	830 mA	89%	87%
IDD10 - 15S3U	35~75 VDC	10 WATTS	+ 15 VDC	670 mA	89%	87%
Dual Output Models						
IDD10 - 05D1U	9~18 VDC	10 WATTS	± 5 VDC	± 1000 mA	85%	83%
IDD10 - 12D1U	9~18 VDC	10 WATTS	± 12 VDC	± 420 mA	88%	86%
IDD10 - 15D1U	9~18 VDC	10 WATTS	± 15 VDC	± 340 mA	89%	87%
IDD10 - 05D2U	18~36 VDC	10 WATTS	± 5 VDC	± 1000 mA	86%	84%
IDD10 - 12D2U	18~36 VDC	10 WATTS	± 12 VDC	± 420 mA	89%	87%
IDD10 - 15D2U	18~36 VDC	10 WATTS	± 15 VDC	± 340 mA	89%	87%
IDD10 - 05D3U	35~75 VDC	10 WATTS	± 5 VDC	± 1000 mA	86%	84%
IDD10 - 12D3U	35~75 VDC	10 WATTS	± 12 VDC	± 420 mA	89%	87%
IDD10 - 15D3U	35~75 VDC	10 WATTS	± 15 VDC	± 340 mA	89%	87%

CIRCUIT SCHEMATIC

- Block diagram for IDD10U series with single output



- Block diagram for IDD10U 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			%
	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		μ S
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 89%, See model list			

CONTROL AND PROTECTION

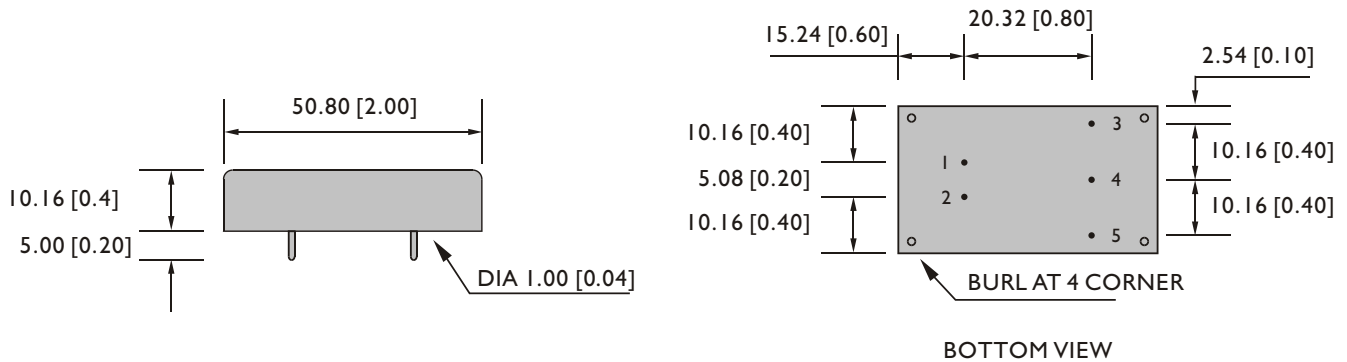
Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

APPROVALS AND STANDARD

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

MECHANISM & PIN CONFIGURATION

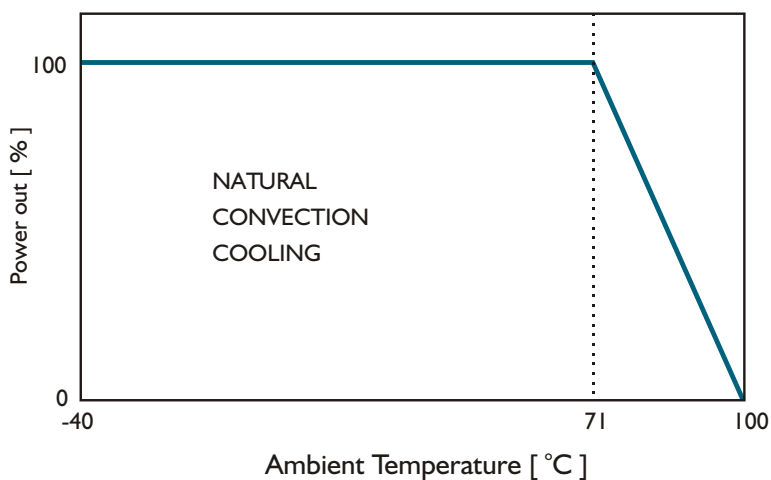
mm [inch]

**PHYSICAL CHARACTERISTICS**

CASE SIZE	50.8 x 25.4 x 10.16 mm 1 x 2 x 0.4 inches
CASE MATERIAL	Metal
WEIGHT	35 g

PIN ASSIGNMENT**GENERAL**

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

DERATING

IDD10U SERIES

DC - DC CONVERTER
10W SINGLE & DUAL OUTPUT



FEATURES

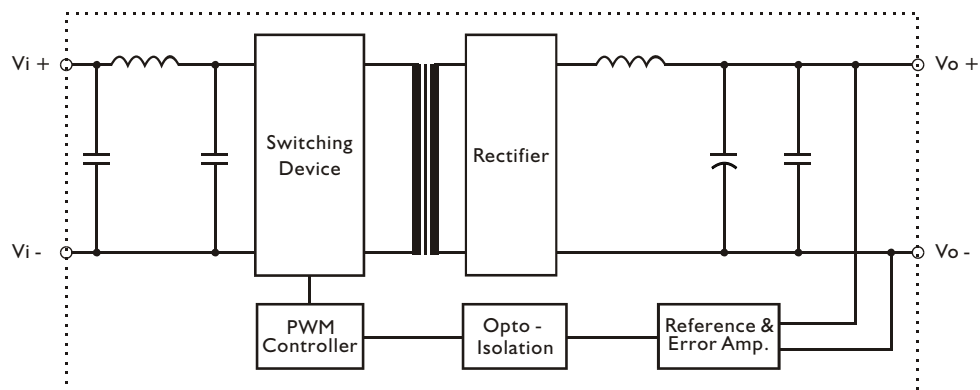
- LOW COST
- 4:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT P_i FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- 2 YEARS WARRANTY
- UL/cUL/TUV/CE

MODEL LIST

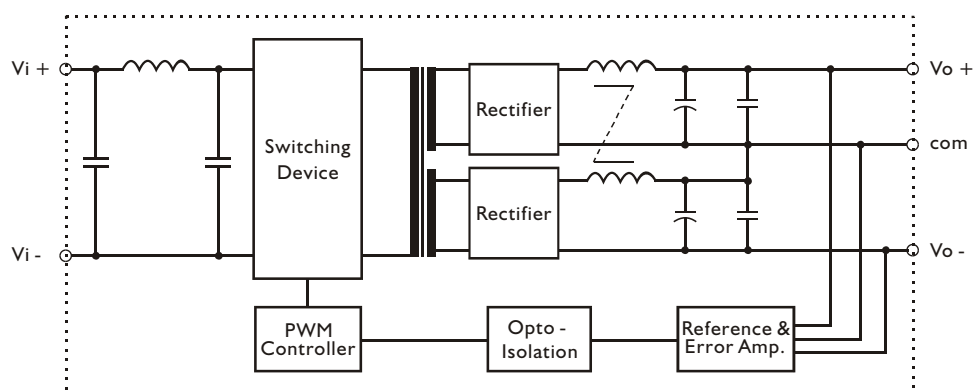
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
IDD10 - 03S4U	9~36 VDC	10 WATTS	+3.3 VDC	3000 mA	80%	78%
IDD10 - 05S4U	9~36 VDC	10 WATTS	+ 5 VDC	2000 mA	82%	80%
IDD10 - 12S4U	9~36 VDC	10 WATTS	+ 12 VDC	830 mA	84%	82%
IDD10 - 15S4U	9~36 VDC	10 WATTS	+ 15 VDC	670 mA	85%	83%
IDD10 - 03S5U	18~75 VDC	10 WATTS	+3.3 VDC	3000 mA	80%	78%
IDD10 - 05S5U	18~75 VDC	10 WATTS	+ 5 VDC	2000 mA	82%	80%
IDD10 - 12S5U	18~75 VDC	10 WATTS	+ 12 VDC	830 mA	84%	82%
IDD10 - 15S5U	18~75 VDC	10 WATTS	+ 15 VDC	670 mA	84%	82%
Dual Output Models						
IDD10 - 05D4U	9~36 VDC	10 WATTS	± 5 VDC	± 1000 mA	82%	80%
IDD10 - 12D4U	9~36 VDC	10 WATTS	± 12 VDC	± 420 mA	82%	80%
IDD10 - 15D4U	9~36 VDC	10 WATTS	± 15 VDC	± 340 mA	84%	82%
IDD10 - 05D5U	18~75 VDC	10 WATTS	± 5 VDC	± 1000 mA	82%	80%
IDD10 - 12D5U	18~75 VDC	10 WATTS	± 12 VDC	± 420 mA	83%	81%
IDD10 - 15D5U	18~75 VDC	10 WATTS	± 15 VDC	± 340 mA	84%	82%

CIRCUIT SCHEMATIC

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- Block diagram for IDD10U 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	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

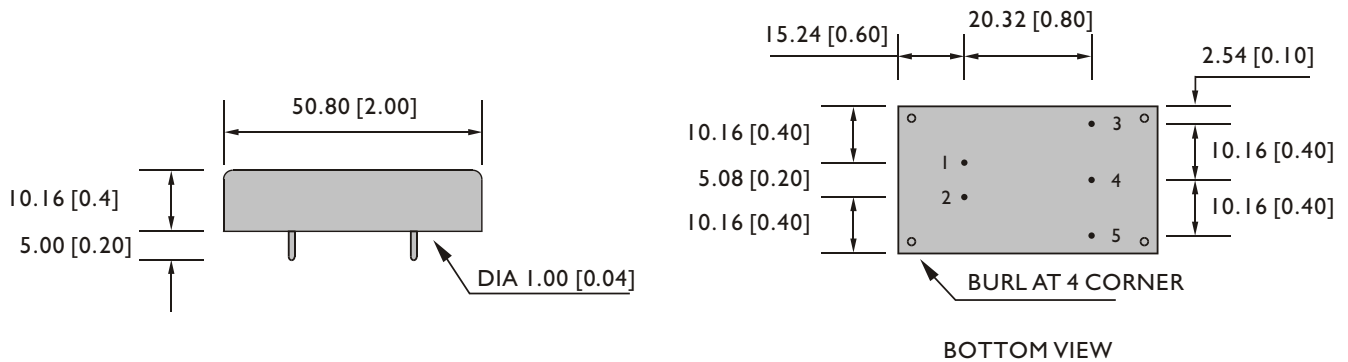
Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

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 × 25.4 × 10.16 mm 2 × 1 × 0.4 inches
CASE MATERIAL	Metal
WEIGHT	35 g

PIN ASSIGMENT**GENERAL**

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

DERATING