



Test Report : GEM18I09

AC-DC High Reliability Interchangeable Medical Adaptor

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

■ SAFETY TEST

Safety Test

■ RELIABILITY TEST

Other test

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------|-----------------|---|-----------------|---------|
| 1 | RIPPLE & NOISE | 60mVp-p (Max) | I/P:230VAC O/P:FULL LOAD Ta:25°C | 36mVp-p | P |
| 2 | VOLTAGE TOLERANCE | -5% ~ +5% (Max) | I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C | -1.10% ~ +1.07% | P |
| 3 | LINE REGULATION | -1% ~ +1% (Max) | I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C | -0% ~ +0% | P |
| 4 | LOAD REGULATION | -5% ~ +5% (Max) | I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C | -1.08% ~ +1.07% | P |
| 5 | SET UP TIME | 500 mS | I/P:230VAC O/P:FULL LOAD Ta:25°C | 172 mS | P |
| 6 | RISE TIME | 30 mS | I/P:230VAC O/P:FULL LOAD Ta:25°C | 4.96 mS | P |
| 7 | HOLD UP TIME | 16 mS (Min) | I/P:115VAC O/P:FULL LOAD Ta:25°C | 22.3 mS | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|---------------------------|------------------------------------|--|------------------------------------|---------|
| 1 | VOLTAGE RANGE | 90VAC ~ 264VAC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 60V ~ 264V | P |
| 2 | FREQUENCY RANGE | 50HZ - 60HZ (Typ) NO DAMAGE OSC | I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 84% (Typ) | I/P:230VAC O/P:FULL LOAD Ta:25°C | 85.918% | P |
| 4 | AVERAGE EFFICIENCY | 85.0% (LEVEL VI) | I/P:115/230VAC O/P:25% 、 50% 、 75% 、 100% LOAD Ta:25°C | 85.78% (115VAC) 85.67% (230VAC) | P |
| 5 | AC CURRENT | 0.45A (Max) | I/P: 100VAC O/P:FULL LOAD Ta:25°C | 0.37A | P |
| 6 | NO LOAD POWER CONSUMPTION | < 0.075W (Max) | I/P:230VAC O/P: NO LOAD Ta:25°C | 0.051W | P |

| | | | | | |
|---|-----------------|---------------------|--|--------------------------|---|
| 7 | INRUSH CURRENT | < 60A COLD START | I/P:230VAC O/P:FULL LOAD Ta:25°C | 48.0A | P |
| 8 | LEAKAGE CURRENT | < 100μA | I/P:264VAC O/P:Min LOAD Ta:25°C | L-FG: 20μA N-FG: 20μA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|----------------------------------|--|---|---------|
| 1 | OVER LOAD PROTECTION | 105% ~ 160% | I/P:230VAC O/P:TESTING Ta:25°C | 2.65A (133%) HICCUP MODE RESET : AUTO RECOVER | P |
| 2 | OVER VOLTAGE PROTECTION | 110% ~ 140% | I/P:230VAC O/P:MIN LOAD Ta:25°C | 133% (IN4742A)Clamp by ZENER diode | P |
| 3 | SHORT PROTECTION | SHORT OUTPUT 1 HOUR NO DAMAGE | I/P:264VAC O/P:FULL LOAD Ta:25°C | NO DAMAGE HICCUP MODE RESET AUTO RECOVER | P |

■ SAFETY TEST

SAFETY TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|----------------------|---------------------------------|------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:5656 VDC/min | I/P-O/P:5656 VDC/min Ta:25°C | I/P-O/P: 0.03uA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ | I/P-O/P:500 VDC Ta:25°C | I/P-O/P>100MΩ NO DAMAGE | P |

■ RELIABILITY TEST

OTHER

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------|--|----------------|--------|---------|
| 1 | MTBF | MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 2.205426 M.T.B.F : 453427 HRS | | | P |

| TEST RESULT | TESTER | APPROVAL |
|-------------|-------------|---------------|
| PASS | PETER CHENG | VINCENT TSENG |