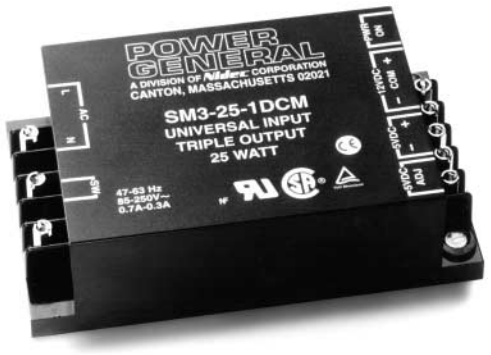
25W

Switching Power Supply Modules

- ✔ Single and Triple Output Models
- ✔ 85-265 VAC Universal Input Voltage Range
- ✔ Pin-Mount and Chassis-Mount Packages
- ✔ *CE* Mark: UL/CSA/EN60950 Approvals
- ✔ FCC Class A Input Line Filter
- ✔ 0% Minimum Load Requirement
- ✔ Over-Current/Short-Circuit Protection
- ✔ 2-Year Warranty
- ✔ Minimum 165,000-Hour MTBF



Characteristics

AC Input	Universal input voltage range 85-265 VAC single phase or 118-370 VDC.
Input Line Frequency	47-440 Hz (50/60 Hz, nominal).
Input Line Protection	Input line fuse provided. (Note 1.)
EMI Filter	Standard. Meets conducted EMI requirements of FCC Class A.
DC Output	See table.
Continuous Output Power	25W, maximum (see Note 10).
Output Voltage Adjust	Chassis-mount models only: Primary output adjustable ±3%; auxiliary outputs fixed. See Note 10.
Efficiency	60%,minimum (115 or 230 VAC input, full load conditions).
Hold-Up Time	16 ms (115 VAC input), 32 ms (230 VAC input), minimum, nominal load.
Overload Protection	Power-limit circuit.
Short-Circuit Protection	Continuous.
Over-Voltage Protection	Primary output (V1), 120% of rated output voltage, typical.
Soft Start	Standard on all models. Prevents output overshoot and power transformer saturation at turn-on.
Design Topology	Flyback converter with current-mode control.
Frequency of Operation	65 kHz (fixed).
Electrical Strength/Isolation	5300 VDC, input-to-output for one minute.
Noise, Ripple and Spike	1% peak-to-peak, max. (Note 3.)
Power-Fail Warning	Optional—chassis-mount, single output, 5V model only: TTL-compatible (logic 1, 4 ms, minimum, before loss of output). To specify the power-fail option, add the letter "P" to the model number suffix.
Temperature Range	-20°C to +70°C.
Output Power De-Rating	De-rate output power and current linearly 2%/°C from +50°C to +70°C.
Temperature Coefficient	±0.05%/°C over the entire operating temperature range.
Relative Humidity	0 to 95%, non-condensing.
Altitude	0 to 10,000 feet.
Cooling	Convection cooling is adequate. When operating in a confined area, moving air is recommended.
Storage Temperature	-40°C to +85°C.
Storage Humidity	0 to 95%, non-condensing.
Mean Time Between Failures	>165,000 hours. (Note 4.)

Model	Output Voltage Output	(V)	Output Current Min. (A)	Nom. (A)	Max. (A)	Output Voltage Tol.	Line Reg.	Load Reg.	Cross-Reg.
AC-DC Singles						Chassis-Mount: 85-265 VAC Input			
SM1-25-1DCM	V1	5	0.00	5.00	5.00	1.0%	0.1%	0.4%	—
SM1-25-3DCM	V1	12	0.00	2.10	2.10	1.0%	0.1%	0.4%	—
AC-DC Singles						Pin-Mount: 85-265 VAC Input			
SM1-25-1DPM	V1	5	0.00	5.00	5.00	1.0%	0.1%	0.4%	—
SM1-25-3DPM	V1	12	0.00	2.10	2.10	1.0%	0.1%	0.4%	—
AC-DC Triples						Chassis-Mount: 85-265 VAC Input			
	V1	+5	0.00	4.00	4.00	1.0%	0.1%	0.5%	—
SM3-25-1DCM	V2	+12	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V3	- 12	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V1	+5	0.00	3.80	4.00	1.0%	0.1%	0.5%	—
SM3-25-2DCM	V2	+15	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V3	- 15	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
AC-DC Triples						Pin-Mount: 85-265 VAC Input			
	V1	+5	0.00	4.00	4.00	1.0%	0.1%	0.5%	—
SM3-25-1DPM	V2	+12	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V3	- 12	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V1	+5	0.00	3.80	4.00	1.0%	0.1%	0.5%	—
SM3-25-2DPM	V2	+15	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%
	V3	- 15	0.00	0.20	0.30	4.0%	0.1%	0.3%	0.1%

Notes

1. An external input line fuse is optional: Use a 2A/250V slow-blow fuse.
2. All measurements are made directly at the terminals of the supply.
3. Peak-to-peak and RMS metering equipment must have a 20 MHz frequency response with probes and cables that maintain a frequency response of 20 Hz to 20 MHz. Output ripple and spikes are measured directly at the output terminals of the power supply with a 0.1 µF ceramic capacitor. The probe ground band must make contact with the output return or common terminal to prevent erroneous noise measurements.
4. MTBF is calculated using the parts stress method in MIL-HDBK 217F (ground benign, T_A = +25°C).
5. Output voltage tolerance is measured under nominal load conditions.
6. Line regulation is measured under nominal load conditions as the input voltage is varied from 85 to 265 VAC.
7. Load regulation is measured at 115 VAC or 230 VAC. The output under test is brought to 60% of nominal load; load current is then varied ±40% of nominal while other outputs are held at nominal load conditions.
8. Cross-regulation is tested by changing the load on the primary output from 50% to 100% of nominal load while measuring the voltage change on the auxiliary output under test.
9. Remote sensing links are provided for single output, chassis-mount models for improved load regulation.
10. De-rate output power by 1% for each 1% of remote-sensing compensation or output voltage adjustment.
11. The SM1-25 and SM3-25 series are approved to UL1950 (File E140439), CSA (File LR52335) and to EN60950/IEC950/DIN VDE 0805 (TÜV License R0097573).

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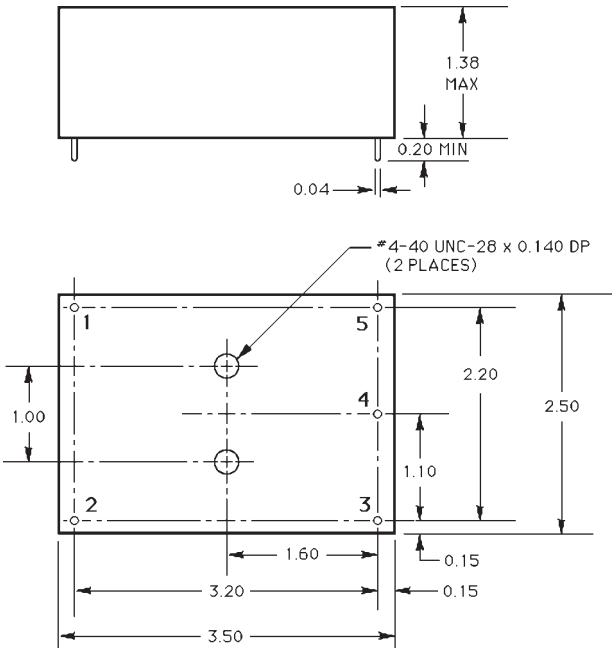
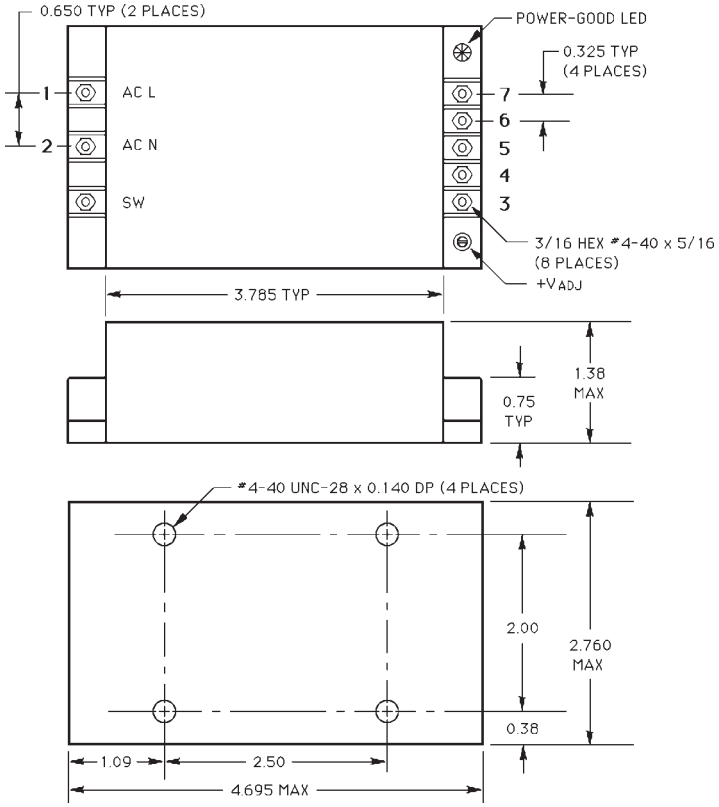
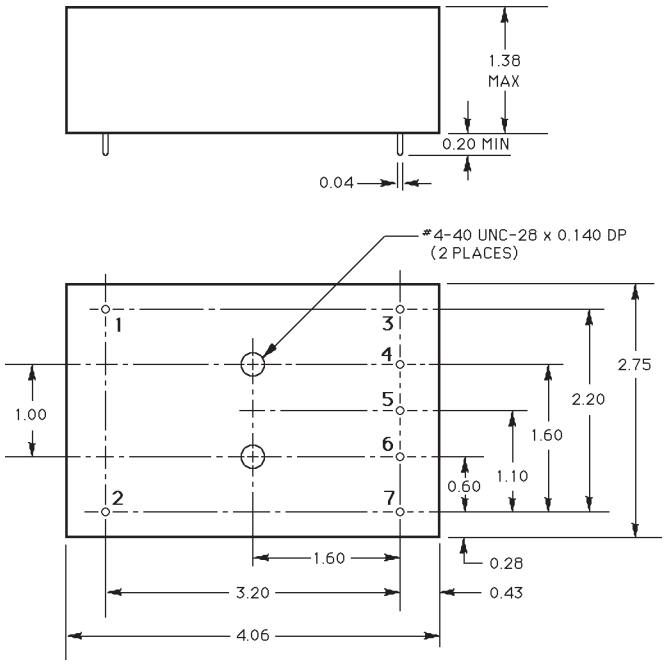
Single Output Pin-Mount Models



Single Output Chassis-Mount Models



Triple Output Pin-Mount Models



SM1-25 AND SM3-25 SERIES

A. Dimensions shown are in inches.
B. Tolerances = 0.00 ±0.01 inch.
0.000 ±0.005 inch.
C. Terminal "SW" on chassis-mount models is for ac line connection through an external switch: No internal connection.

Pin-Out

	Chassis-Mount Models		Pin-Mount Models	
Pin	SM1-25	SM3-25	SM1-25	SM3-25
1	AC LIne	AC LIne	AC LIne	AC LIne
2	AC Neutral	AC Neutral	AC Neutral	AC Neutral
3	-Sense	V1 Return	V1	V3
4	Return	V1	Return	V1 Return
5	V1	V3	N/C	V2/V3 Comm
6	+Sense	V2/V3 Comm	N/A	V1
7	Power Fail	V2	N/A	V2