BRCL4070ZR-4.2 1.2A /
BRCL4070ZR-4.2
P-MOSFET
4.2V 4.2V 1/10

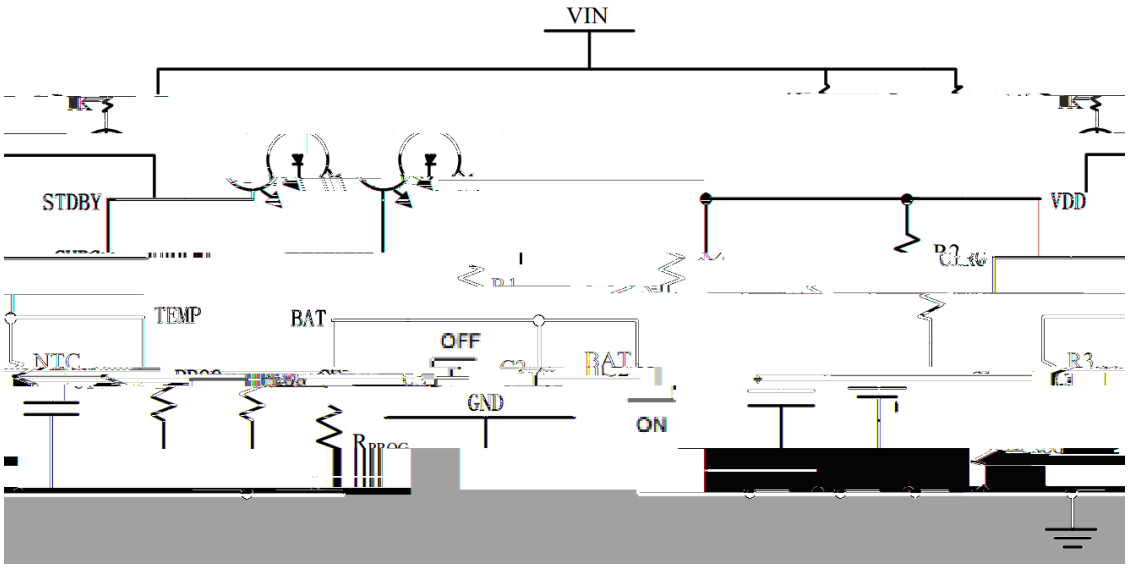
BRCL4070ZR-4.2

6.8V OVP
36V

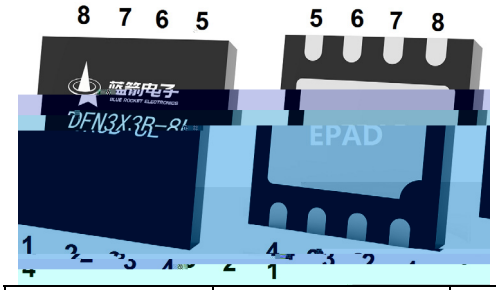
0V
1.2A
/ /

2.8V

DFN3×3B-8L
RoHS



## / Pinning




| PIN Num. | Symbol | Function |
|---|---|---|
| 1 | TEMP | |
| 2 | | |
| 3 | GND | |
| 4 | VDD | |
| 5 | BAT | |
| 6 | STDBY | |
| 7 | CHRG | |
| 8 | CE | |
| EPAD | GND | |

## / Absolute Maximum Ratings(Ta=25 )

| PARAMETER | SYMBOL | RATINGS | UNITS |
|---|---|---|---|
| VDD/CHRG/STDBY Pin Voltage | $V_{VDD/CHRG/STDBY}$ | -0.3~30 | V |
| VCE Pin Voltage | $V_{CE}$ | -0.3~36 | |
| BAT Pin Voltage | $V_{BAT}$ | -5~15 | |
| PROG Pin Voltage | $V_{PROG}$ | -0.3~6 | |
| TEMP Pin Voltage | $V_{TEMP}$ | -0.3~25 | |
| Operating Ambient Temperature Range | $T_{OP}$ | -40~+85 | °C |
| Storage Temperature | $T_{stg}$ | -55~+150 | °C |
| Lead Temperature (Soldering, 10s) | $T_{solder}$ | 260 | °C |
| ESD | HBM | 2000 | V |
| | MM | 200 | V |

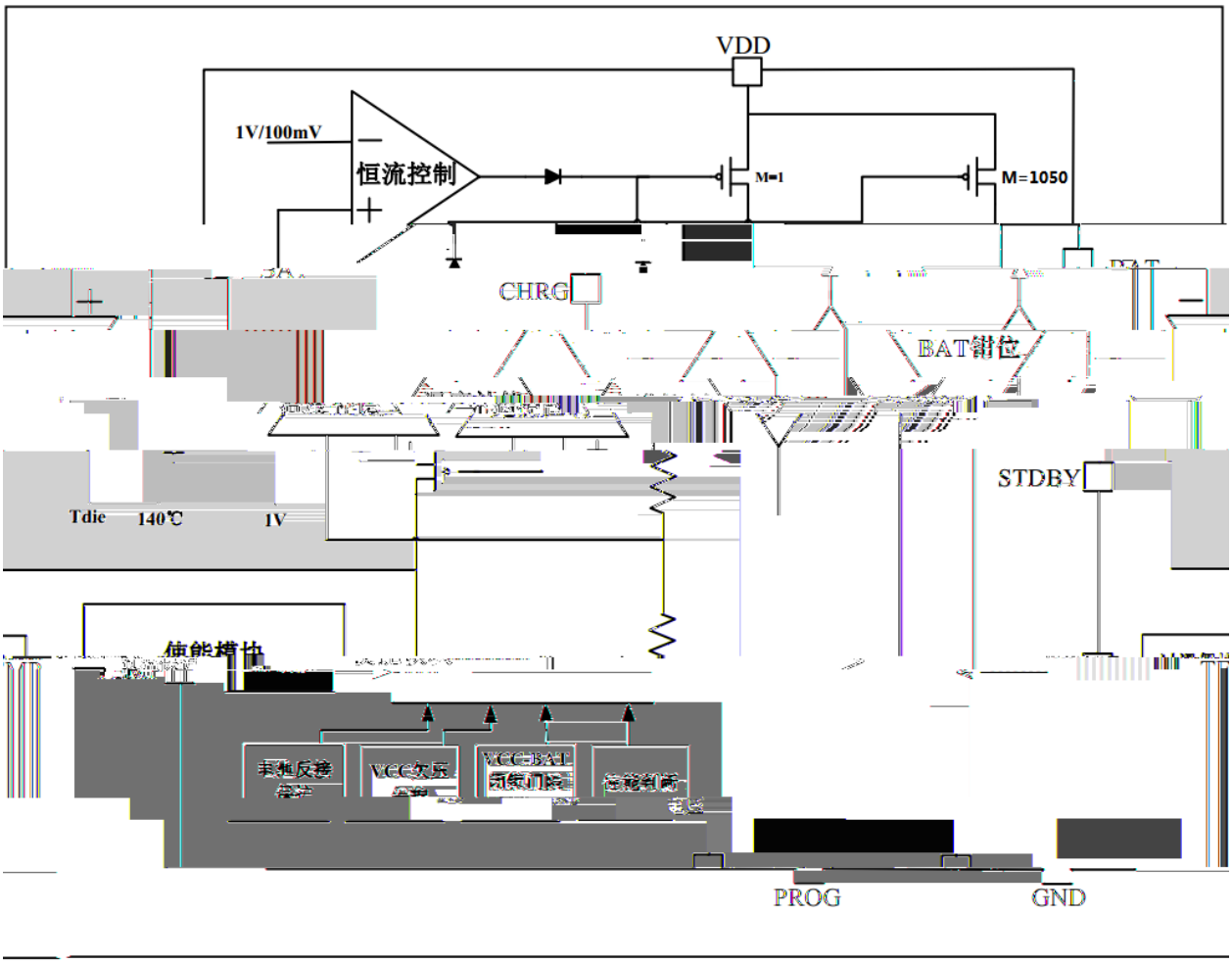
| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **Power Suplly** | | | | | | |
| Input Supply V | | | 4.5 | 5.0 | 6.0 | V |
| $V_{DD}$ Unde Lockou | $V_{DD_UV}$ | to High | | 3.8 | | V |
| $V_{DD}$ l age Loc teresis | $V_{DD_UV_HYS}$ | $V_{DD}$ fro Low | | 200 | | mV |
| In -Voltage P n Voltage | $V_{DD_OVP}$ | | 6.3 | 6.8 | 7.3 | V |
| I r-Voltage Protection V Hysteresis | $V_{DD_OVP_HYS}$ | | | 500 | | mV |
| ower Supply t | $I_{CC}$ | Charging mod ($R_{PROG}$=1K) | | 240 | 360 | μA |
| | | Standby mode, charging termi | | 70 | 120 | μA |
| | | Shutdown mod ($R_{PROG}$ not con , $V_{CC}$<$V_{BAT}$) | | 50 | 100 | μA |
| | | | | | | |
| | | | 0.85 | 1 | 1.15 | V |

BAT Pin Current IC

## / Electrical Characteristics(Ta=25 )

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **Indicator Pin Status CHRG/STDBY** | | | | | | |
| CHRG Pin Output Current | $I_{CHRG}$ | $V_{DD}$=5V;$V_{CHRG}$=1V | 1 | 2.5 | 5 | mA |
| STDBY Pin Output Current | $I_{STDBY}$ | $V_{DD}$=5V;$V_{STDBY}$=1V | 1 | 2.5 | 5 | mA |
| **Internal Temperature Compensation** | | | | | | |
| Internal Temperature Compensation | $T_{OTC}$ | | | 140 | | |
| Overtemperature Detection Threshold | $T_{OTPH}$ | | 43%* VDD | 45%* VDD | | V |
| Low Temperature Detection Threshold | $T_{OTPL}$ | | | 80%* VDD | 82%* VDD | V |

## / Principle block diagram



BRCL4070ZR-4.2 /

BRCL4070ZR-4.2 USB AC1.2A ,

6.8V

UVLO PROG 1%

BAT 2.8V,

1/5

BAT 2.8V

BAT BRCL4070ZR-4.2

1/10

I $_{CH}$ =1950/$R_{PROG}$ $I_{CH}$

$R_{PROG}$ $R_{PROG}$ 200mA

$R_{PROG}$ =1950/0.2 = 5.25K

$R_{PROG}$ 1%

$R_{PROG}$

| $R_{PROG}$(K) I | $_{CH}$(mA) |
|---|---|
| 1 | 1950 |
| 1.2 | 875 |
| | |
| 5 | 205 |
| 10 | 100 |

2ms $T_{RECHARGE}$

BAT 4.05V 80

## / Function description

140 BRCL4070ZR-4.2

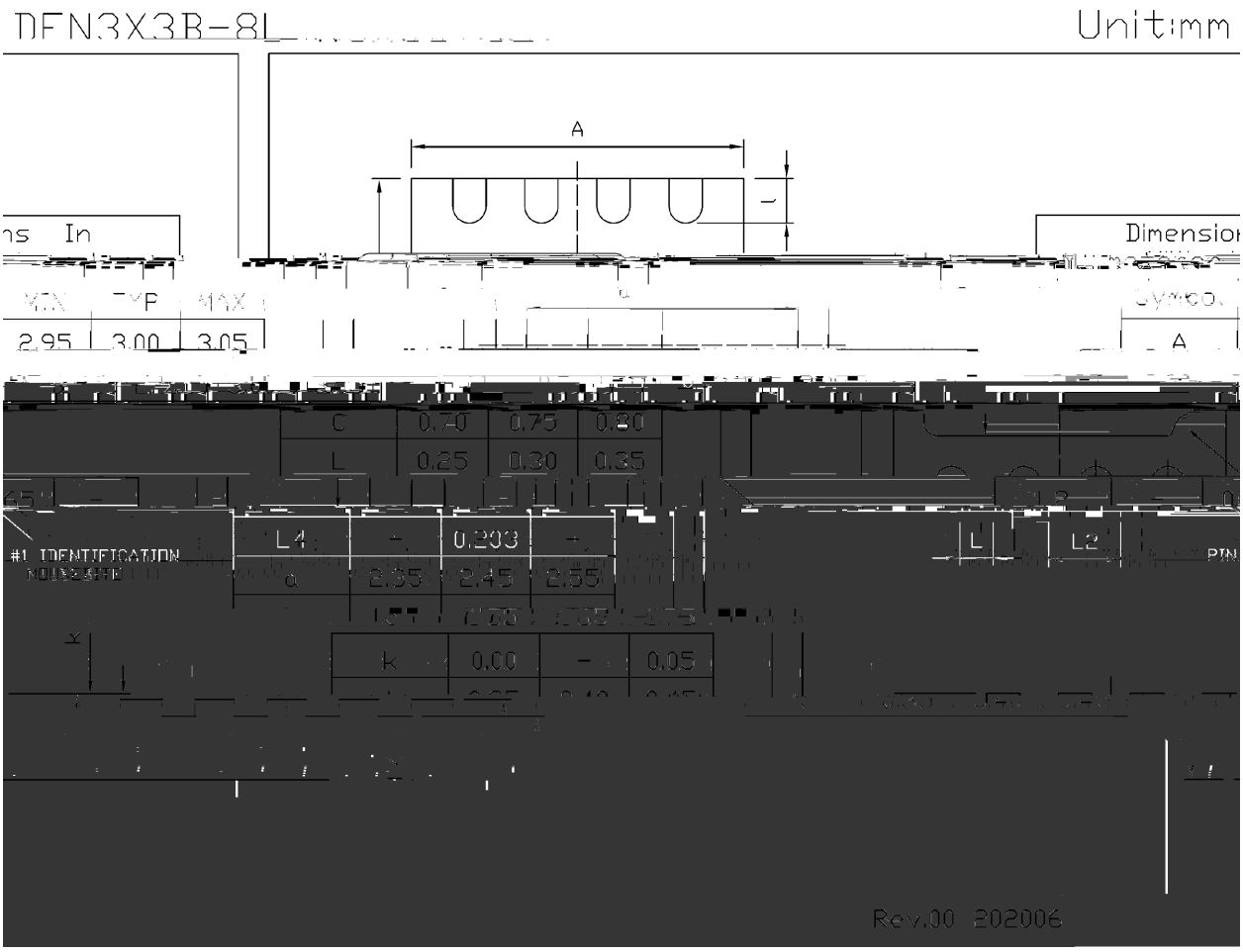
VDD VDD
UVLO VDD 200mV

BRCL4070ZR-4.2 VDD
VDD

BRCL4070ZR-4.2 CHRG STDBY
CHRG STDBY CHRG STDBY

| | CHRG/ | STDBY/ |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

## / Package Dimensions



## / Marking Instructions




| | |
|---|---|
| BRCL4070ZR-4.2 | BR/4070-42/**** |

## ( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



| | | |
|---|---|---|
| | | Note: |
| 1 | 150 180 60 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245 5 5 0.5sec; | 2.Peak Temp.:245 5 , Duration:5 0.5sec. |
| 3 | 2 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

## / Resistance to Soldering Heat Test Conditions

| | | | |
|---|---|---|---|
| 260 5 | 10 1 sec. | Temp.:260±5 | Time:10±1 sec |

## / Packaging SPEC.

/ REEL

| Package Type | Units | Dimension | (unit mm³) |
|---|---|---|---|