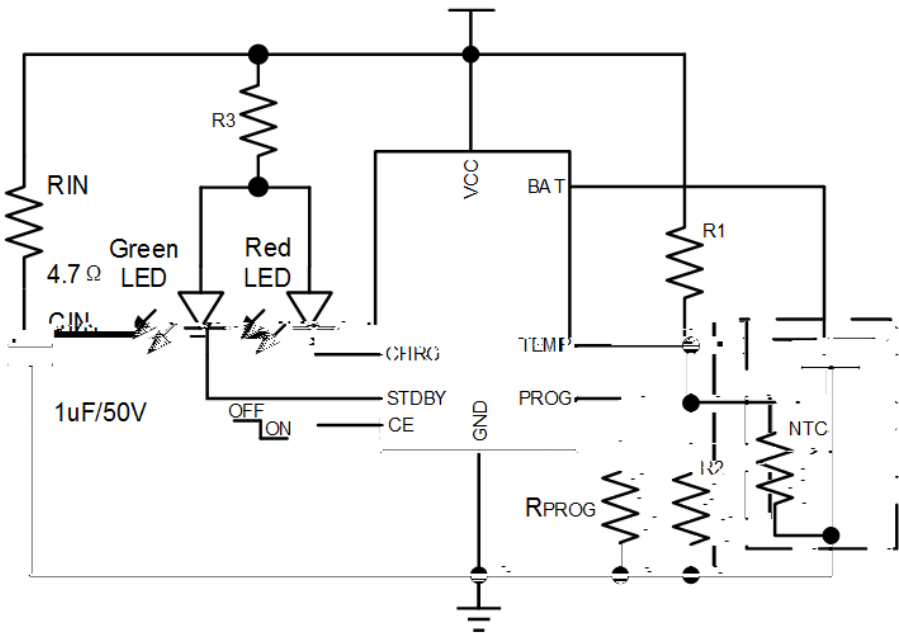
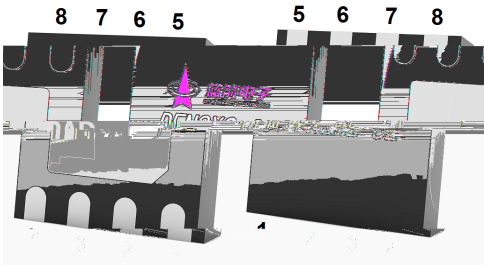


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BRCL4079ZZ-4.2	/	ı	ı		ı
BRCL4079ZZ-4.2 ǎ		ψ		USB	ı
BRCL4079ZZ-4.2	PMOSFET	ı	ı		j



4X YFF 1 YFF FLQ i i 717Ω i ß YFF
ψ
5X FH 0 j PFX i FH 0 JQG EUF07379J J0715 * 1 j FH 0 YFF



PIN Num.	Symbol	Function
1	TEMP	
2	SUR J	J JQG
3	GND	3 0 3
4	VCC	
5	BAT	
6	STDBY	α
7	CHRG	
8	CE	i H i
HSDG	JQG	3 0 3

BRCL4079ZZ-4.2

Rev.B May.-2025



蓝箭电子
BLUE ROCKET ELECTRONICS

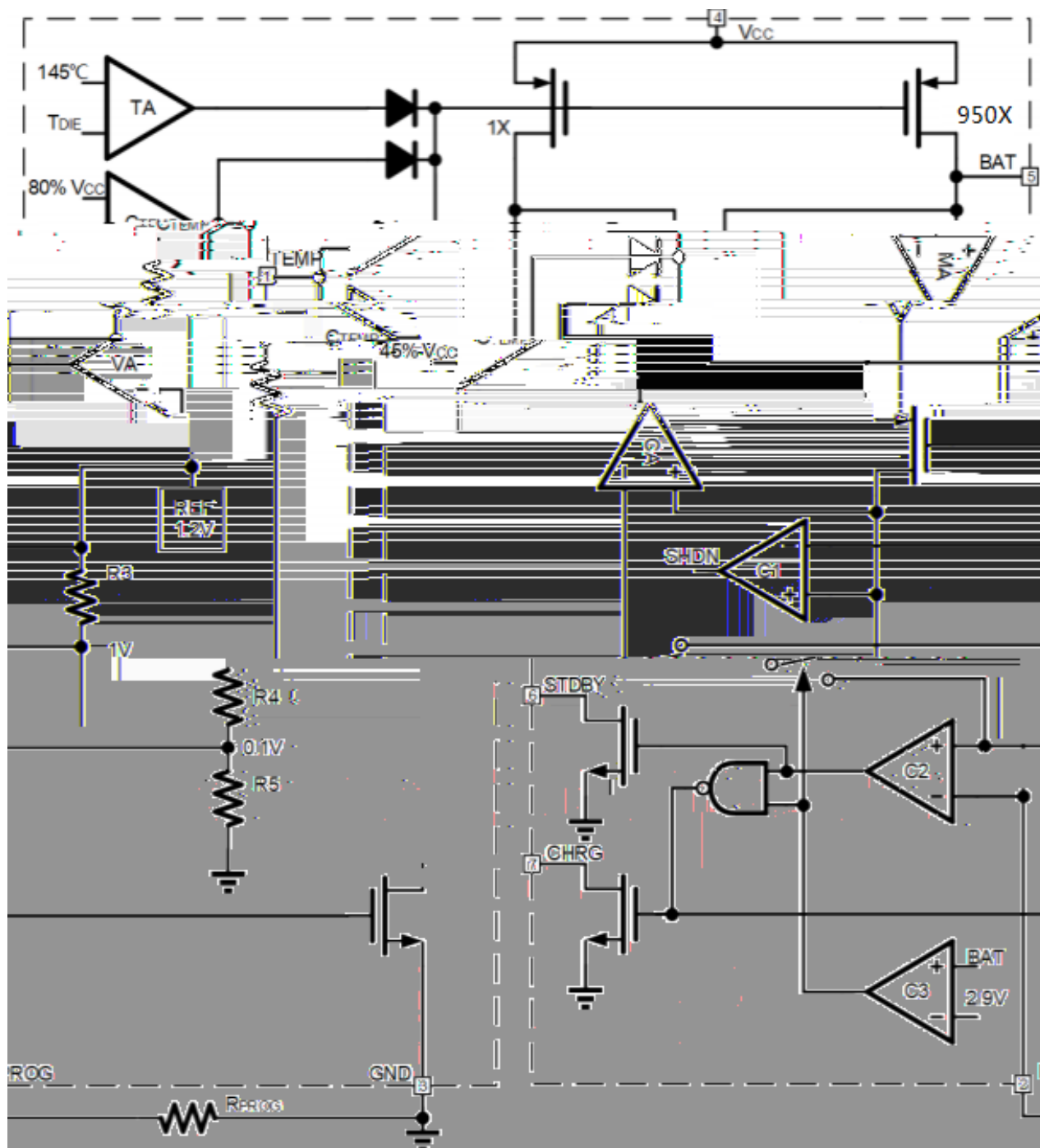
DATA SHEET

PARAMETER	SYMBOL	RATINGS	UNITS
VCC Pin Voltage	V_{VCC}	-0.3~36.0	V
BAT Pin Voltage	V_{BAT}	-4.2~18.0	
CHRG/STDBY Pin Voltage	$V_{CHRG/STDBY}$	-0.3~13.0	
PROG Pin Voltage	V_{PROG}	-0.3~5.5	
Other Pin Voltage	$V_{TEMP/GND/CE}$	-0.3~5.5	
Operating Ambient Temperature Range	T_{OP}	-40~+85	°C
Storage Temperature	T_{stg}	-65~+150	°C
Lead Temperature (Soldering, 10s)	T_{solder}	260	°C
ESD	HBM	2000	V
	CDM	1000	V

/ Electrical Characteristics($V_{CC}=5V, V_{BAT}=3.6V, T_a=25^{\circ}C$)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
V_{CC} Under voltage Lockout Hysteresis	$V_{CC_UV_HYS}$	V_{CC} from High to Low	100	200	300	mV
$V_{CC}-V_{BAT}$ Lockout Threshold	V_{ASD}	V_{CC} from Low to High	100	125	150	mV
		V_{CC} from High to Low	30	65	100	mV
C/10 Charging Termination Current	I_{TERM}	$R_{PROG}=1.0k$	62	95	128	mA
R_{PROG} voltage at Constant Current Mode	V_{PROG}	$R_{PROG}=1.0k$, Current mode	0.9	1.0	1.1	V
CHRG outputs low voltage	V_{CHRG}	$I_{CHRG}=5mA$		0.3	0.6	V
STDBY outputs low voltage	V_{STDBY}	$I_{STDBYG}=5mA$		0.3	0.6	V
Rechargeable Battery Voltage	ΔV_{RECHRG}	$V_{FLOAT}-V_{RECHRGH}$	100	150	200	mV
Junction temperature in limited temperature mode	T_{LIM}			145		$^{\circ}C$
Static Drain-Source On-Resistance	$R_{DS(on)}$			500		$m\Omega$
Soft start time	t_{ss}	$I_{BAT} = 0$ to $I_{BAT} = 950V/R_{PROG}$		20		μs
Recharge Comparator Filtering Time	$t_{RECHARG}$	V_{BAT} from High to Low	0.8	1.8	4.0	ms
Terminate comparator filtering Time	t_{TERM}	I_{BAT} drop to $I_{CHG}/10$	0.8	1.8	4.0	ms
PROG pin pull-up current	I_{PROG}			1.0		μA
TEMP high-side protection voltage	V_{TEMP-H}			80	82	$\%V_{CC}$
TEMP low-side protection voltage	V_{TEMP-L}		43	45		$\%V_{CC}$

/ Principle block diagram



/ Function description

BRCL4079ZZ-4.2 / 1

1.0A ε PCB ζ °1% 1

BRCL4079ZZ-4.2 P I MOSFET

% τ j % BRCL4079ZZ-4.2 USB T

VCC U UVLO i PROG U 1%

у BAT U H VTRIKL

BRCL4079ZZ-4.2 ω 1 1/10

ω α κ

BAT U 6 VTRIKL i % ω BAT

U 1 ε VFOLOAT ζ BRCL4079ZZ-4.2

6 1/10 у J

PROG U PROG U

950 i X

$R_{PROG}=950/I_{CHG}$ $I_{CHG}=950/R_{PROG}$

BAT U PROG U i X

$I_{BAT}=(V_{PROG}\times 950)/R_{PROG}$

0.5A 3 1 i H j у

ль ψ j 7 j : π RPROG

1/10
100mV
1.8ms
55µA
C/10
BAT
100mV
1.8ms
1/10
BRCL4079ZZ-4.2
DC
1/10
BRCL4079ZZ-4.2
BAT
4.05V
V_{RECHRG}

/ Function description

	λ° OHG FKUJ	λ° OHG VWGE\
λ B		
EDW $\tilde{0}$ 43uI +WHPS=JQG,	λ° OHG\ь λ° OHG 407s	

Თ Ბ	145	Ლ	Თ Ბ	Ბ
BRCL4079ZZ-4.2	Კ Თ	Თ	Თ Ბ	BRCL4079ZZ-4.2
	Თ Ბ	Თ Ბ	Თ Ბ	Თ Ბ

BRCL4079ZZ-4.2
 TEMP
 VLOW VHIGH
 80%×Vcc
 TEMP
 VTEMP<VLOW VTEMP>VHIGH
 TEMP
 VTEMP VLOW VHIGH
 NTC

/ Function description

[illegible]

$$V_{TEMPL} = \frac{R_2 || R_{TL}}{R_1 + R_2 || R_{TL}} V_{IN}$$

TH	TEMP	X
----	------	---

$$V_{TEMPL} = \frac{R_2 || R_{TH}}{R_1 + R_2 || R_{TH}} V_{IN}$$

$$\begin{aligned} V_{TEMP1} &= V_{HIGH} = k3 \times V_{cc} (k2 = 0.8) \\ &\times V_{cc} (k1 = 0.45) \quad V_{TEMPH} = V_{LOW} = k1 \times \end{aligned}$$

x

$$R1 = \frac{RTL \times RTH(k2 - k1)}{(RTL - RTH)k2 \times k1}$$

$$\frac{\text{RTL} \times \text{RTH}(k_2 - k_1)}{\text{RTL} \times \text{RTH}(k_2 - k_1) + \text{RTH}^2(k_2 - k_1)}$$

$$^* \quad \vee \quad \varepsilon \text{ PTC } \zeta \quad \check{\alpha} \quad \chi$$

$$R1 = \frac{RTL \times RTH(k2 - k1)}{(RTH - RTL)k2 \times k1}$$

$$R2 = \frac{RTL \times RTH(k2 - k1)}{RTH(k1 - k2 \times k1) - RTL(k2 - k2 \times k1)}$$

i	ò			ль	Vcc	н	льR1	R2	RTH	RTL
н ψ τ	RTH	RTL		н	q					
		л н				R2	j	α	R1	o
R1	ò	ψ		% j W						

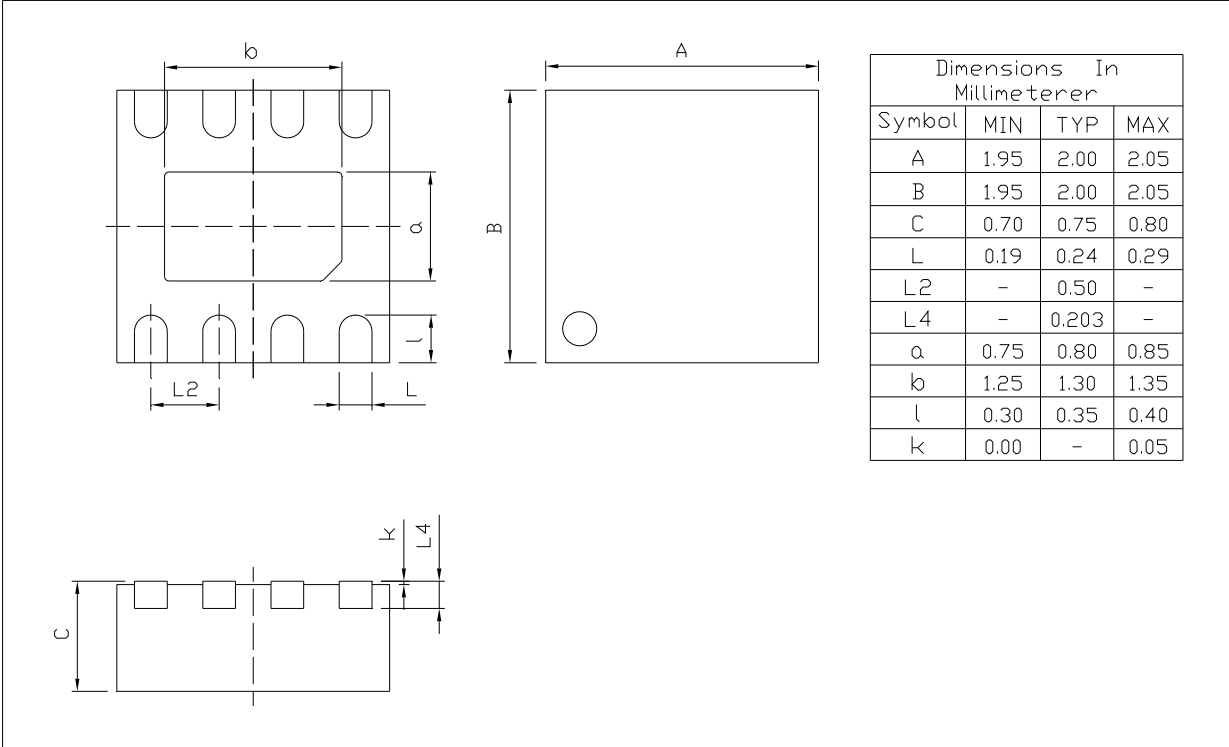
UVLO

BRCL4079ZZ-4.2 o 1.8ms BAT
4.05V 80% 90%
W CHRG
PROG HESR
PROG RPROG 20kΩ

/ Package Dimensions

DFN2×2-8L-0.75

Unit:mm



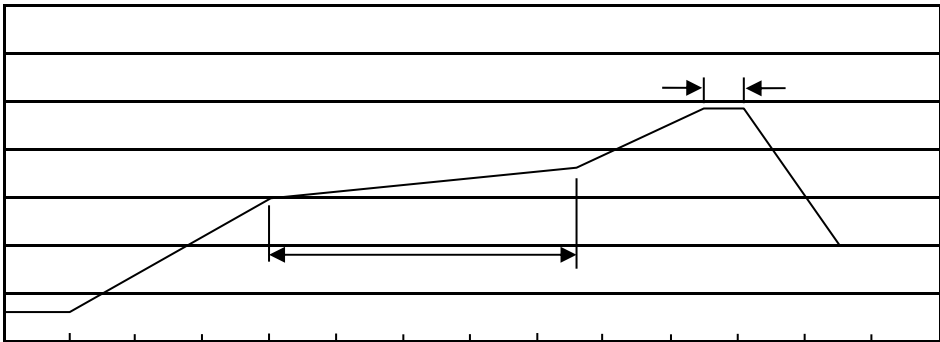
Rev.00 202012

/ Marking Instructions



X		
7379 X		
75 X	715Y	
---- X		Ψ

() /



- X

1

150 180

60 90sec;
- 2

245 ° 5

Δ 5 ° 0.5sec;
- 3

α

2 10 /sec.
- Note:

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

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

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

χ 260 ° 5 χ 10 ° 1 sec. Temp.:260±5 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
DFN2×2-8L	4,000	10	40,000	4	160,000	7 ×8	210×205×205	445×435×230

/ Notices

ω P 4

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