MGDK35 35W POWER

BOARD MOUNTED ISOLATED DC/DC CONVERTER

Description

The MGDK35 series features a Quality Cost Effective range of 35W board mounted isolated dc/dc converters. With multiple selection of wide input voltage ranges from 9V up to 140V dc, the MGDK35 is proposed with a **single, symmetrical or triple output channel**. The converter embeds an output overload protection, and comes encapsulated in a low profile fully potted **2.9''x1.9''X0.5''** metallic case.

Fields of Application

- General purpose application
- Transportation
- Telecom
- Renewable Energy



Part-numbering

MGD S K 35 H C

output nb.	Input Voltage range	Output Voltage Range
S = single	H = 9-36	B = 3.3
B = double	O = 18-75	C = 5
T = Triple	Q = 36-140	E = 12
		F = 15

Selection Guide

Part Number	Output Voltage (Vdc)	Output Power (Watt)	Iutput Current (Adc)	Part Number	Output Voltage (Vdc)	Output Power (Watt)	Output Current (Adc)
MGDSK35HB	3.3	23	7	**MGDSK35OC**	5	23	7
MGDSK35HC	5	35	7	**MGDSK35OE**	12	35	7
MGDSK35HE	12	35	2.9	**MGDSK35OF**	15	35	2.9
MGDSK35HF	15	35	2.3	**MGDBK35OC**	+5/-5	35	3.5
MGDBK35HC	+5/-5	35	+/-3.5	**MGDBK35OE**	+12/-12	35	+/-1.45
MGDBK35HE	+12/-12	35	+/-1.45	**MGDTK35OCE**	+5 +/-11.7	35	4 +/-0.625
MGDBK35HF	+15/-15	35	+/-1.15	**MGDTK35OCF**	+5 +/-14.7	35	4 +/-0.5
MGDTK35HCE	+5 +/-11.8	35	4 +/-0.625	**MGDSK35QC**	+5	35	7
MGDTK35HCF	+5 +/-14.7	35	4 +/-0.5	**MGDBK35QE**	+12/-12	35	+/-1.45

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1-ELECTRICAL SPECIFICATIONS

Data are valid at +25°C, unless otherwise specified

Specification

Parameter	Conditions	Limit	Units	**H** input	**O** input	**Q** input
INPUT						
Nominal Input Voltage (Ui nom)	Full temperature range	Nominal	Vdc	20	28	72
Transient Input Voltage	Full temperature range	Maximum	Vdc/s	36	75	175/0.1
Start-up input voltage Turn on /turn off	Full temperature range	Typical	Vdc	8.8/8	15.8/14	33/30
Start-up time	Full temperature range	Maximum	ms		30	
Power efficiency	Ui Nominal 75% load	Typical	%	83	84	85
No load input power	(hic-up mode)	Maximum	mW	300	500	800
OUTPUT						
Set Point accuracy	Ui nom @75% load	Maximum	%	+/- 2.5		
Output regulation (Line)	25% to full load	Maximum	%	+/- 1.5		
Output regulation (Load)	Ui min. To Ui max 25% to full load 0% to 25% load	Maximum Typical	%	+/- 2.5 +15 to +/-2.5		
Cross Load Output regulation	Vout1 @75% load Vout2@25% load		%	+/- 0.5		
Output ripple voltage B & C output (3V3) (5V) E & F output (12V) (15V)	Ui min. To Ui max	Maximum	mVpp	150 300		
Admissible capacitor B & C output E & F output	Ui min. Full load (per output)	Maximum	µF	2200 330		
MISCELLANEOUS						
Switching Frequency		Typical	Khz	250		
Output Trim Range		Min.Max.	%	+/-5		
Isolation Strength (Input output)	Ui min. To Ui max		Vdc	1500		
EMC Compliance	With input capacitor With input filter			EN555032 class A EN555032 class B		

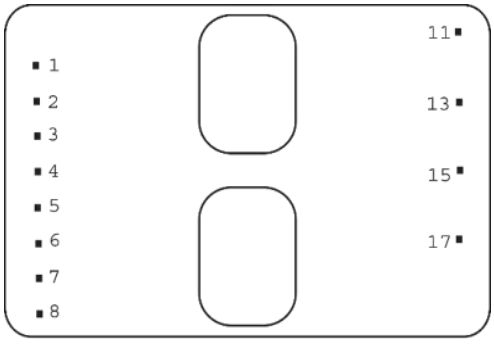
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2-THERMAL & MECHANICAL SPECIFICATIONS

Parameter	Conditions	Limit	Units	Parameter
Case temperature range		Mini.Max.	°C	-40 to 95
Storage temperature range	Not operating	Mini.Max.	°C	110
Case Material	Regular model		Metallic black anodized coated	
Pin Material			Copper plated with pure matte tin over nickel underplate	
Case to Air thermal resistance		Typical	°C/W	7

Connections

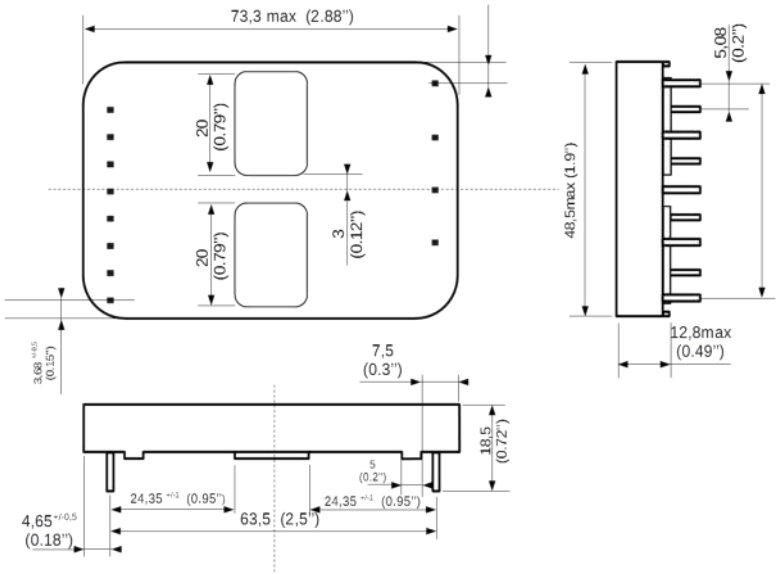
Pin#	MGDSK35 (Single)	MGDBK35 (Double)	MGDTK35 (Triple)
1	Do not Connect	Do not Connect	Do not Connect
2	-Input (Gi)	-Input (Gi)	-Input (Gi)
3	Do not Connect	Do not Connect	Do not Connect
4	+Input (Vi)	+Input (Vi)	+Input (Vi)
5	Trim	Trim	Trim
6	Do not Connect	Do not Connect	Do not Connect
7	Vref	Do not Connect	Do not Connect
8	On/Off	Vref	Vref
11	Do not Connect	Output-(-Vo)	Output2- (-Vo2)
13	Do not Connect	Do not Connect	Output2+ (+Vo2)
15	Common (Go)	Common (Go)	Common (Go)
17	Output (Vo)	Output (Vo)	Output1 (Vo1)



Bottom view

Dimensions MGDK35

Dimensions are given in mm (inches) . Tolerance : +/-0.25mm (0.01'') unless otherwise specified
weight : < 80gr (2.8oz) max.

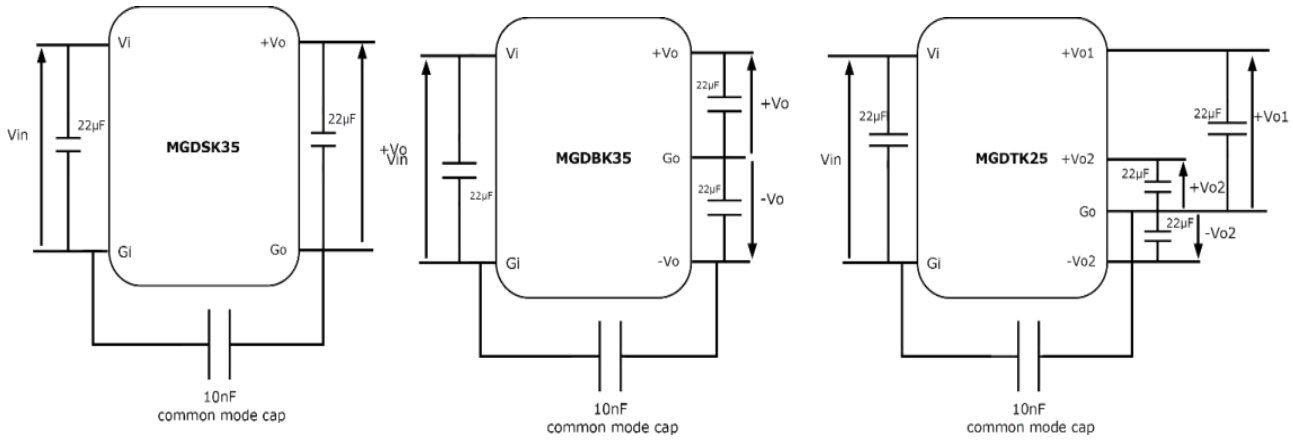


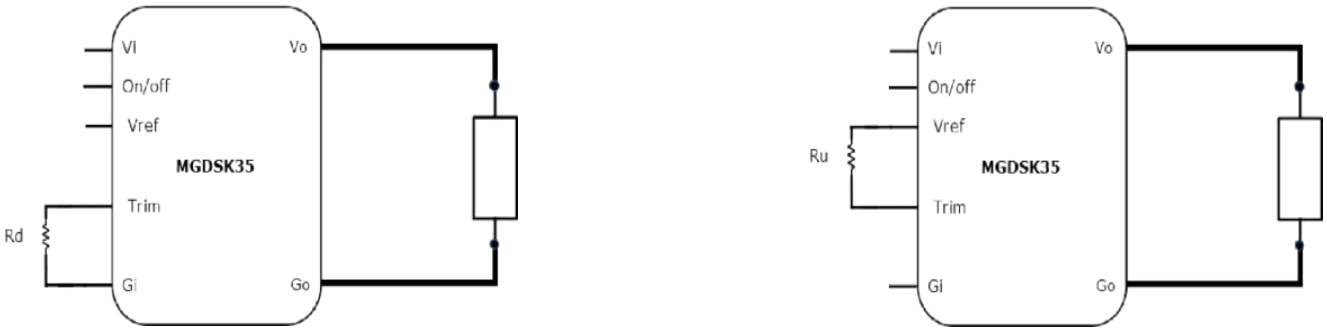
Pin dimensions : ☐ 0,91 mm(0.036")

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3-APPLICATION

Typical connections





Trim down

Trim up

TRIM FUNCTION:

TRIM UP Function:

The Module can be trimmed up using a resistor connected across Trim pin and Vref. pin, the ressitor value can be evaluatedusing the following formula:

$$\mathrm{Ru} = 12.\frac{\frac{Vo}{2.Vonom} - 1}{1 - \frac{Vo}{Vonom}} - 47$$

With Ru: resistor value in KΩ
Vo: desired voltage
Vonom: nominal voltage

TRIM Down Function:

The Module can be trimmed down using a resistor connected across Trim pin and Go pin, the ressitor value can be evaluatedusing the following formula:

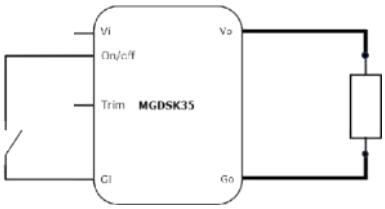
$$\mathrm{Ru} = 12.\frac{\frac{Vo}{Vonom}}{2.(1 - \frac{Vonom}{Vo})} - 47$$

With Ru: resistor value in KΩ
Vo: desired voltage
Vonom: nominal voltage

3-APPLICATION

ON OFF FUNCTION:

The converter is naturally enabled as far as the on/off pin remains unconnected. To disable the converter the pin on/off should be shorted to Go using a switch, an open collector or open drain transistor. Several converters of the same input bus can be remotely controlled by the same signal just by connecting all the pins on/off together.



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