

# Statronics Power Supplies

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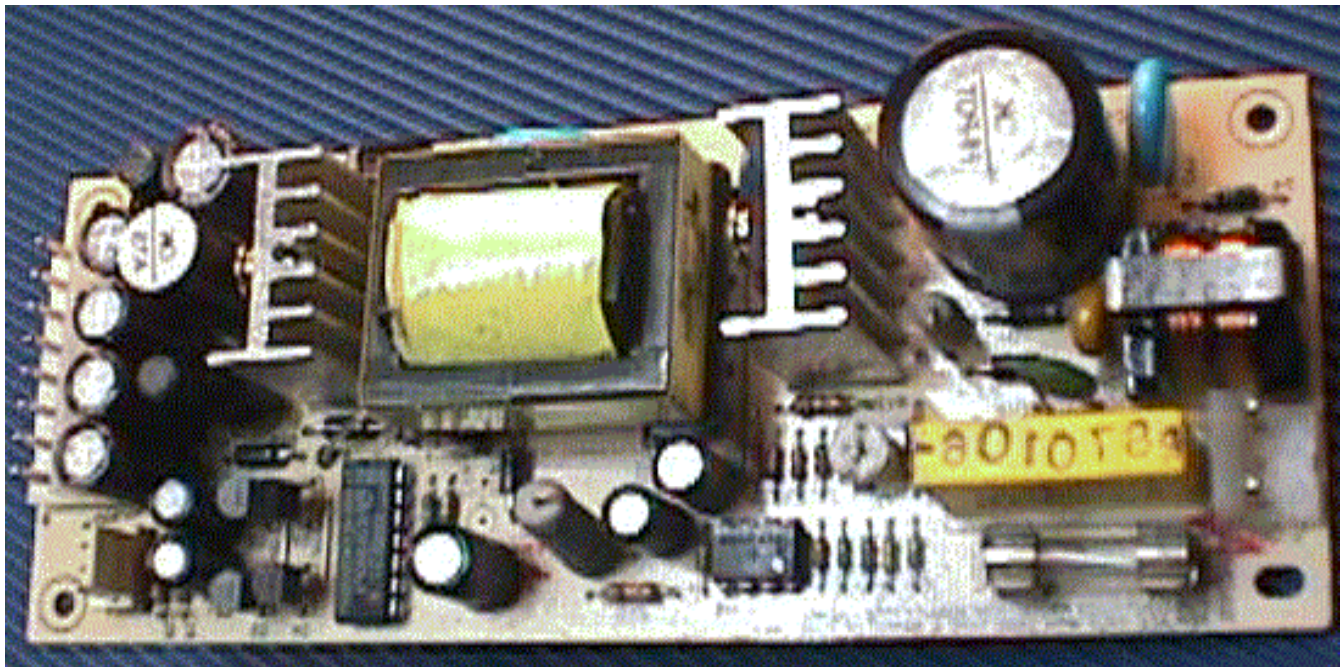
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**DVD, VCD, XVD POWER SUPPLY  
MODEL X35Q323**



## FEATURES

- Compact, Small Size
- Low Weight
- Low Cost
- Universal Input Voltage
- Supports Vacuum Fluorescent Displays
- High Efficiency
- Low Noise
- Low Power Dissipation
- Excellent tolerance to poor Line (mains) power quality

X35Q323 is the smallest, lightest full-range switch mode power supply available today for powering all voltage rails required by DVD's, etc. The small dimensions enable reduction in package size and cost, yielding improved product appearance. The low weight enables reduction in package strength and weight, again providing cost savings in production, packaging and freight, and the lighter-weight end product will have more market appeal.

The very wide input voltage range, and compliance with all relevant international and national Safety and EMC standards, enables sale of the same product into any world market, simplifying inventory management and providing better economies of scale. The product housing is simplified by needing to accommodate only one type of power supply. Use of an IEC entry and clever instructions will make the product truly multi-national, just like those of the largest multi-national consumer product manufacturers like Sony, Matsushita, Philips.

A further advantage of the wide input voltage range is tolerance to poor line power quality. High voltages up to 270V RMS (that can be seen in rural Australia, where the nominal voltage is 240V) and sags to 90V RMS, are all taken in its stride. Brownouts (loss of a cycle or two of mains due to the switch-on surge of large nearby equipment) cause no effect on the outputs. The DVD will continue to function normally, with no damage and no skipping.

This power supply has very high efficiency, regardless of the input line voltage. So heat generated in the product case is considerably reduced. Again, this can provide opportunities for the product designer to implement changes to provide more market appeal, and reduces the aging of components inside the product.

All the power rails needed to operate a DVD or other products using a vacuum fluorescent display are provided, including biased bipolar VFD filament drive, and plenty of 5V and ±12V power. All outputs are very well filtered to meet DVD chipset noise requirements, so no additional filtering is necessary. The end product circuit can usually be simplified because all these outputs and controls are built into the power supply.

Input line filtering, output filtering, and radiated noise have been reduced to a level such that a properly laid out complete product will easily meet the most demanding of the international EMC standards to class A.

This power supply is, of course, not as inexpensive as a linear power supply, but the savings possible as outlined above, and increased product performance and appeal, when carefully analyzed, will justify the slightly increased raw component cost. Compared to other switch mode designs, this product is more economical because it is produced in much larger volumes, as a result of it suiting a number of manufacturers of quite a large range of products.

## PRODUCTION SPECIFICATIONS X35Q323 POWER SUPPLY

### DESCRIPTION:

Current mode controlled flyback switchmode power supply, open board style, “full-range” (90 – 270V AC) input.

### OUTPUTS: (Table 1.)

No.	Output Voltage	Minimum Load (2)	Maximum Load (3)	Total Band Regulation	Ripple and Noise (1)
V1	+5V	0.5A	2.5A	±5%	80mV
V2	+12V	0.1A	1A	±5%	120mV
V3	-12V	0A	0.3A	±5%	120mV
V4	-25V	0A	0.1A	±5%	200mV
V5	3.5Vrms C.T & biased	0A	170mA	±5%	N/A

### NOTES TO TABLE 1:

- Output Ripple and Noise:** This measurement should be made at the output connector; using a differential technique at CMRR greater than 10,000 to 1, from 10Hz to 100kHz bandwidth; outputs to be bypassed at the connector with a 0.1µF ceramic X7R dielectric disk capacitor to simulate system loading.
- Minimum Load** is the minimum for which the outputs remain within the “total regulation” limits tabulated for all input within the input range and all mixes of load on other outputs within the limits of “minimum load regulated”, “surge load” and maximum total power.
- Total output power:** 30W Max.

### **INPUT:**

<b>Input Voltage:</b>	90-270 V AC, 40W, 47-440 Hz (Or 100-380V DC)
<b>Input Current:</b>	Steady state: 0.4 A at 240Vac input 1A Maximum
<b>Inrush Current (cold start):</b>	30A at 115V, 60A at 230V
<b>Recommended Fuse:</b>	2A (F) 250Vac, 20x5mm

### **GENERAL:**

<b>Start-up time:</b>	100mS to 800mS (from application of mains power)
<b>Hold-up time:</b>	16mS min. at 115V AC, full load.
<b>Rise time:</b>	20mS max at full load
<b>Temperature Coefficient:</b>	any change in output voltage due to warm-up drift and ambient 0°C to 45°C does not exceed regulation limit.
<b>Efficiency:</b>	75% min. at full load
<b>No Load Consumption:</b>	1.7W at 110V, 2.9W at 230V input.
<b>Overload protection:</b>	105% to 180% of Max. load.
<b>Cooling:</b>	By natural convection.
<b>Safety:</b>	Designed to comply with UL1950 Third Edition, CSA 22.2 No 234 M39 IEC 950 AMDt 2 1993
<b>EMC:</b>	IEC 801-2, -3, -4 EN55 022 Class A EN 60 555-2 Class A (Conducted)

### **ENVIRONMENT:**

<b>Operation Temperature:</b>	0°C to 45°C
<b>Storage Temperature:</b>	-10°C to 80°C
<b>Relative humidity:</b>	8% to 80% Non-condensing
<b>Shipping and Storage:</b>	-20°C to 85°C, relative humidity: 5% to 95%
<b>Storage duration:</b>	6 Months maximum recommended.
<b>Altitude (operation):</b>	7000 feet maximum recommended.

### **PROTECTION:**

<b>No Load:</b>	Under no load operation, the power supply causes no damage or hazard. No minimum load is required.
<b>Over Power:</b>	Total power 100% to 130% of rating with shut-down, automatic re-start on removal of overload.

### **MECHANICAL:**

<b>Dimensions:</b>	150 x 60 x 29mm. Mounting holes 140 x 50 mm.
<b>Weight:</b>	166 grams.
<b>Shipping Weight:</b>	175 grams approximately.
<b>Connections:</b>	Molex style locking headers for input and outputs.