

**PRODUCT PROGRAM**

Order code	Input		Output			Efficiency (% Typ)	Switching Frequency (KHz, Typ)
	Voltage(VDC)		Voltage (VDC)	Current			
	Nominal	Range		Max	Min		
H0505XVD	5	4.5-5.5	5	200	20	70	UL
H0509XVD			9	111	12	72	UL
H0512XVD			12	84	9	73	UL
H0515XVD			15	67	7	74	UL
G0505XVD			±5	±100	±10	70	UL
G0509XVD			±9	±56	±6	71	UL
G0512XVD			±12	±42	±5	72	UL
G0515XVD			±15	±33	±4	73	UL
H1205XVD	12	10.8-13.2	5	200	20	70	UL
H1209XVD			9	111	12	71	UL
H1212XVD			12	84	9	72	UL
H1215XVD			15	67	7	74	UL
G1205XVD			±5	±100	±10	70	UL
G1209XVD			±9	±56	±6	71	UL
G1212XVD			±12	±42	±5	72	UL
G1215XVD			±15	±33	±4	75	UL

① ② ③ ④ ⑤ ⑥

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed Input
- ⑤ Footprint Rank Shape
- ⑥ DIP24 Package

### OUTPUT SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Output power		0.1		1	W
Line regulation	For Vin change of 1%			±1.2	%
Load regulation	10% to 100% load 5V output		10	15	
	10% to 100% load 9V output		8.3	15	
	10% to 100% load 12V output		6.8	15	
	10% to 100% load 15V output		6.3	15	
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load			0.03	%/°C
Ripple & Noise*	20MHz Bandwidth		150	200	mVp-p
Switching frequency	Full load nominal input	5V input	250		KHz
		12V input	50		

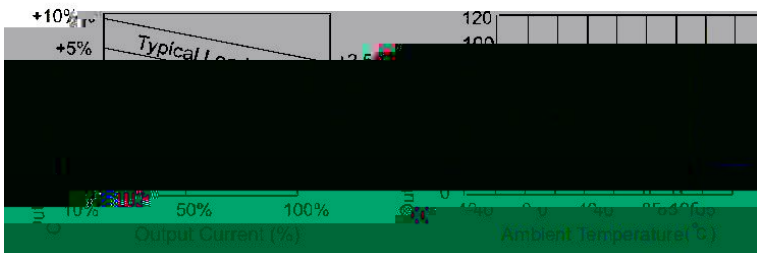
\*Test ripple and noise by "parallel cable" method.

See detailed operation instructions at Testing of Power Converter section, application notes.

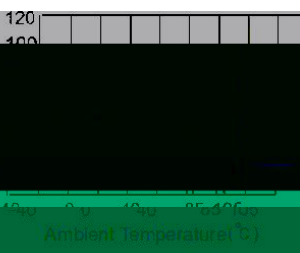
Note: Dual output models unbalanced load: ±5%.

### TYPICAL CHARACTERISTICS

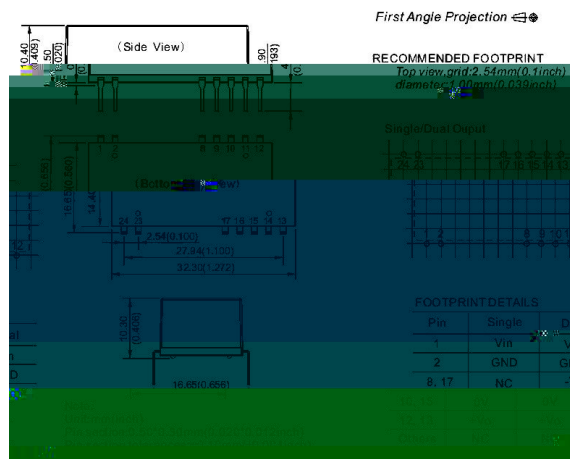
Tolerance Envelope Graph



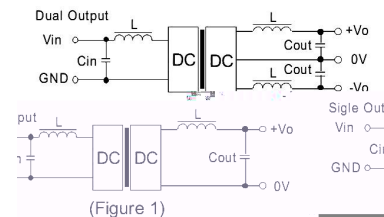
Temperature Derating Graph



### OUTLINE DIMENSIONS & PIN CONNECTIONS



If you want to further decrease the input/output ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, see (Figure 1).



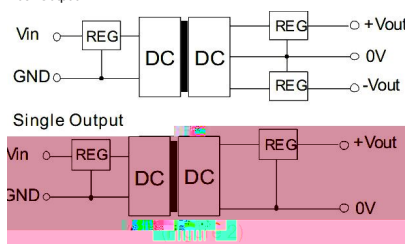
It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (Table 1).

EXTERNAL CAPACITOR TABLE (Table 1)

Vin (VDC)	Cin (uF)	Single Vout (VDC)	Cout (uF)	Dual Vout (VDC)	Cout (uF)
5	4.7	5	10	±5	4.7
12	2.2	9	4.7	±9	2.2
24	1	12	2.2	±12	1
-	-	15	1	±15	1

It not recommend to connect any external capacitor in the application field with less than 0.5 watt output.

The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series (Figure 2).



Under normal operating conditions, the output circuit of these products has no protection against overload. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

Note:

1. All specifications measured at Ta=25, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. Only typical models listed, other models may be different, please contact our technical person for more details.
3. Operation under minimum load will not damage the converter, However, they may not meet all specification listed.