

[illegible]

max. charge current = 1000mA with ISET selected

T° Sense
NTC 10K with BQ24090
NTC 100K if BQ24091 is used instead BQ24090

1X2-VERTICAL-2,54mm MALE PIN-HEADER not mounted

IC5
IN
ISET
VSS
PRETERM
PGI
OUT
TS
CHG1
ISET2
NC

BQ24090DGQR
ou BQ24090DGQT

V-POWER-USB
V-BAT
GND

R5 560
R6 2.2K
R7 100
R20 10K
R25 10K

JP7
JP3

D5
yellow led 20mA ref:KP-1608SYCK
yellow led : lighted when charging

NTC:MF58-10K not mounted
(22mA in LED D5 for Vbat=4,2V)
(10mA in LED D5 for Vbat=3V)

Maximum charge current:
ISET2: High:500mA max / Low:ISET / Float:100mA max

Charge current

JP7	ON	OFF
R20 mounted	500mA	1A
R20 not mounted	500mA	100mA

MOTOR SUPPLY 6V TO 12V / 1A

POWER CONV

C23 1µF-50V X7R TDK ref:C3216X7R1H105K160AB
C13 3300µF-6.3V Panasonic ref:EEEFJPJ331XAP
RB530VM-30F D12
C14 100nF
C25 1µF-50V X7R TDK ref:C3216X7R1H105K160AB
C22 82pF R17 4.7M
C12 3.3pF R33 22K
+5V
Fosc = 800KHZ
DC converter is shutdown if +5V is not present

J20 is for determine R34 value with a potentiometer connected on (R34 set lout max)

L2 2,2uH-9A KEMET ref:MPLCH0740L2R2
D7 PMEG3030EP
D1 PMEG3030EP
R34 1200
IRF8707 T2
R15 220K
R16 15K not mounted
100K 1TV Bourns ref:3314G-1-104E not mounted
R24 47K not mounted
C24 470µF-16V Panasonic ref:EEEFPP1C471AP
V MOTORS
C27 680µF-16V Panasonic ref:EEEFPP1C681AP
R35 4.7K
D8 green led 2mA only : ref:KPT-1608LVZGCK (2mA in LED D8 for 12V)

V_MOTORS=1,215 X (1+ R15 / R16)

green led : lighted when V_MOTORS is supplied (1-12V)

+5V GND SCL SDA
IC17 MAX5434LEZT-T (50K)
L W
R of IC17 = 0 >> Vout = 13,36V
R of IC17 = 50K >> Vout = 4,9V
R of IC17 = 37,5K >> Vout = 5,7V
R of IC17 = 62,5K >> Vout = 4,4V

if Vout fix to 12V (11,7V):
R41, R37, R2P, and IC17 not mounted
R16 mounted and R15 changed to 130K

if Vout adjustable 6V to 13V with trimmer R41:
R15, R2P, and IC17 not mounted
R16, R41 and R37 mounted

if Vout software adjustable 6V to 13V with max5434:
R16, R41,R37 not mounted
IC17,R2p and R15 mounted

= 1 + R3 / R4
EEEEFP0J470AR
EEEEFP0J470AR
EEEEFP0J470AR
ref:KP-1608SGC
+5V is supplied
(15mA in LED D8)

SUPPLY +5V 2,1A max

1uH-3A Panasonic ref:ELL6RH1R0M

POWER_CONV

IC4 TPS61232DRCR

Vin 10 9 8 6 11 12

SW 1 2 3 4 5

VOUT 7

HYS 10 9 8 6 11 12

SS 1 2 3 4 5

FB 7

PG 10 9 8 6 11 12

GND 1 2 3 4 5 7 10 9 8 6 11 12

R11 180K

R12 100K

R13 22K

C4 10nF

L1 1uH

R2 1M

R3 402K

R4 100K

C3 47uF-6,3V Panasonic ref:EEEF0J470AR

C5 47uF-6,3V Panasonic ref:EEEF0J470AR

C6 47uF-6,3V Panasonic ref:EEEF0J470AR

R26 180

D9 green led 20mA ref:KP-1608SGC

Vout = 1 + R3 / R4

UCD1A220MCL1GS

(15mA in LED D9)

Vin_on = 1.14V * (1 + R11 / (R12 + R13))

Vin_off = 1.19V * (1 + R11 / R12)

Vin_on_battery = 3,4 V

Vin_off_battery = 2,8 V

Vin_off_battery = 3,1 V (if I battery = 2A)

green led : lighted when +5V is supplied

Sheet: 2/2