

BRCL4058FZR

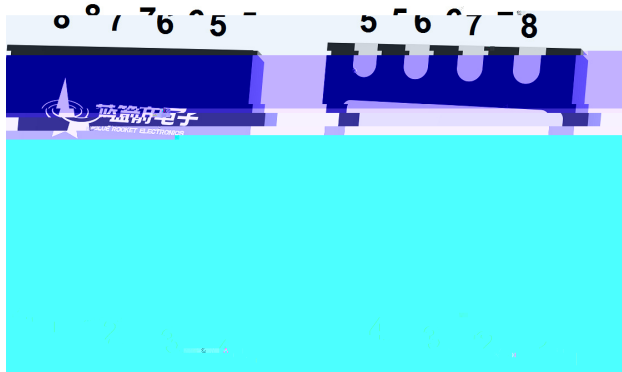
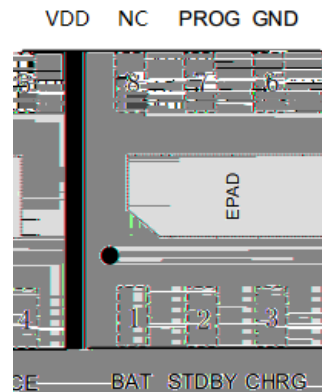
Rev.A Mar.-2023



DATA SHEET

BRCL4058FZR 是 DFN3×3-8L M 封装的 5V 逻辑电平、CMOS 工艺的 1.2A 大电流 MOSFET。该器件具有低导通电阻、高开关速度、低功耗等优点，适用于各种数字电路和功率驱动应用。该器件符合 RoHS 标准，无铅、无卤素。该器件的封装为 3mm×3mm 的 DFN 封装，引脚间距为 0.8mm。该器件的封装图如下所示：

3. 引脚 / Pinning



PIN Num.	Symbol	Function
1	BAT	电池输入
2	STDBY	待机输入
3	CHRG	充电输入
4	CE	芯片使能输入
5	GND	接地
6	SUR J	短路检测输入
7	NC	无连接
8	VDD	电源输入
EPAD	GND	GND

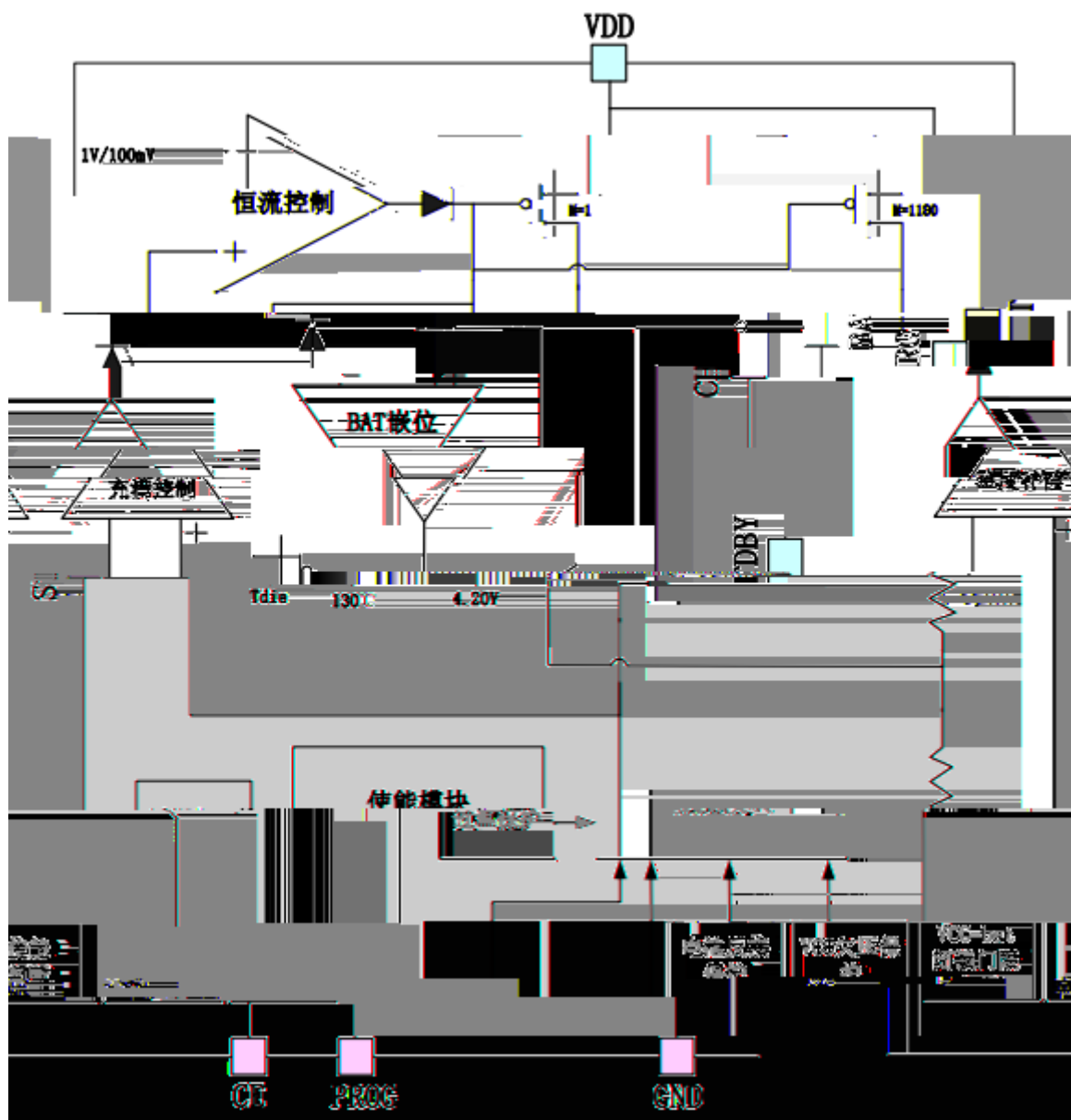
4. 绝对最大额定值 / Absolute Maximum Ratings(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNITS
Input Supply Voltage	V _{DD}	-0.3~30	V
CHRG Pin Voltage	V _{CHRG}	-0.3~30	
STDBY Pin Voltage	V _{STDBY}	-0.3~30	
CE Pin Voltage	V _{CE}	-0.3~6	
PROG Pin Voltage	V _{PROG}	-0.3~6	
BAT Pin Voltage	V _{BAT}	-0.3~20	
Operating Ambient Temperature Range	T _A	-40~85	℃
Junction Temperature	T _J	150	℃
Storage Temperature	T _{stg}	-55~150	℃
Lead Temperature (Soldering, 10s)	T _{solder}	260	℃
ESD	HBM	2000	V

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Supply Voltage			4.5	5.0	6.0	V
Input Over-Voltage Protection Voltage	V_{ovp}	V_{DD} Rising	6.3	6.9	7.5	V
Input Over-Voltage Protection Voltage Hysteresis	ΔV_{OVP}	V_{DD} from High to Low		500		mV
V_{CC} Under voltage Lockout Threshold	V_{UVL}	V_{DD} from Low to High		3.5		V
V_{CC} Under voltage Lockout Hysteresis	ΔV_{UVL}	V_{DD} from High to Low		200		mV
Input Supply Current	I_{CC}	Charge Mode, $R_{PROG}=1.62\text{ K}$		90	180	μA
		Standby Mode (Charge Terminated)		60	120	
		Shutdown Mode: R_{PROG} Not Connected, $V_{DD}<V_{BAT}$, or $V_{DD}<V_{UVL}$: $CE=GND, OVP$		60	120	

Trickle Charge Threshold 492.0.88 558.74 .9803 Tm-.0009 5 Tc.0028 Twn547998 48.3 rw0 474.5003 Tm-.009 50

u P ' f / Principle block diagram



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功能描述 / Function description

◆ 引脚定义

本芯片采用 130nm 工艺，集成 BRCL4058FZR 功能，主要用于低功耗、低成本、高性能的电源管理。芯片内部集成有 LDO、DC-DC 转换器、PMOS 管、NMOS 管、二极管、三极管、电阻、电容等元件。芯片采用 8 脚 SOP 封装，引脚定义如下：

◆ 主要特性

1. 低功耗：静态功耗 < 100nA，动态功耗 < 100uA。

2. 宽电压范围：输入电压范围 0.8V ~ 5.5V，输出电压范围 0.8V ~ 5.5V。

3. 高效率：转换效率 > 90%。

4. 高精度：输出电压精度 < 1%。

5. 高稳定性：输出电压纹波 < 10mV。

◆ 典型应用

1. 低功耗设备：如无线传感器、可穿戴设备等。

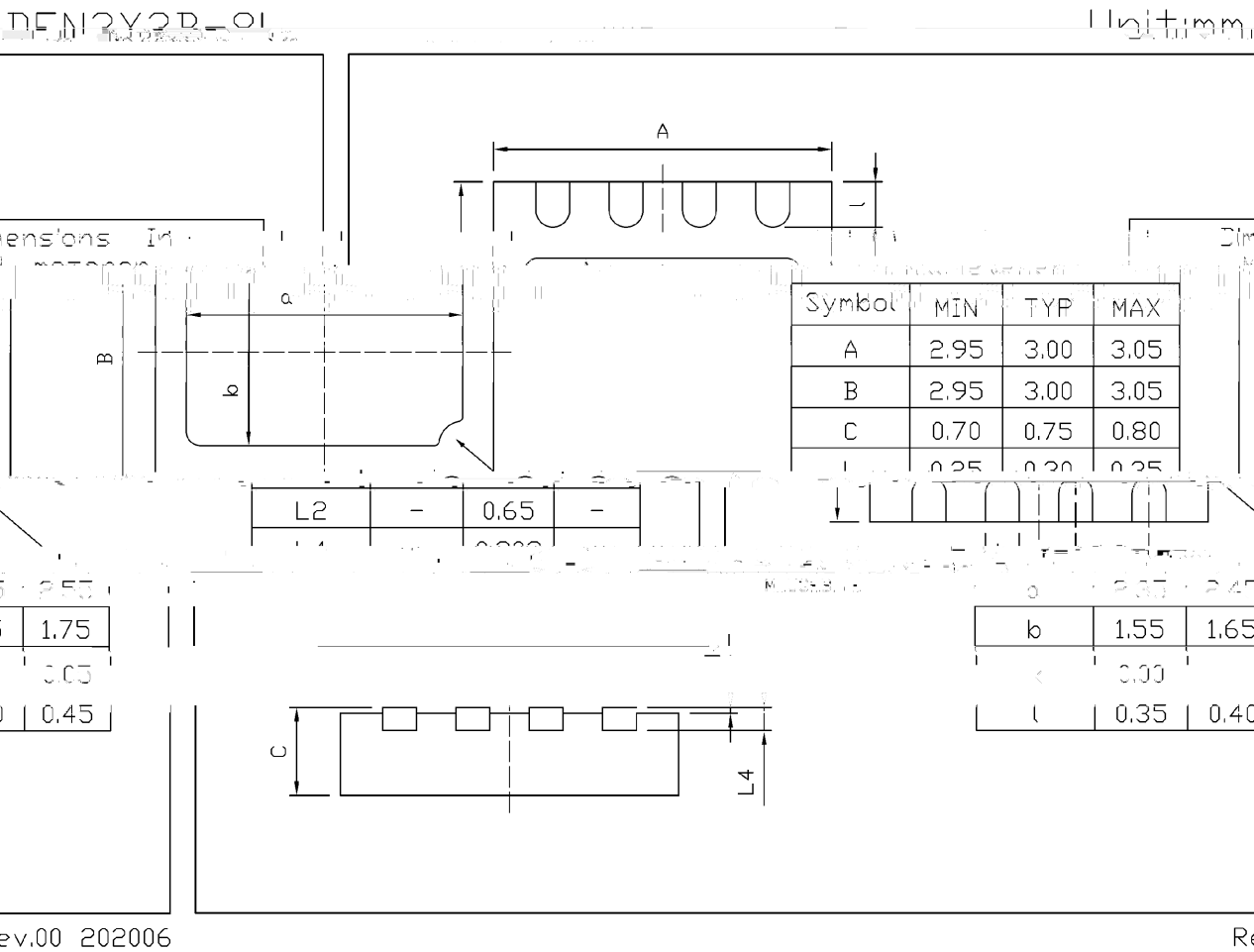
2. 工业控制：如 PLC、变频器等。

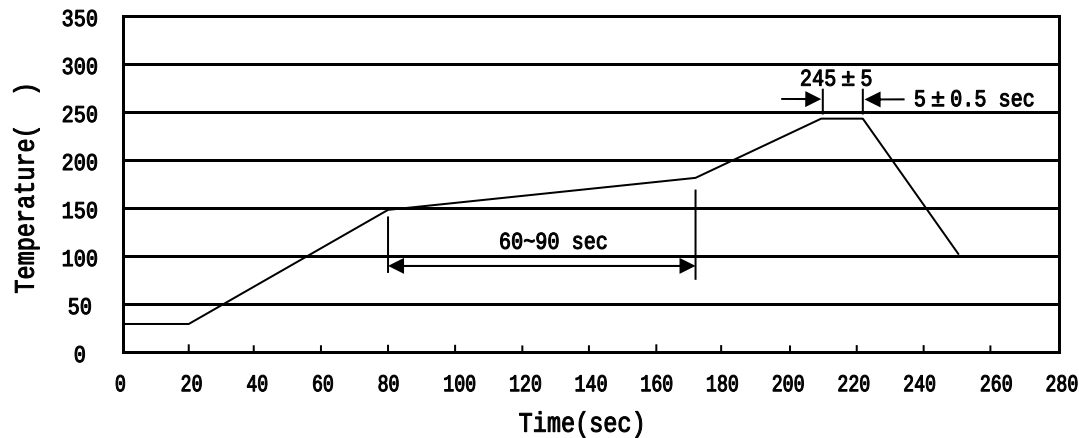
3. 汽车电子：如发动机控制单元、安全气囊控制单元等。

4. 医疗设备：如心电图机、超声诊断仪等。

5. 智能家居：如智能门锁、智能空调等。

Package Dimensions




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1. 150 °C ~ 180 °C , Time: 60 ~ 90 sec;

2. 245 °C ± 5 °C , Duration: 5 ~ 0.5 sec;

3. Cooling Speed: 2 ~ 10 °C / sec.

Note:

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

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

3. Cooling Speed: 2~10 °C / sec.

Resistance to Soldering Heat Test Conditions

Temp.: 260 °C ± 5 °C , Time: 10 ~ 1 sec.

Temp.: 260 °C ± 5 °C

Time: 10 ~ 1 sec

Packaging SPEC.

REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN3×3B-8L	5,000	2	10,000	6	60,000	13 × 12	360×360×50	380×335×366

Notices