

P(C)26NG-xxxxE/Z2:1LF



PMB-SERIES

Rev.07-2015

- ✓ 6 Watt
- ✓ 2:1 Wide Input
- ✓ **Single and Dual Reg. Output**
- ✓ **1.5 kV DC I/O Isolation**
- ✓ **SIP8 case**
- ✓ **On/Off Control (optional)**
- ✓ **Contin. Short Circuit Protection**

The PMB series is a family of cost effective 6W single and dual output DC/DC converters with an optional control Pin. These converters are in an ultra-miniature SIP8 plastic case. Devices are encapsulated using flame retardant resin. High performance features include continuous / long time short circuit protection with automatic restart and tight line / load regulation. High performance features include high efficiency operation and output voltage accuracy of $\pm 1\%$ maximum. PMB-Series is a good substitution of traditional DC/DC converters 6W in DIP24 package.

All specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified

Input Specifications

Voltage Range	2:1 Wide Input (see table)
Input Filter	Capacitors
Input Reflected Ripple Current ¹	30 mA pk-pk
Start up time (Nominal V_{in} and constant resistive load)	30mS, typ.

Output Specifications

Voltage Accuracy	$\pm 1\%$
Short Circuit Protection	Continuous (Automatic Recovery)
Line Regulation	$\pm 0.2\%$, max.
Load Regulation (0% - 100%)	$\pm 1\%$, max.
Cross Regulation (Dual Output) ²	$\pm 5\%$
Ripple and Noise (20Mhz bandwidth) ³	75 mV pk-pk
Temperature Coefficient	$\pm 0.02\% / ^\circ\text{C}$
Transient Recovery Time ⁴	500us, typ.
Transient Response Deviation ⁴	$\pm 3\%$, max. $\pm 5\%$, max (at 3.3V & 5V output)

General Specifications

I/O Isolation Voltage (60 sec.)	1500 VDC
I/O Isolation Capacity	50 pF, max.
I/O Isolation Resistance	1000 MOhm
Switching Frequency	100 kHz, min.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 770 Khrs

Physical Specifications

Case Material	Non Conductive Black Plastic
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 4.8g, typ.

Environment Specifications

Operating Temperature	-40 to +65°C (ambient)
Maximum Case Temperature	105°C
Storage Temperature	-55 to +125°C
Cooling	Free Air Convection
RoHS Conform	Soldering 260°C, max. (1.5mm from case 10s.)

PMB-Series – P(C)26NG-xxxxE/Z2:1LF – Single / Dual Output – SIP8 - Plastic Case

Specification can change without a notice – We accept no liability for any inaccuracy or printing errors.

Selection Guide

Single and Dual Output

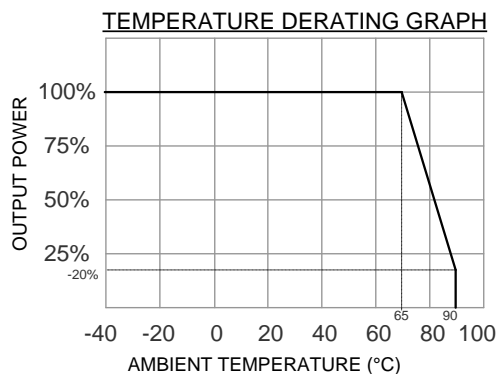
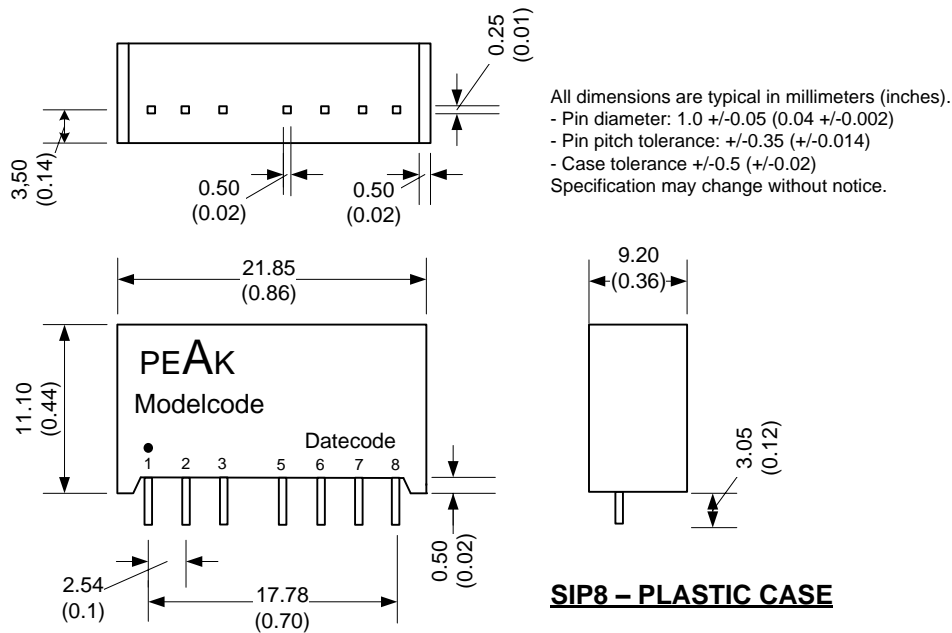
Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) 5
SINGLE OUTPUT								
P26NG-053R3E2:1LF	4.5-9	105	1144	3.3	0	1300	75	6600
P26NG-0505E2:1LF	4.5-9	105	1519	5	0	1200	78	3300
P26NG-0509E2:1LF	4.5-9	105	1445	9	0	666	83	2000
P26NG-0512E2:1LF	4.5-9	105	1428	12	0	500	84	1600
P26NG-0515E2:1LF	4.5-9	105	1428	15	0	400	84	1400
P26NG-0524E2:1LF	4.5-9	105	1428	24	0	250	84	680
P26NG-123R3E2:1LF	9-18	55	470	3.3	0	1300	76	6600
P26NG-1205E2:1LF	9-18	55	602	5	0	1200	83	3300
P26NG-1209E2:1LF	9-18	55	595	9	0	666	84	2000
P26NG-1212E2:1LF	9-18	55	588	12	0	500	85	1600
P26NG-1215E2:1LF	9-18	55	588	15	0	400	85	1400
P26NG-1224E2:1LF	9-18	55	581	24	0	250	86	680
P26NG-243R3E2:1LF	18-36	30	229	3.3	0	1300	78	6600
P26NG-2405E2:1LF	18-36	30	301	5	0	1200	83	3300
P26NG-2409E2:1LF	18-36	30	294	9	0	666	85	2000
P26NG-2412E2:1LF	18-36	30	294	12	0	500	85	1600
P26NG-2415E2:1LF	18-36	30	287	15	0	400	87	1400
P26NG-2424E2:1LF	18-36	30	287	24	0	250	87	680
P26NG-483R3E2:1LF	36-72	15	117	3.3	0	1300	76	6600
P26NG-4805E2:1LF	36-72	15	156	5	0	1200	80	3300
P26NG-4809E2:1LF	36-72	15	147	9	0	666	85	2000
P26NG-4812E2:1LF	36-72	15	149	12	0	500	84	1600
P26NG-4815E2:1LF	36-72	15	145	15	0	400	86	1400
P26NG-4824E2:1LF	36-72	15	148	24	0	250	84	680

DUAL OUTPUT								
P26NG-0505Z2:1LF	4.5-9	105	1481	± 5	0	± 600	81	± 2000
P26NG-0512Z2:1LF	4.5-9	105	1428	± 12	0	± 250	84	± 900
P26NG-0515Z2:1LF	4.5-9	105	1428	± 15	0	± 200	84	± 660
P26NG-1205Z2:1LF	9-18	55	609	± 5	0	± 600	82	± 2000
P26NG-1212Z2:1LF	9-18	55	595	± 12	0	± 250	84	± 900
P26NG-1215Z2:1LF	9-18	55	581	± 15	0	± 200	86	± 660
P26NG-2405Z2:1LF	18-36	20	304	± 5	0	± 600	82	± 2000
P26NG-2412Z2:1LF	18-36	20	297	± 12	0	± 250	84	± 900
P26NG-2415Z2:1LF	18-36	20	297	± 15	0	± 200	84	± 660
P26NG-4805Z2:1LF	36-72	15	152	± 5	0	± 600	82	± 2000
P26NG-4812Z2:1LF	36-72	15	147	± 12	0	± 250	85	± 900
P26NG-4815Z2:1LF	36-72	15	147	± 15	0	± 200	85	± 660

If you need other specifications, please enquire.

For optional Control Pin, please add “C” between P and 26
For example: PC26NG-2405Z2:1LF

Package / Pinning / Derating



PIN CONNECTIONS				
#	SINGLE	DUAL	SINGLE "C"	DUAL "C"
1	- Vin	- Vin	- Vin	- Vin
2	+Vin	+Vin	+Vin	+Vin
3	Omitted	N.C.	Ctrl.	Ctrl.
5	Omitted	N.C.	N.C.	N.C.
6	+Vout	+Vout	+Vout	+Vout
7	- Vout	Common	- Vout	Common
8	N.C.	- Vout	N.C.	- Vout

App Notes:

- ¹ = Measured Input reflected ripple current with a simulated source inductance of 12uH and source capacitor Cin (47uF, ESR<10hm at 100KHz)
- ² = One load is 25% to 100%, the other load is 100% load, the output voltage variable is within ±5%
- ³ = Measured with a 0.1uF ceramic capacitor
- ⁴ = Tested by normal Vin and 100%-25% load, 25% load step change
- ⁵ = Tested by minimal Vin and constant resistive load

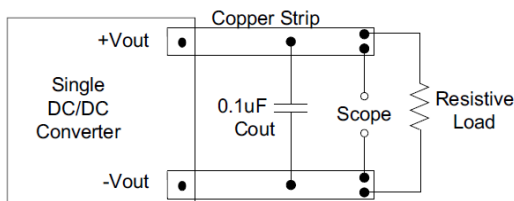
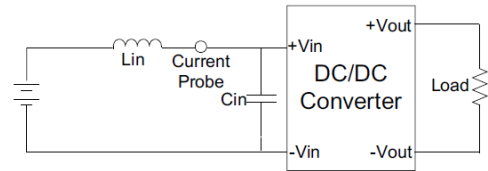
Operation at no-load conditions will not damage these devices, however they may not meet all specifications.

App Notes

Test Configurations

Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor L_{in} (12uH) and a source capacitor C_{in} (47uF, ESR < 1.0Ω at 100KHz) at nominal input and full load.

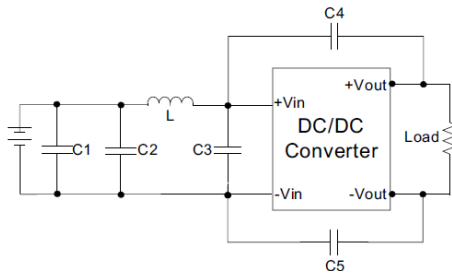


Output Ripple & Noise Measurement Test

Use a capacitor C_{out} (0.1uF) measurement. The Scope measurement bandwidth is 0-20MHz.

EMI Filter

Input filter components ($C1, C2, C3, C4, C5, L$) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



	C1	C2 & C3	L	C4 & C5
P26NG-05xxE/Z2:1LF	Electrolytic capacitor 220uF/100V	MLCC 22uF/25V	10uH	MLCC 220pF/3KV
P26NG-12xxE/Z2:1LF	-	MLCC 10uF/50V	10uH	MLCC 220pF/3KV
P26NG-24xxE/Z2:1LF	-	MLCC 10uF/50V	10uH	MLCC 220pF/3KV
P26NG-48xxE/Z2:1LF	-	MLCC 2.2uF/100V	10uH	MLCC 220pF/3KV

EMC Specifications

Test Type	Standard	Requirement	Notes
Radiated Emissions	EN55022	Class A	
Conducted Emissions	EN55022	Class A	Input filter components are required to help meeting conducted emission class A, which application refer to the EMI Filter of design & feature configuration.
ESD	IEC 61000-4-2	Perf. Criteria A	
RS	IEC 61000-4-3	Perf. Criteria A	
EFT	IEC 61000-4-4	Perf. Criteria A	
Surge	IEC 61000-4-5	Perf. Criteria A	An external filter capacitor is required if the module has to meet IEC61000-4-4 and IEC61000-4-5.
CS	IEC 61000-4-6	Perf. Criteria A	
PFMF	IEC 61000-4-8	Perf. Criteria A	

The Remote on/off control:

ON: open or high impedance
 OFF: 2 – 4 mA input current (via 1kOhm)
 Off stand by input current (Nominal Vin): 2.5mA