

PHI-CON

1.6W Gate Drive DC-DC Converter P2AGDC-Series

- SIL7 Package
- Single / dual output
- 3000 Vrms isolation
- -40...105°C operating temperature range
- Efficiency up to 80 %
- Low couple I/O capacitance



Model guide

Type designation	Input voltage range [V _{DC}]	+ Output				- Output				Input current		Efficiency [%]	Capacitive load max. [μF]
		Voltage			Current max. [mA]	Voltage			Current max. [mA]	@ no load min. [mA]	@ full load max. [mA]		
		min. [V _{DC}]	nom. [V _{DC}]	max. [V _{DC}]		min. [V _{DC}]	nom. [V _{DC}]	max. [V _{DC}]					
P2AGDC12-1509	11.6...12.4	14	15	16	80	-7	-8.7	-10	-40	20	162	80	220
P2AGDC12-1508	9...15	14	15	16	100	-7	-8	-9	-80	20	223	80	220
P2AGDC15-09	14.5...15.5	8	9	10	111	-	-	-	-	20	84	80	220
P2AGDC15-0909	14.5...15.5	8	9	10	55	-8	-9	-10	-55	20	84	80	220
P2AGDC15-1509	14.5...15.5	14	15	16	80	-7	-8.7	-10	-40	20	130	80	220
P2AGDC15-1709	14.5...15.5	16.5	17	18	80	-7	-8.7	-10	-40	20	143	80	220
P2AGDC24-1509	23.3...24.7	14	15	16	80	-7	-8.7	-10	-40	20	81	80	220

Specifications

Input / output:	
Isolation voltage 50 / 60Hz sine wave <1mA, 1min.	3 kVrms
Isolation Resistance @ 500 V _{DC}	10 ⁹ Ω min.
Capacitance (@100 kHz, 0.1V)	6.6 pF, typ.
Output	
Output voltage drift	± 1.5 % max. @ 1% V _{in} change
Temperature coefficient	0.03 % / °C max., at full load
Ripple & noise (BW 30 MHz) see figure 1	100 mVp-p typ., 200 mVp-p max.
Short circuit duration	Continuous, automatic restart
Physical	
Switching frequency	100 kHz, typ., 300 kHz, max.
Package material	Epoxy resin (UL94-V0)
Weight	4.3 g
Reliability, MTBF (MIL-HDBK-217 @ 25 °C)	3.5 Mio. hours

Environmental		
EMI CE & RE (with external filter circuit, see figure 1)	CISPR22 / EN55022 CLASS B	
EMS, ESD	IEC-, EN61000-4-2, contact ± 8 kV perf. criteria B	
Operating temperature (ambient)	-40 °C to +105 °C	
Storage temperature	-55 °C to +125 °C	
Case temperature rise at Ta 25°C and full load	25 °C	
Humidity	Up to 95 %, non-condensing	
Cooling	Free-air convection	
Absolute maximum ratings		
Vin max.	P2AGDC12-1509	-0.7 ~ 13 V _{DC}
	P2AGDC12-1508	-0.7 ~ 15 V _{DC}
	P2AGDC15-xxxx	-0.7 ~ 16 V _{DC}
	P2AGDC24-1509	-0.7 ~ 26 V _{DC}
Lead soldering temperature 1.5 mm distance from body	300 °C max. 10 s	

Note:

1. The wire between converter and IGBT driver should be so short as possible.
2. External filter capacitors must be placed so near as possible to converter and IGBT driver.
3. The average power of the IGBT driver must be less than the output power of the DC-DC converter.
4. For vibration and shock critical applications is it recommended to fix the converter with glue.
5. The maximum capacitive load is tested at nominal input voltage and full load.
6. Unless otherwise noted, all specifications are measured at Ta 25 °C, humidity <75 %, nominal input voltage and rated output load.
7. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more detail.
8. Please contact our technical support for any specific requirement.
9. Specifications of this product are subject to changes without prior notice.
10. These products have no overload protection. Protection with a fuse is the simplest method.
11. It is not recommended to increase the output power capability by connecting two or more converters in parallel operation.
12. The converters are not hot-swappable

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Test circuit

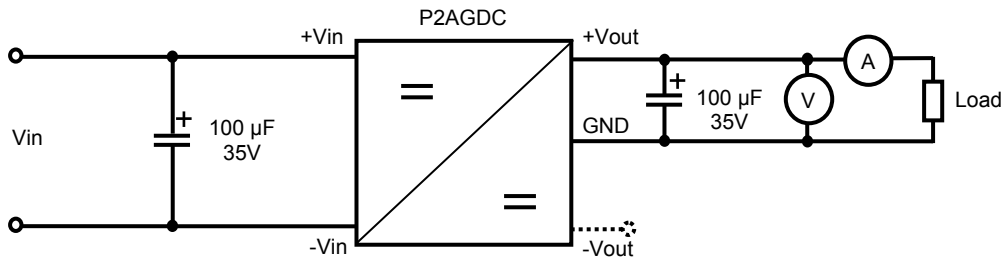
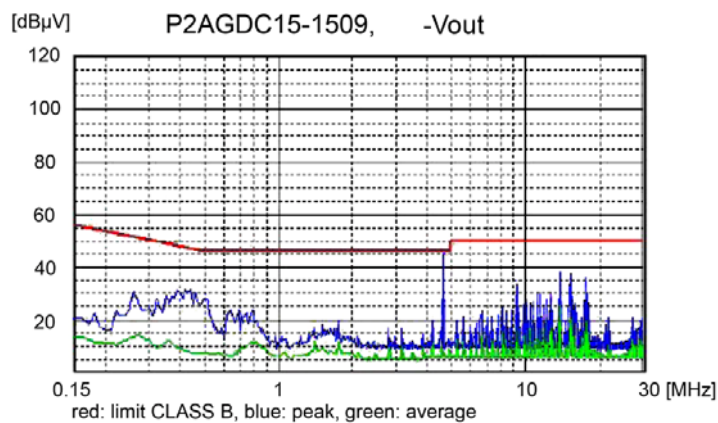
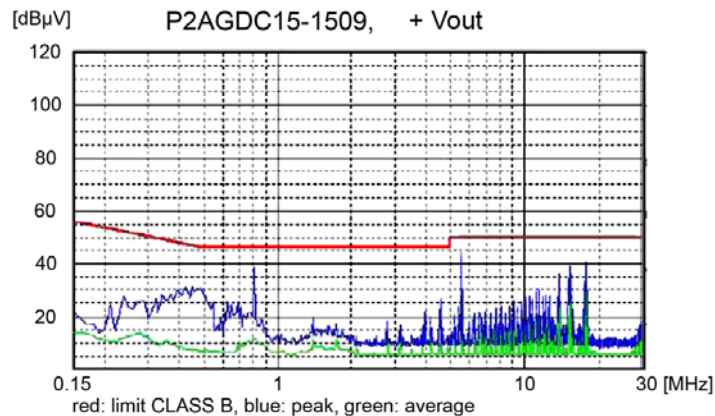
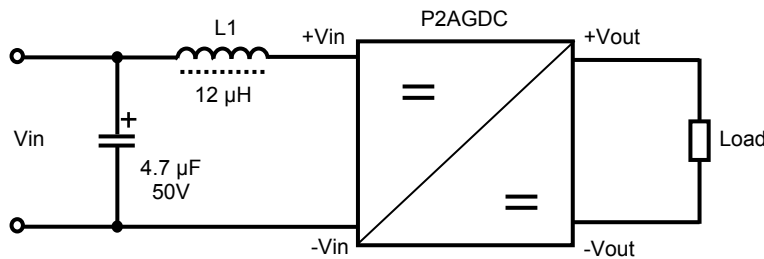


Figure 1

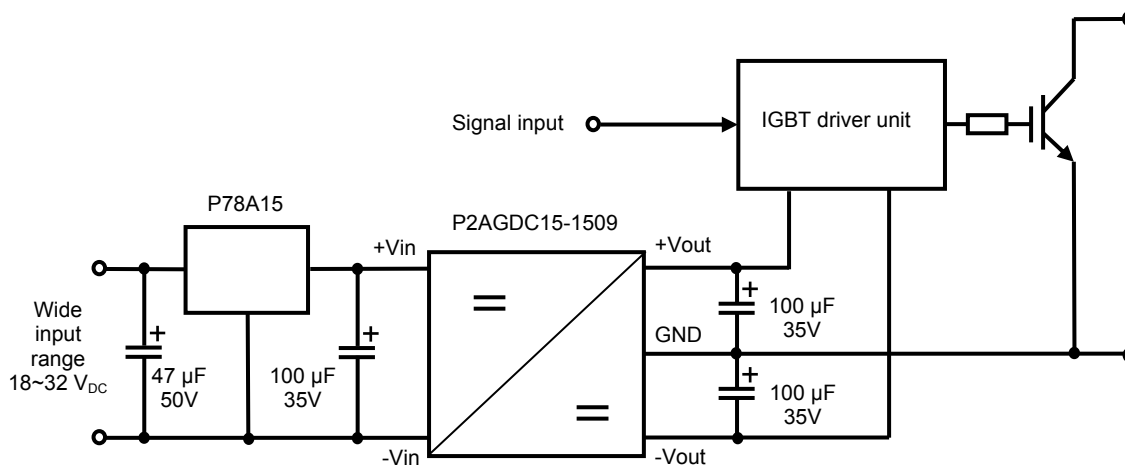
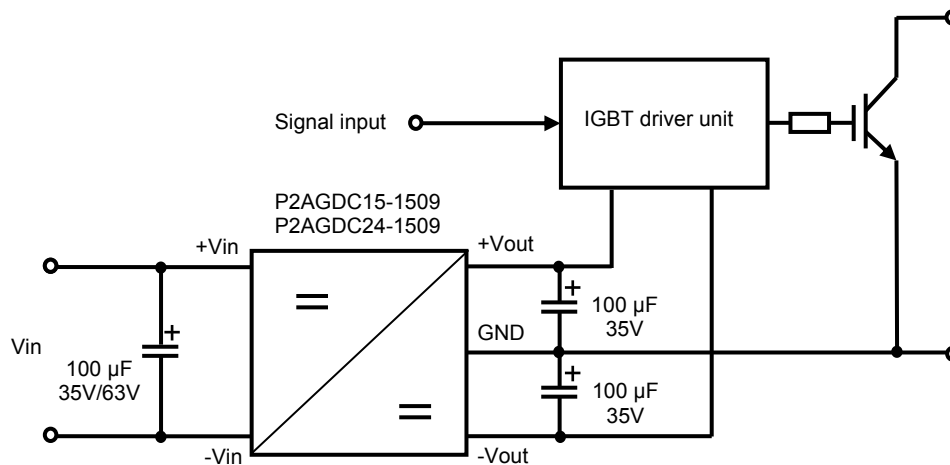
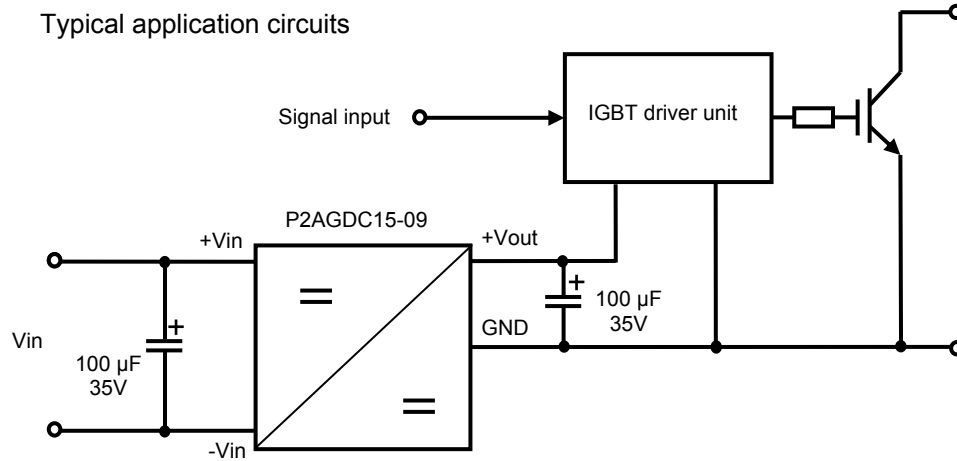
Recommended circuit for EMI „CLASS B”



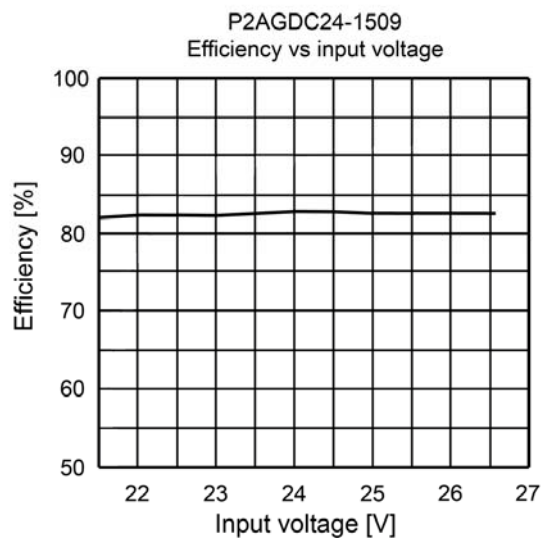
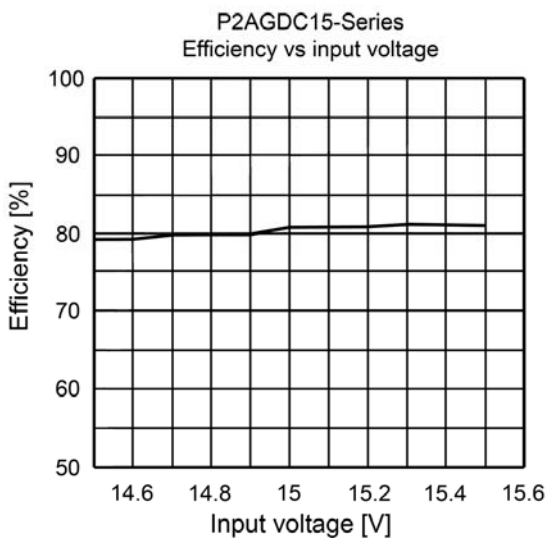
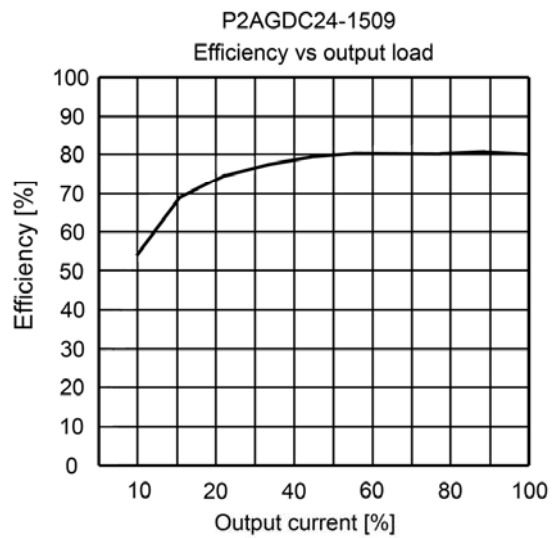
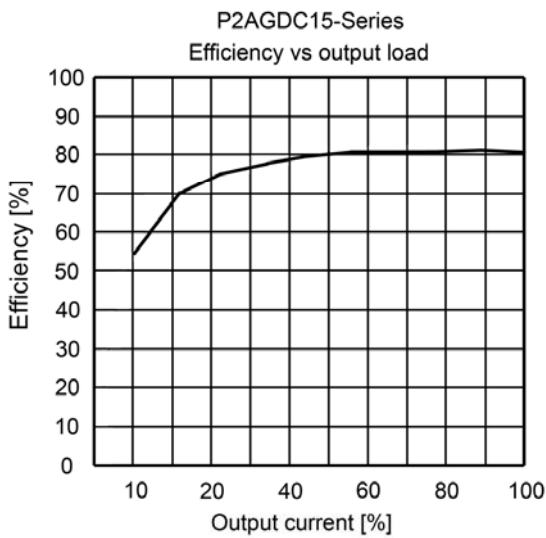
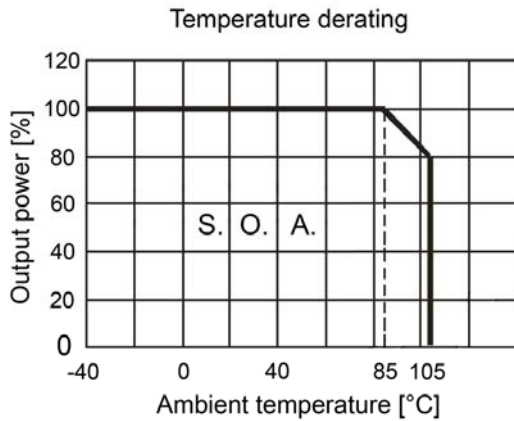
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Typical application circuits

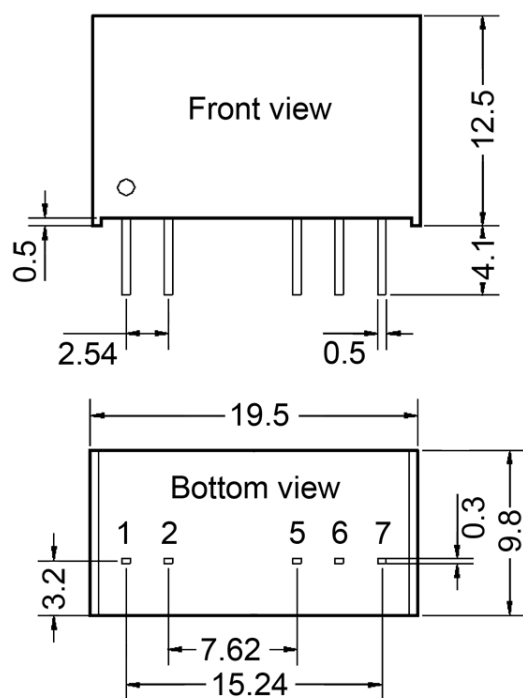


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Dimensions



Unit: mm

Pin tolerances ± 0.1 mm

General tolerances ± 0.5 mm

Pin	All others	P2AGDC15-09
1	+ Vinput	+ Vinput
2	- Vinput	- Vinput
3	Omitted	Omitted
4	Omitted	Omitted
5	- Voutput	Not connect
6	common output	- Voutput
7	+ Voutput	+ Voutput

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