



ISO 9001:2000  
REGISTERED

## GT-2065 AND GT-2066 SERIES-65W

### 0-65 Watts, 3"X5" Open Frame, Universal Input, Single, Dual and Triple Output Family, ITE

Medical Versions (See Page 71)



#### ELECTRICAL SPECIFICATIONS:

**INPUT VOLTAGE:**  
UNIVERSAL INPUT FROM 100VAC TO 240VAC

**INPUT CURRENT:**  
1.5A@65W MAXIMUM AT 90Vac FULL LOAD

**INPUT FREQUENCY:**  
47 HZ - 63 HZ

**OUTPUT CURRENT:**  
NO MINIMUM LOAD REQUIRED

**OUTPUT POWER (RATED):**  
65 WATTS MAX FREE AIR CONVECTION

**OUTPUT RIPPLE (PEAK TO PEAK):**  
LESS THAN 1% OF OUTPUT VOLTAGE

**OUTPUT REGULATION (LINE/LOAD):**  
+/-5% MAXIMUM MEASURED AT THE OUTPUT CONNECTOR

**LINE REGULATION:**  
+/- 1% TYPICAL MEASURED AT FULL LOAD<sup>4</sup>

**TURN ON/ TURN OFF OVERTHOOT:**  
5% MAXIMUM, 1ms TYPICAL RECOVERY TIME FOR 25% STEP LOAD

**TURN-ON DELAY:**  
3 SEC TYPICAL

**HOLD-UP TIME:**  
16ms TYPICAL @ 120VAC, 50ms TYPICAL @ 230VAC

**INRUSH CURRENT:**  
20A MAXIMUM AT 120VAC AND 40A MAXIMUM AT 230VAC

**EFFICIENCY:**  
75% TYPICAL AT NOMINAL INPUT AND FULL LOAD<sup>4</sup>

**SWITCHING FREQUENCY:**  
100 KHZ TYPICAL

**OVER-VOLTAGE PROTECTION:**  
OUTPUT LIMITED BETWEEN 120 TO 150% OF NOMINAL, HICCUP MODE

**OVER-CURRENT / SHORT CIRCUIT:**  
HICCUP MODE WITH AUTORECOVERY ONCE FAULT IS REMOVED. POWER SUPPLY IS OUTPUT POWER LIMITED, HICCUP MODE

**OTHER PROTECTION:**  
INPUT LINE FUSING

**SAFETY APPROVALS:**  
UL 60950 (THIRD EDITION), CUL TO 22.2 NO. 60950, DEMKO TO EN60950, CB REPORT

**DIELECTRIC WITHSTAND VOLTAGE:**  
4242VDC (3000VAC) FROM PRIMARY TO SECONDARY  
2121VDC (1500VAC) SECONDARY TO GROUND

#### LEAKAGE CURRENT:

250uA AT 240VAC

#### LINE SURGE:

EN 61000-4-5 LEVEL 2

#### EMI:

COMPLIES WITH EN55022 CLASS B AND FCC PART 15 CLASS B WHEN TESTED WITH RESISTIVE LOAD, BOTH CONDUCTED AND RADIATED EMI.

#### CE MARK:

TESTED TO COMPLY WITH EN61000-3-2 EN610003-3 AND EN50082-1 INCLUDING EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11.

#### MTBF:

100K HRS 25C FULL LOAD , NOMINAL INPUT VOLTAGE (MIL-HDBK-217F)

#### OPERATING TEMPERATURE:

-20°C TO 50°C AMBIENT TEMPERATURE

#### STORAGE TEMPERATURE:

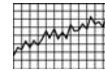
-40° C TO 80° C

#### HUMIDITY:

NON-CONDENSING; 5% TO 90% RH

#### NOTES:

1. EACH OUTPUT CURRENT MAY VARY WITHIN IT'S DESIGNATED RANGE, AS LONG AS OUTPUT POWER IS NOT EXCEEDED.
2. SINGLE OUTPUT UNITS ARE AVAILABLE FROM 3.3V UP TO 48V IN 0.1V INCREMENTS.
3. (X.X) OPTIONAL FOR SPECIFYING OUTPUT VOLTAGE DEVIATION FROM STANDARD MODEL. SUBTRACTING X.X VOLTS FROM STANDARD OUTPUT VOLTAGE.
4. TYPICAL EFFICIENCY FOR 7.5V AND BELOW IS 70%



SEE APPENDIX "G" FOR ELECTRICAL PERFORMANCE CURVES

#### OPTIONS:

1. PASSIVE PFC VERSION
2. CLASS II VERSION
3. EXTENDED PCB WITH CONFIGURABLE ENCLOSURE.
4. OPEN FRAME WITH CONFIGURABLE INPUT AND OUTPUT WIRING HARNESS.
5. L-BRACKET WITH PERFORATED COVER
6. REMOTE SENSING

#### OUTPUT VOLTAGE / CURRENT / POWER:

| MODEL NUMBER        | OUTPUT VOLTAGE (VDC)       | 65W OUTPUT CURRENT (A) FREE AIR CONVECTION | RATED OUTPUT POWER (W) |    |
|---------------------|----------------------------|--|------------------------|----|
| GT-2065(P)333.3-X.X | F(W) OR EXXX(W) OR HXXX(W) | +3.3                                       | 10.0                   | 33 |
| GT-2065(P)4005-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +5.0                                       | 8.00                   | 40 |
| GT-2065(P)657.5-X.X | F(W) OR EXXX(W) OR HXXX(W) | +7.5                                       | 8.67                   | 65 |
| GT-2065(P)6509-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +9.0                                       | 7.22                   | 65 |
| GT-2065(P)6512-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +12.0                                      | 5.42                   | 65 |
| GT-2065(P)6515-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +15.0                                      | 4.33                   | 65 |
| GT-2065(P)6518-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +18.0                                      | 3.61                   | 65 |
| GT-2065(P)6524-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +24.0                                      | 2.71                   | 65 |
| GT-2065(P)6536-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +36.0                                      | 1.80                   | 65 |
| GT-2065(P)6548-X.X  | F(W) OR EXXX(W) OR HXXX(W) | +48.0                                      | 1.36                   | 65 |

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Medical Versions (See Page 71)

**OUTPUT VOLTAGE / CURRENT:**

| MODEL NUMBER                 |                            | OUTPUT VOLTAGE (VDC) | 65W OUTPUT CURRENT (A)<br>FREE AIR CONVECTION | RATED OUTPUT POWER (W) |
|------------------------------|----------------------------|----------------------|---|------------------------|
| <b>DUAL OUTPUT SECTION</b>   |                            | <b>PRELIMINARY</b>   |   |                        |
| GT-2066(P)-330500-XX         | F(W) OR EXXX(W) OR HXXX(W) | +3.3/+5.0            | 10.0/1.4                                      | 40                     |
| GT-2066(P)-051200-XX         | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+12.0           | 10.0/1.25                                     | 65                     |
| GT-2066(P)-05N1200-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/-12.0           | 10.0/1.25                                     | 65                     |
| GT-2066(P)-051500-XX         | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+15.0           | 10.0/1.0                                      | 65                     |
| GT-2066(P)-05N1500-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/-15.0           | 10.0/1.0                                      | 65                     |
| GT-2066(P)-052400-XX         | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+24.0           | 10.0/0.62                                     | 65                     |
| GT-2066(P)-24N0500-XX        | F(W) OR EXXX(W) OR HXXX(W) | +24.0/-5.0           | 2.29/2.0                                      | 65                     |
| GT-2066(P)-05N0500-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/-5.0            | 11.0/2.0                                      | 65                     |
| GT-2066(P)-12N1200-XX        | F(W) OR EXXX(W) OR HXXX(W) | +12.0/-12.0          | 4.41/1.0                                      | 65                     |
| GT-2066(P)-15N1500-XX        | F(W) OR EXXX(W) OR HXXX(W) | +15.0/-15.0          | 3.33/1.0                                      | 65                     |
| GT-2066(P)-18N1800-XX        | F(W) OR EXXX(W) OR HXXX(W) | +18.0/-18.0          | 2.61/1.0                                      | 65                     |
| GT-2066(P)-24N2400-XX        | F(W) OR EXXX(W) OR HXXX(W) | +24.0/-24.0          | 2.20/0.50                                     | 65                     |
| <b>TRIPLE OUTPUT SECTION</b> |                            | <b>PRELIMINARY</b>   |   |                        |
| GT-2066(P)-330512-XX         | F(W) OR EXXX(W) OR HXXX(W) | +3.3/+5.0/+12.0      | 5.0/3.0/1.0                                   | 43.5                   |
| GT-2066(P)-0512N12-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+12.0-12.0      | 5.0/2.3/1.0                                   | 65                     |
| GT-2066(P)-0512N05-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+12.0/-5.0      | 7.0/2.0/1.2                                   | 65                     |
| GT-2066(P)-051215-XX         | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+12.0/+15.0     | 5.0/2.0/1.0                                   | 65                     |
| GT-2066(P)-0515N15-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+15.0/-15.0     | 5.0/2.0/0.67                                  | 65                     |
| GT-2066(P)-051224-XX         | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+12.0/+24.0     | 5.8/2.0/0.50                                  | 65                     |
| GT-2066(P)-0524N12-XX        | F(W) OR EXXX(W) OR HXXX(W) | +5.0/+24.0/-12.0     | 5.0/1.0/1.33                                  | 65                     |

**MODEL NUMBER DESCRIPTION****GT(M)2065(P)333.3-X.X TO 6548-X.X****GT:** GLOBTEK SERIES**M:** MEDICAL GRADE; - (DASH) FOR ITE GRADE

2065: 65W FAMILY DESIGNATOR

**P:** PASSIVE PFC VERSION; NO "P" FOR NON-PFC VERSION

333.3 TO 6548 = 33W @ 3.3V UP TO 65W @ 48V OUTPUT POWER

**XX:** USE TO SPECIFY OUTPUT VOLTAGE DEVIATION FROM

STANDARD MODEL BY SUBTRACTING X.X VOLTS FROM

STANDARD OUTPUT VOLTAGE

DUAL AND TRIPLE OUTPUT (GT(M)2066): XXYYZZ DESIGNATES

THE OUTPUT VOLTAGE COMBINATION.

**F(W)****F:** OPEN FRAME VERSION**W:** CLASS II UNITS (NO "W" MEANS CLASS I)**(E)XXX(W)A****E:** EXTENDED PCB (3X6); NO "E" MEANS STANDARD SIZE BOARD (3X5)**XXX:** DENOTES PERFORATED ENCLOSURE AND BASE PLATE SIZE CODE WHERE XXX CAN BE FROM 000 TO 999

(MAXIMUM PERFORATED ENCLOSURE AND BASE PLATE SIZE IS 50" X 30")

**W:** CLASS II UNITS (NO "W" MEANS CLASS I)**HXXX(W)A****H:** OPEN FRAME WITH CONFIGURABLE INPUT AND OUTPUT

WIRE HARNESS USING UL1007/UL1015 AWG18 WIRES

**XXX:** DENOTES INPUT AND OUTPUT WIRE HARNESS LENGTH

CODE WHERE XXX CAN BE FROM 000 TO 999

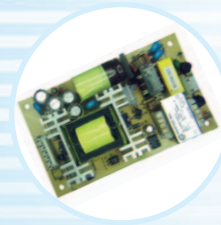
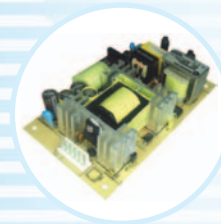
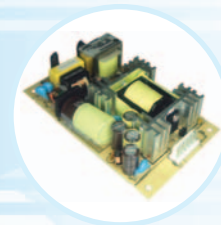
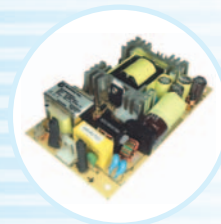
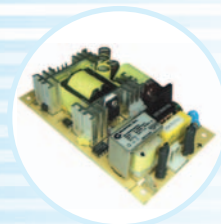
(MAXIMUM WIRE HARNESS LENGTH FOR INPUT CONNECTOR

IS 100mm AND 200mm FOR OUTPUT CONNECTOR)

**W:** CLASS II UNITS (NO "W" MEANS CLASS I)**NOTES:**

- 1) THE MEDICAL VERSION IS DESIGNED NOT TO BE USED IN SYSTEM WITH DIRECT PATIENT CONTACT APPLICATIONS.
- 2) FOR 80W VERSIONS, 10CFM OF AIR FLOW DIRECTED TOWARD THE LONGER SIDE OF THE POWER SUPPLY IS REQUIRED. THERMAL TESTING FOR 80W EVALUATION WAS DONE IN A WIND TUNNEL MEASURING 35" X 6" X 2" . A FINE WIRE MESH SCREEN (3 LOCATIONS) WAS USED TO DISPERSE THE INCOMING AIR.
- 3) SWITCHING FREQUENCY NOISE MEASUREMENT ARE MADE ACROSS A 20MHZ BANDWIDTH WITH 10UF TATALUM CAPACITOR AND 0.1UF CERAMIC CAPACITOR CONNECTED AT THE OUTPUT CONNECTOR.
- 4) CONDUCTED AND RADIATED EMI WERE PERFORMED WITH RESISTIVE LOADS SET TO FULL LOAD, NOMINAL LINES. DEPENDING ON SYSTEM CONFIGURATION, ADDITIONAL FILTERING MAY BE REQUIRED.
- 5) ALL MODELS MAY REQUIRE A MINIMUM MOUNTING STANDOFF OF 0.16" (4.00mm) IN THE END USER PRODUCT.
- 6) FOR OPTIMUM RELIABILITY, NO PART OF THE HEATSINK SHOULD EXCEED 120C AND NO SEMI-CONDUCTOR CASE SHOULD EXCEED 130C.
- 7) WHEN REMOTE SENSE IS USED, THE REMOTE SENSE WIRE SHOULD BE TWISTED AT 2 TWIST PER INCH TO AVOID STABILITY PROBLEM IN THE POWER SUPPLY.

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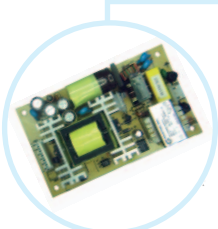
### 0-65 Watts, 3"X5" Open Frame, Universal Input, Single, Dual and Triple Output Family, ITE

Medical Versions (See Page 71)



#### CONFIGURATION

OPEN FRAME SWITCHING POWER SUPPLY WITH MOUNTING HOLES POSITIONED AS BELOW



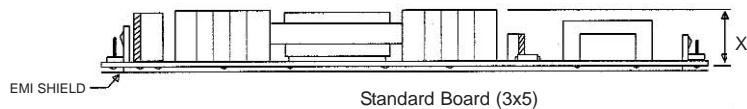
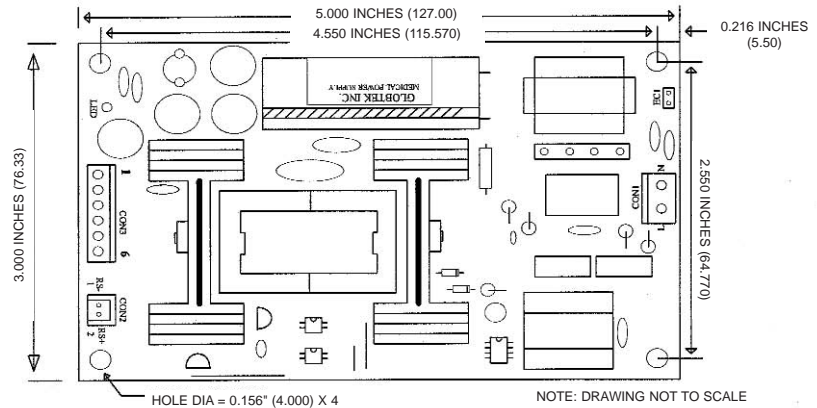
#### OPEN FRAME CLASS I:

##### INPUT CONNECTOR (CON1)

MOLEX 3-PIN WITH CENTER PIN REMOVED  
MOLEX PN: 26-60-4030 MATES  
W/PN: 09-50-3031,  
PIN 1: AC LINE, PIN 3: AC NEUTRAL  
EC1: EARTH GROUND FOR CLASS I UNITS

##### INPUT CONNECTOR (CON1 OPTION)

WIRE HARNESS WITH MOLEX  
HEADER PN: 09-50-3031  
WITH AWG 18 STRANDED WIRE, UL1007  
WITH CONFIGURABLE  
LENGTH UP TO 100mm.  
BLACK/BROWN FOR AC LINE;  
WHITE/BLUE FOR AC NEUTRAL;  
GREEN WITH YELLOW STRIPE  
FOR EARTH GROUND



DRAWING SHOWN IS FOR  
SINGLE OUTPUT

Standard Board (3x5)

X = 1.35 (34.30) INCHES FOR SINGLE OUTPUT

X = 1.6 INCHES FOR DUAL AND TRIPLE OUTPUTS

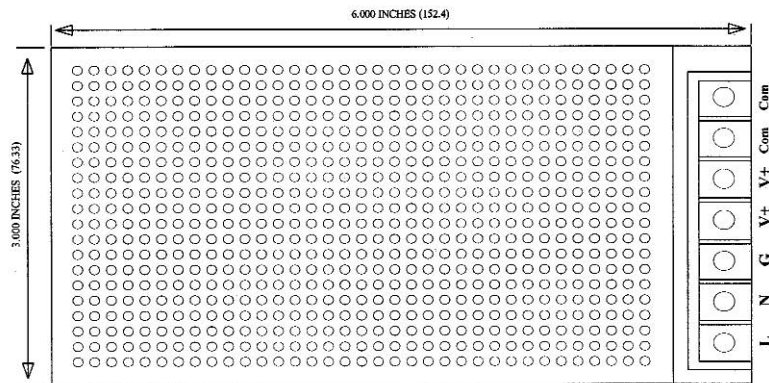
##### OUTPUT CONNECTOR (CON3)

MOLEX 6-PIN FRICTION LOCK HEADER, MOLEX PN: 26-60-4060, MATES WITH PN: 09-50-3061, PIN 1,2,3: COMMON, PIN 4,5,6: V+, CON2 IS REMOTE SENSE CONNECTOR, MOLEX 22-28-0020, MATES WITH MOLEX PN: 22-01-2021, PIN 1: -SENSE; PIN2: +SENSE

##### OUTPUT CONNECTOR (CON3) WITH WIRE HARNESS(H)

WIRE HARNESS WITH MOLEX HEADER PN: 09-50-3061, WITH AWG 18 STRANDED WIRE, UL1007 WITH CONFIGURABLE LENGTH UP TO 200mm. 3 X AWG18, RED FOR V+ 3 X AWG18 BLACK FOR COMMON, CON2 IS REMOTE SENSE CONNECTOR, MOLEX 22-28-0020 MATES WITH MOLEX PN: 22-01-2021, PIN 1: -SENSE; PIN2: +SENSE

OPTION:  
L-BRACKET WITH  
PERFORATED  
COVER.



42.00mm Max. (1.65 Inches Max)

Extended Board (3x6)

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