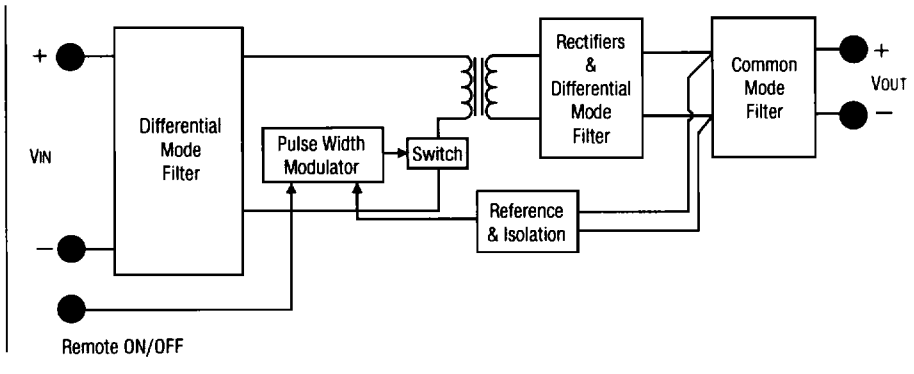


Regulated Ethernet DC/DC Converters

Schematic Drawings



Regulated DC/DC Converters Selection Guide

Part Number	Input Voltage	Remote On/Off On Level	Pin #	Package Pin DIL
PM6044	5	LO	3	24
PM6045	5	N/A	N/A	4
PM6079	5	HI	22	24
PM6030	12	N/A	N/A	24
PM6042	12	LO	3	24
PM6046	12	N/A	N/A	4
PM6077*	12	HI	3*	24

* Does not follow industry standard pin out, as logic HI remote ON/OFF is normally interfaced through pin 22. Pins 3 and 22 should be jumpered on the PCB to allow more flexibility with other units (e.g. PM7225).

Compatibility with Unregulated DC/DC Converters

If the application does not require maintenance of the 9V output within $\pm 5\%$ under all normal operating conditions, or in all variations of the application board, Valor pin-compatible unregulated converters are available as listed in the following table.

Unregulated DC/DC Converters Compatibility Guide

Regulated	Unregulated	Pin Out •
PM6030	PM7205	Compatible
PM6042	PM7215	Compatible
PM6044	PM7213	Compatible
PM6077	PM7225	Jumper pin 3 to 22
PM6079	PM7223	Compatible

* Allow for the presence of redundant output pins 10 and 11 on the unregulated parts.

Valor's DC/DC converters for regulated Ethernet applications are specifically designed to power Ethernet transceiver chips. Regulation of these parts ensures that the output voltage is held comfortably within $9V \pm 5\%$ across the full specified input voltage and output current ranges.

These converters utilize pulse width modulation (PWM) in a forward converter topology. An input choke reduces reflected differential input noise while a common mode choke in the output improves common mode rejection of noise generated by the converter, adapter card and host PC.

Features:

- ALL PWM REGULATED MODELS
- EXCELLENT FIELD HISTORY
- 2000VAC ISOLATION STANDARD IN ALL MODELS
- REMOTE ON/OFF ON MOST MODELS
- LEAD TRIM ELIMINATES NEED FOR POST-SOLDER TRIMMING



VALOS047

Regulated Ethernet DC/DC Converters

Application Information

Each of these converters will maintain the output voltage at 9V $\pm 5\%$ under all combinations of the specified input voltage range and output loading conditions. The Remote ON/OFF function allows the converter to be turned on and off with a TTL logic signal (CMOS compatible). These converters are self-standing and do not require external capacitors in normal applications. However, installation of a good high frequency bypass capacitor near the transceiver chip is recommended to reduce the effects of the dynamic 10 MHz currents in the PCB traces.

Controller Chip Compatibility

AMD's PC-Net series of controllers and Intel's 82595 controller interface directly with any of the Valor converters listed in the product selection guide that are ON with a LO logic signal on the Remote ON/OFF pin. National Semiconductor's AT/LANTIC™ chip interfaces directly with a HI logic signal. In these applications the converter is turned on only when the controller chip determines that the board is connected to a 10Base-2 coaxial cable.

Regulated Ethernet DC/DC Converters

Input Specifications

Parameter	Model	Conditions	Min	Typ	Max	Units
Input Voltage Range	5V input	I _{OUT} = 80mA ~ 225mA V _{IN} = 4.5		5.0	5.5	Vdc
	12V input	I _{OUT} = 80mA ~ 225mA V _{IN} = 10.2		12.0	15.75	Vdc
Input Current	5V input	I _{OUT} = 225mA, V _{IN} = 4.5V			700	mA
	12V input	I _{OUT} = 225mA, V _{IN} = 10.2V			330	mA

Output Specifications

Parameter	Model	Conditions	Min	Typ	Max	Units
Output Voltage	All	V _{IN} : min ~ max I _{OUT} = 80mA ~ 225mA	8.55	9.0	9.45	V
Output Current	All	V _{IN} : min ~ max, cont., 0 ~ 70°C	80		225	mA
		V _{IN} : min ~ max, 1min, 0 ~ 70°C			250	mA
Ripple and Noise	5V input	20MHz BW, full load		60	150	mVpp
	12V input	20MHz BW, full load		60	100	mVpp
Remote ON/OFF	PM6042/44	Pin 3 voltage for ON (0mA)	-0.6		0.8	Vdc
		Pin 3 voltage for OFF (0.2mA @ 5V)	2.0		15	Vdc
	PM6077	Pin 3 voltage for On (0.2mA @ 5V)	2.0		15	Vdc
		Pin 3 voltage for OFF (0mA)	-0.6		0.8	Vdc
PM6079	Pin 22 voltage for On (0.2mA @ 5V)	2.0		7.0	Vdc	
	Pin 22 voltage for OFF (0mA)	-0.6		0.8	Vdc	
Temperature Coefficient	All	0 ~ 70°C			±.05	%/°C
Overloads	All	Continuous	275			mA
Short Circuit	All		Mom			

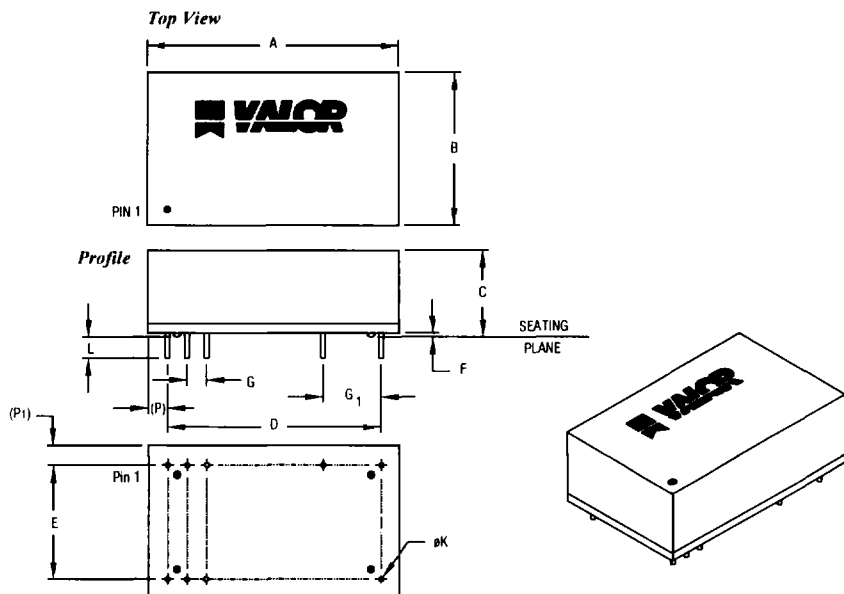
General Specifications

Parameter	Model	Conditions	Min	Typ	Max	Units
Efficiency	5V input	V _{IN} = 5.0V, I _{OUT} = 225mA	65	68		%
	12V input	V _{IN} = 12.0V, I _{OUT} = 225mA	66	69		%
Input/Output Isolation Voltage	All		2000			Vac
Switching Frequency	All			525		kHz
Failures in Time (FIT)	All	Demonstrated, I _{OUT} = 225mA, T _A = 40°C, Failures per 10 ⁹ unit hours		587		FIT

Environmental Specifications

Parameter	Model	Conditions	Min	Typ	Max	Units
Operating Temperature Range	All		0		70	°C
Storage Temperature Range	All		-55		105	°C
Humidity	All	Non-condensing	5		95	%R.H.
ESD	All	Mil-Std-883, Method 3015.7	Class 3			

Regulated Ethernet DC/DC Converters



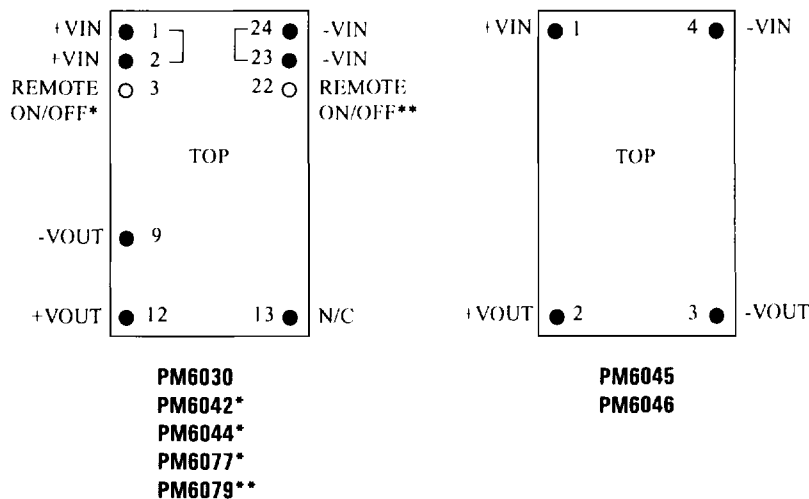
NOTES:

Black plastic case, self-extinguishing
(per UL94V-0)

Leads: solderability per MIL-STD-202,
Method 208

Leads Straightness: $\pm .008$ inches from
perpendicular

Pin Designations



Physical Dimensions

Dim	Inches		Millimeters	
	Min	Max	Min	Max
A	1.280	1.300	32.51	33.02
B	.780	.800	19.81	20.32
C	.455	.475	11.56	12.07
D	1.095	1.105	27.81	28.07
E	.595	.605	15.11	15.37
F	.015	.025	.38	.64
G	.095	.105	2.41	2.67
G ₁	.295	.305	7.49	7.75
øK	.020	.030	.51	.76
L	.105	.115	2.67	2.92
(P)	.075	.115	1.91	2.92
(P1)	.080	.120	2.03	3.05



Valor Electronics, Inc.
A GTI Company

NORTH AMERICA 9715 Business Park Avenue San Diego, CA 92131-1642 tel 800.31-VALOR fax 619.537.2525

ASIA Flat B, 7/F., K.K. Industrial Building 5 Mok Cheong Street Tokwawan, Kowloon, Hong Kong tel 852.2333.0127 fax 852.2363.6206

EUROPE Steinstraße 68, 81667 München Germany tel 49.89.4587040 fax 49.89.484743