## "Yت / Descriptions

BRCL4058NSE 1A /
BRCL4058NSE
P-MOSFET 4.2V
4.2V 1/10

BRCL4058NSE

## ◕ / Features

6.8V OVP
VDD 36V

0V
1A
/ /

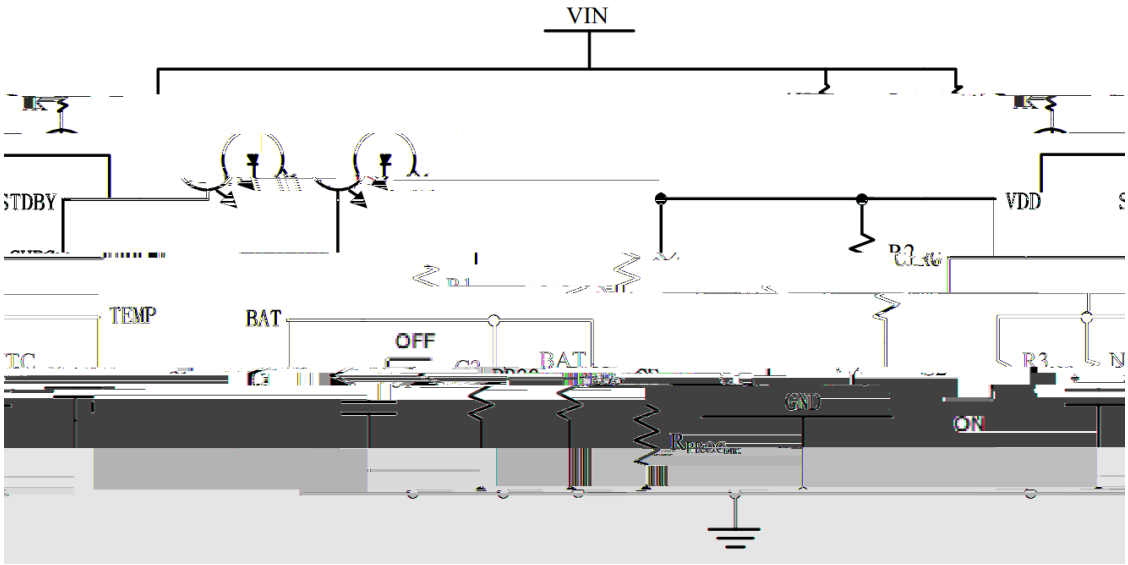
2.8V

ESOP-8
RoHS

## ẓ ∀ / Applications

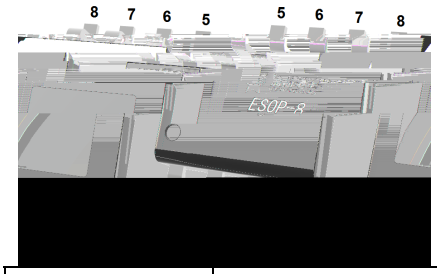
USB

## ẓ ∀ ≠ ɛ / Application Circuit




C SMD 1-10uF R SMD 4.7-10R

## ã ì / Pinning




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

## ú ä ã Ã / Absolute Maximum Ratings(Ta=25 )

| PARAMETER | SYMBOL | RATINGS | UNITS |
|---|---|---|---|
| VDD/CHRG/STDBY Pin Voltage | $V_{VDD/CHRG/STDBY}$ | -0.3~36 | V |
| VCE Pin Voltage | $V_{CE}$ | -0.3~32 | |
| BAT Pin Voltage | $V_{BAT}$ | -5~15 | |
| PROG Pin Voltage | $V_{PROG}$ | -0.3~6 | |
| TEMP Pin Voltage | $V_{TEMP}$ | -0.3~15 | |
| 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 |

## ≠ ∧ ∃ Ạ / Electrical Characteristics(Ta=25 )

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **Power Suplly** | | | | | | |
| Input Supply Voltage | $V_{DD}$ | | 4.5 | 5.0 | 6.0 | V |
| $V_{DD}$ Under Voltage Lockout Threshold | $V_{DD\_UV}$ | $V_{DD}$ from Low to High | | 3.8 | | V |
| $V_{DD}$ Under voltage Lockout Hysteresis | $V_{DD\_UV\_HYS}$ | $V_{DD}$ from High to Low | | 200 | | mV |
| Input Over-Voltage Protection Voltage | $V_{DD\_OVP}$ | | 6.3 | 6.8 | 7.3 | V |
| Input Over-Voltage Protection Voltage Hysteresis | $V_{DD\_OVP\_HYS}$ | | | 500 | | mV |
| Input Power Supply Current | $I_{CC}$ | Charging mode ($R_{PROG}$=1K) | | 240 | 360 | μA |
| | | Standby mode, charging terminated | | 70 | 120 | μA |
| | | Shutdown mode ($R_{PROG}$ not connected, $V_{CC}$<$V_{BAT}$) | | 50 | 100 | μA |
| **Charging Current Setting** | | | | | | |
| $R_{PROG}$ voltage at Constant Current Mode | $V_{PROG}$ | $V_{DD}$=5V;$R_{PROG}$=1K | 0.85 | 1 | 1.15 | V |
| BAT Pin Current | $I_{BAT}$ | $V_{DD}$=5V;$V_{BAT}$=3.6V $R_{PROG}$=1K | | 1000 | | mA |
| | | $V_{DD}$ not connected $V_{BAT}$=4V | | 0.5 | 1 | μA |
| Trickle Charge Current | $I_{TRIKL}$ | $V_{BAT}$ $V_{TRIKL}$ $R_{PROG}$=1K | | 100 | | mA |
| C/10 Charging Termination Current | $I_{TERM}$ | $R_{PROG}$=1K | | 100 | | mA |
| Trickle Charge Threshold | $V_{TRIKL}$ | $V_{BAT}$ from Low to High | | 2.8 | | V |
| Trickle Charge Hysteresis | $V_{TR\_HYS}$ | $V_{BAT}$ from High to Low | | 150 | | mV |
| **Battery Terminal BAT** | | | | | | |
| Regulated Output (Float) Voltage | $V_{FLOAT}$ | $V_{DD}$=5V;$R_{PROG}$=1K | 4.158 | 4.2 | 4.242 | V |
| Rechargeable Battery Voltage | $V_{RECHRG}$ | $V_{FLOAT}$-$V_{RECHARH}$ | | 150 | | mV |
| Recharge Comparator Filtering Time | $T_{RECHARG}$ | $V_{BAT}$ from High to Low | 0.8 | 2 | 4 | mS |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{BAT}$=3.8V;$R_{PROG}$=1K | | 700 | | mΩ |

| 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 | $T_{OTPH}$ | T | | | | |

## ה ׳ישׁ

BRCL4058NSE / BRCL4058NSE

USB AC 1A , 36V

˜ ∧ ╗ ŭ

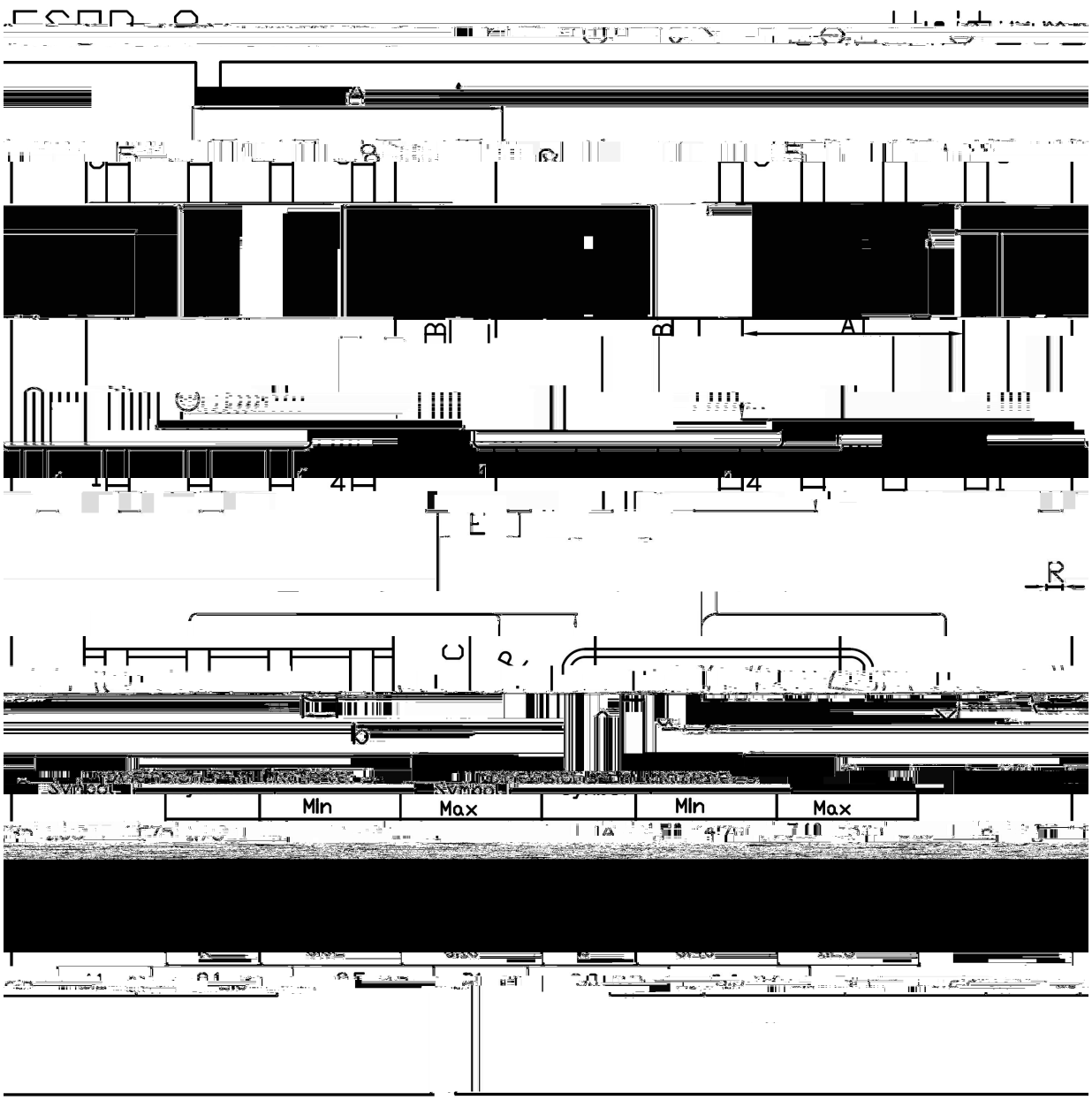
140 BRCL4058NSE

P ٻ ۴

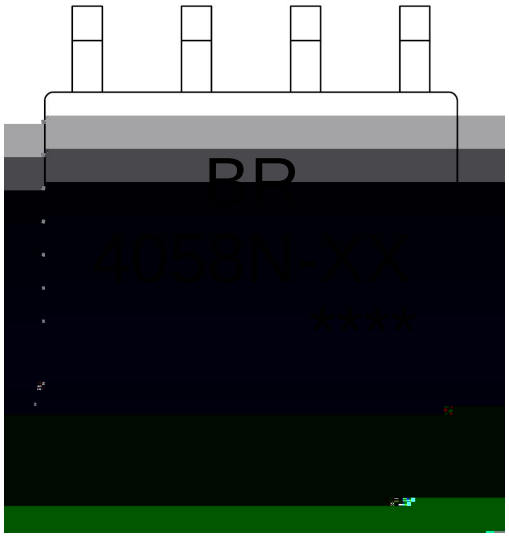
VDD VDD

UVLO VDD 200mV گ

## ᵘ ĖÒĻ ƒ / Package Dimensions



## ł. Ļ Ω / Marking Instructions




BR

4058N

XX

****

| | |
|---|---|
| BRCL4058NSE-4.2 | BR/4058N-42/**** |

## ѭ ʃ ╕ ẘ´E ⅵ ʃ (ᾠ ᴈ) / Wh p shudwxuh Suril oh i ru LU Uhi o r z Vr oghulq j+Se0luhh,

| |
|---|
| |
| |
| |
| |
| |
| |
| |

Note:

1 150 180 60 90sec;

2 245±5 5±0.5sec;

3 2 10 /sec.

1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.