DATA SHEET
ENCAPSULATED DC-DC MODULE
Model no. SDEM1

FEATURES

- Up to 20W Output power
- Low Profile 72 x 33 x 12 mm
- Wide Input Voltage Ranges to Cover Most Applications
- Over Current Protection, Auto Recovery
- Six sided permanent Shield
- High efficiency up to 90%
- Within FCC Class A Limits
- Manufactured in ISO9001 Certified Facility

The SDEM1 Series of DC/DC converters feature units up to 20 watts in a 72 x 33 x 12 mm package. The units are PC mountable and require an input filter for low reflected ripple. Includes continuous short circuit protection, up to 1600VDC input/output isolation and typical efficiencies of > 80%. All the models are particularly suited to Telecom, Industrial & Test equipment Applications

SPECIFICATIONS: SDEM1 SERIES

All specifications apply @ +25 C ambient unless otherwise noted.

INPUT SPECIFICATIONS

Input voltage range 18-36VDC
Nominal input.....24VDC
Input filter.....Pi network
Input surge voltage .....24 V input.....50VDC (100mS max)
Input reflected ripple (Note 1) nominal Vin and FL.30mA p-p
Start up time nominal Vin and constant Resistive load.....20mS Typical

OUTPUT SPECIFICATIONS

Output power..... .....20 Watts, max
Output current..... .....2A, max
Multiple Output .....As per custom requirements
Voltage accuracy.....full load and nominal Vin .....±2% max
Voltage balance.....dual output with bal. load .....±1% max
Minimun load (Note 3) .....10% of FL
Line regulation.....LL to HL at full load .....±1%
Load regulation .....10% to 100% FL....single output ±1%
dual output ±2%
Cross regulation .....assym. load 25% / 100% FL .....±5%
Ripple and noise .....20MHz bandwidth.....single 50mV p-p
dual 75mV p-p
Temperature coefficient.....±0.02% / °C max
Over voltage protection .....As per cust. Requirement.
(b/w 110% TO 150% OF O/P Vg.)
Over load protection.....% of FL at nominal Vin .....150% typ
Short circuit protection .....hiccup, automatic recovery
Transient response ....25% load step change 500uS

GENERAL SPECIFICATIONS

Efficiency .....above 85%
Isolation voltage.....1600VDC min
Isolation resistance .....109Ohms min
Isolation capacitance.....300pF max
Switching frequency .....300kHz typ
standards.....IEC60950
Case material.....Nickel coated copper, non-conductive base
Potting material.....Epoxy (UL94-V0)
Dimensions..... 72 x 33 x 12 mm
Pin Pitch…….As per Industry Standards /Custom requirements
Weight..... 55 gms.
MTBF (Note 4).....1.976x106 Hrs

ENVIRONMENTAL SPECIFICATIONS

Operating temperature .....-25 ~ +85°C (with derating)
Maximum case temperaturE .....+100°C
Storage temperature.....-55 ~ +105°C
Thermal impedance (Note 5) .....natural convection 12°C/watt
natural convection w/heat sink 10°C/watt
Thermal shock.....MIL-STD-810D
Vibration .....10~55Hz, 2G, 30 minutes along X,Y and Z
Humidity .....5% - 95% RH

EMC CHARACTERISTICS

Conducted emissions.....EN55022.....Level A

Due to advances in technology, specifications subject to change without notice. 01/01/06

RANGES:

Model No.	Input Voltage	Output Voltage	Output Current	Output Power	OVP Set Point
Units	**(VDC)**	**(VDC)**	**(A)**	**(Watts)**	**(VDC)**
SDEM1A	18 - 36	1.8	1	1.8	1.98 to 2.7
SDEM1B	18 - 36	1.8	1.5	2.7	1.98 to 2.7
SDEM1C	18 - 36	1.8	2	3.6	1.98 to 2.7
SDEM1D	18 - 36	3.3	1	3.3	3.63 to 4.95
SDEM1E	18 - 36	3.3	1.5	4.95	3.63 to 4.95
SDEM1F	18 - 36	3.3	2	6.6	3.63 to 4.95
SDEM1G	18 - 36	5	1	5	5.5 to 7.5
SDEM1H	18 - 36	5	1.5	7.5	5.5 to 7.5
SDEM1I	18 - 36	5	2	10	5.5 to 7.5
SDEM1J	18 - 36	9	1	9	9.9 to 13.5
SDEM1K	18 - 36	9	1.5	13.5	9.9 to 13.5
SDEM1L	18 - 36	9	2	18	9.9 to 13.5
SDEM1M	18 - 36	12	1	12	13.2 to 18
SDEM1N	18 - 36	12	1.5	18	13.2 to 18
SDEM1O	18 - 36	15	0.75	11.25	16.5 to 22.5
SDEM1P	18 - 36	15	1.25	18.75	16.5 to 22.5
SDEM1Q	18 - 36	18	1	18	19.8 to 27
SDEM1R	18 - 36	24	0.5	12	26.4 to 36
SDEM1S	18 - 36	24	0.75	18	26.4 to 36

NOTES:

1. Please add an External filter at Converter input terminals when measuring input reflected ripple. L: Simulated source impedance of 12µH. 12µH inductor in series with +Vin. C:100 µF/63V
2. The SDEM1 series requires a minimum 10% loading on the output to maintain specified regulation.
3. Operation under no-load condition will not damage these devices, however they may not meet all listed specifications.
4. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40C. (Ground fixed and controlled environment).
5. Over Voltage protection set point as per user requirement b/w 110% TO 150% of O/P Vg.
6. Heat sink optional, consult factory.
7. Typical value at nominal input voltage and full load.
8. PC pins – 1.016 mm diameter x 5.08 mm long (min.).