"Y

BRCL4079MF-4.2 /
BRCL4079MF-4.2 5V USB

MOSFET
4.2V
1/10 BRCL4079MF-4.2

BRCL4079MF-4.2 SOT23-6
-40 C +85 C

◕

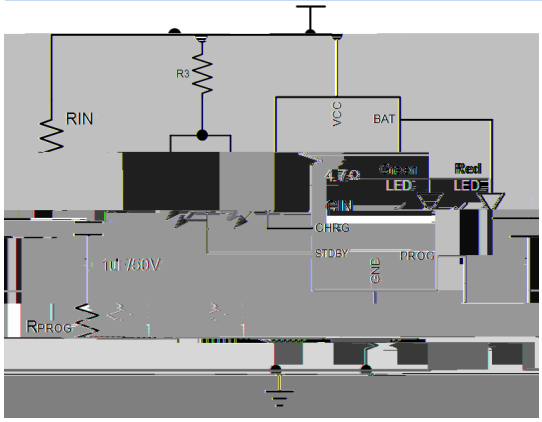
36V 6.1V
600mA
MOSFET
/
USB

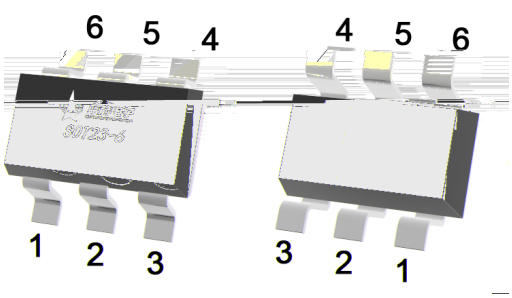
4.2V 1%
2.5V
C/10
55 A

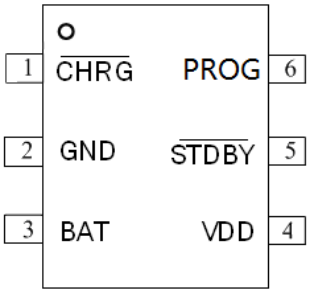
SOT23-6

ẓ ∀

ẓ ∀ = ε







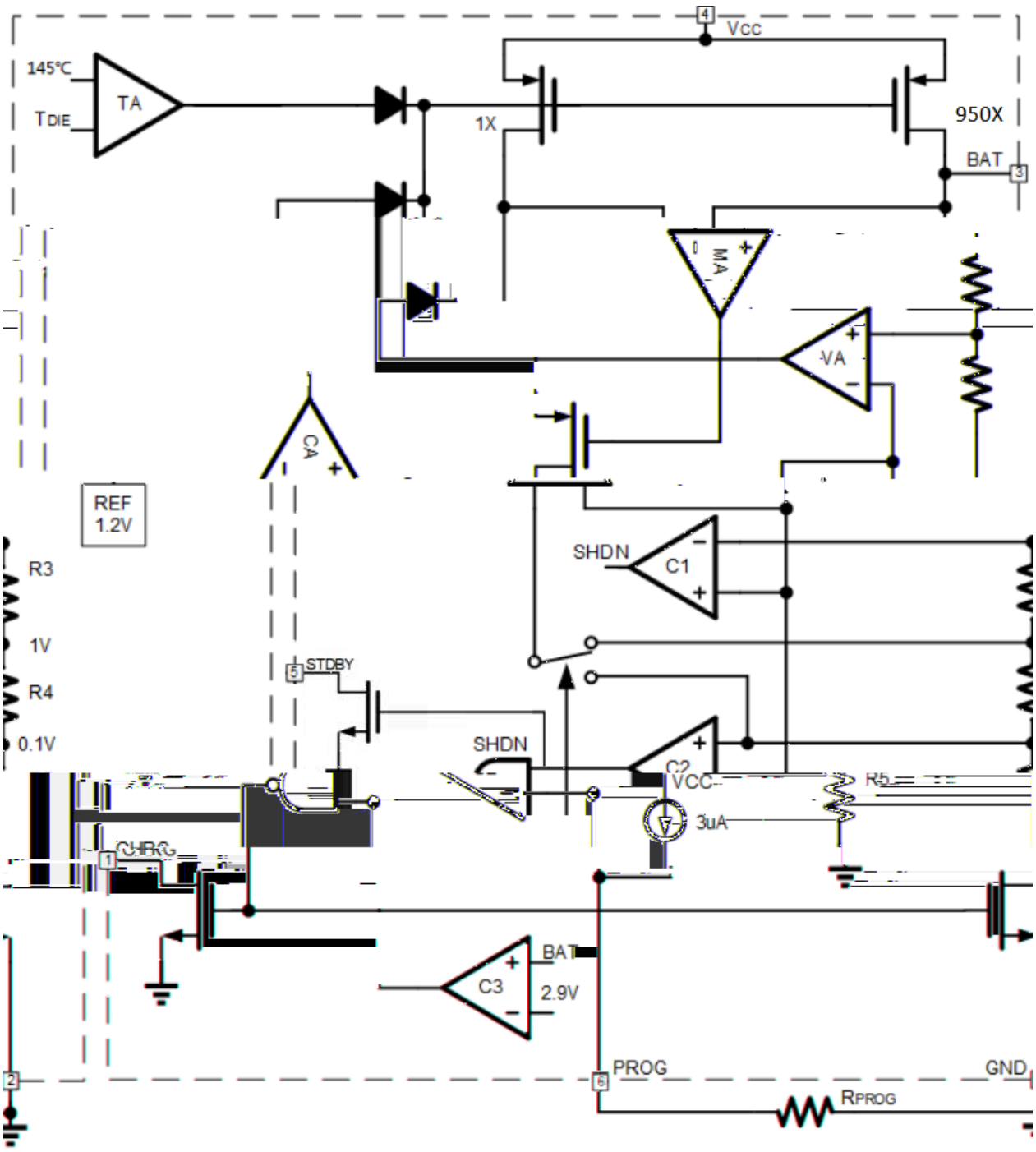
1	CHRG	
2	GND	
3	BAT	
4	VCC	
5	STDBY	
6		

Input Pin Voltage	V_{VCC}	-0.3~36	V
BAT Pin Voltage	V_{BAT}	-4.2~18	
Other Pin Voltage	V_{PROG}	-0.3~5.5	
CHRG/STDBY Pin Voltage	$V_{CHRG/STDBY}$	-0.3~13	
Storage Temperature	T_{stg}	-65~+150	
Junction Temperature	T_J	150	
Operating Ambient Temperature Range	T_{OP}	-40~+85	
Lead Temperature (Soldering, 10s)	T		

≠ ∧∃Å

Input Voltage Range	V_{CC}		4.5	5	36	V
Quiescent Supply Current	I_Q	Charge Mode R_{PROG}=2.0k		240	360	μA
		Standby Mode (Charge Terminated)		220	300	μA
		Shutdown Mode (R_{PROG} Not Connected, V_{CC} < V_{BAT}, or V_{CC} < V_{UV})		220	300	μA
		OVP state		120	250	μA
Regulated Output (Float)Voltage	V_{FLOAT}	0 ≤T_A≤85 , R_{PROG} = 2.0k	4.158	4.200	4.242	V
BAT Pin Current	I_{BAT}	R_{PROG} =2.0k, Current Mode	427.5	475	522.5	mA
		Standby Mode, V_{BAT} = 4.2V	0	-2.5	-6	μA
		Shutdown Mode (R_{PROG} Not Connected)		±1	±2	μA
		Sleep Mode, V_{CC} = 0V		-1	-2	μA
Trickle Charge Current	I_{TRIKL}	V_{BAT} < V_{TRIKL}, R_{PROG} = 2.0K	35	47.5	60	mA
Trickle Charge Threshold Voltage	V_{TRIKL}	R_{PROG} = 2.0k, VBAT Rising	2.3	2.5	2.7	V
Trickle Charge Hysteresis Voltage	V_{TRHYS}	R_{PROG} =2.0k	120	160	200	mV
VCC Undervoltage Lockout Threshold	V_{UV}	From V_{CC} Low to High	3.5	3.7	3.9	V
VCC Undervoltage Lockout Hysteresis	V_{UVHYS}	From V_{CC} High to Low	100	200	300	mV
VCC-VBAT Lockout Threshold Voltage	V_{ASD}	V_{CC} from Low to High	100	125	150	mV
		V_{CC} from High to Low	30	65	100	mV
C/10 Termination Current Threshold	I_{TERM}	R_{PROG} = 2.0k	35	47.5	60	mA
PROG Pin Voltage	V_{PROG}	R_{PROG} = 2.0k, Current Mode	0.9	1.0	1.1	V
CHRG Pin Output Low Voltage	V_{CHRG}	I_{CHRG} = 5mA		0.3	0.6	V
STDBY Pin Output Low Voltage	V_{STDBY}	I_{STDBG} =5mA		0.3	0.6	V
Recharge Battery Threshold Voltage	ΔV_{RECHRG}	V_{FLOAT} - V_{RECHRG}	100	150	200	mV
Junction Temperature in Constant Temperature Mode	T_{LIM}			145		
Soft-Start Time	t_{SS}	I_{BAT} = 0 to I_{BAT} =950V/R_{PROG}		20		μs
Recharge Comparator Filter Time	$t_{RECHARGE}$	V_{BAT} High to Low	0.8	1.8	4.0	ms
Termination Comparator Filter Time	t_{TERM}	I_{BAT} Falling Below I_{CHG}/10	0.8	1.8	4.0	ms
PROG Pin Pull-Up Current	I_{PROG}			1.0		μA

υ Þ ‘ ƒ


4
VCC
145℃
TDIE
TA
1X
950X
BAT
3
MA
VA
CA
REF
1.2V
R3
1V
R4
0.1V
SHDN
C1
5
STDBY
SHDN
C2
VCC
3uA
R5
CHRG
1
BAT
C3
2.9V
2
PROG
6
GND
RPROG

ה ﺍ"Yﺵ

ה ﺍ"Yﺵ

BRCL4079MF-4.2 / PCB

600mA 1% BRCL4079MF-4.2 P MOSFET

BRCL4079MF-4.2 USB

₇ ẁ ₣ ≠ ^ Ī

VCC UVLO 1% PROG

BAT 2.5V

BRCL4079MF-4.2 1/10

BAT 2.5V BAT

4.2V BRCL4079MF-4.2

1/10

√ ₣ ≠ ≠ ∫

PROG PROG 950

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

PROG BAT

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

ה ׳ר״Yש

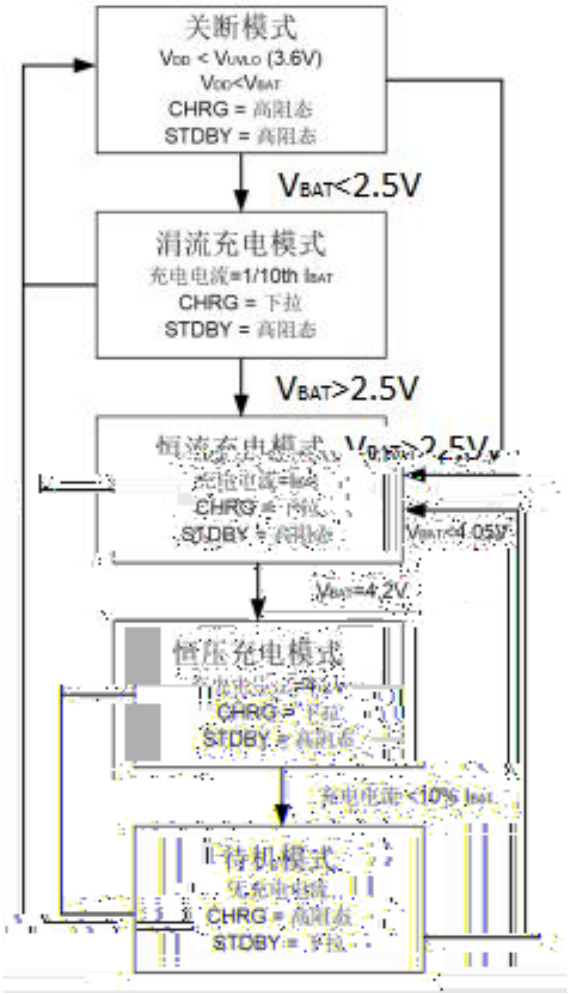
ƒ ≠ ˥ ₆

1/10

PROG PROG 100mV tTERM

BRCL4079MF-4.2 55 A

C/10



n ﾉ"Yﾃ

ƒ ≠ ◦ ĩ ˆ

	LED CHRG	LED STDBY
UVLO		
BAT 10 F		

ä˙

145 C

BRCL4079MF-4.2

BRCL4079MF-4.2

ᴘ ₣ Ḧ α β

VCC

UVLO 200mV MOSFET VCC

30mV UVLO UVLO

VCC 100mV

ˋ n q ƒ ≠

BRCL4079MF-4.2 1.8ms $t_{RECHARGE}$

BAT 4.05V 80% 90%

CHRG

ה ׳ר Yש

~ Ë ׳ ׳ ׳

PROG PROG

20k

PROG 100kHz

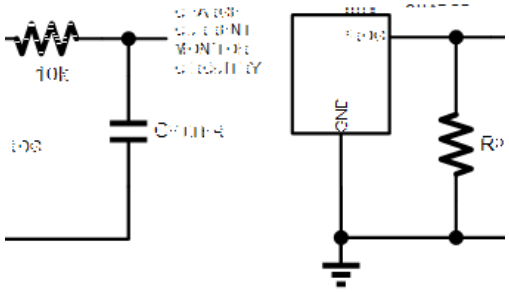
PROG CPROG RPROG

$$R_{PROG} \leq \frac{1}{2\pi \cdot 10^5 \cdot C_{PROG}}$$

BAT

PROG RC PROG

10k

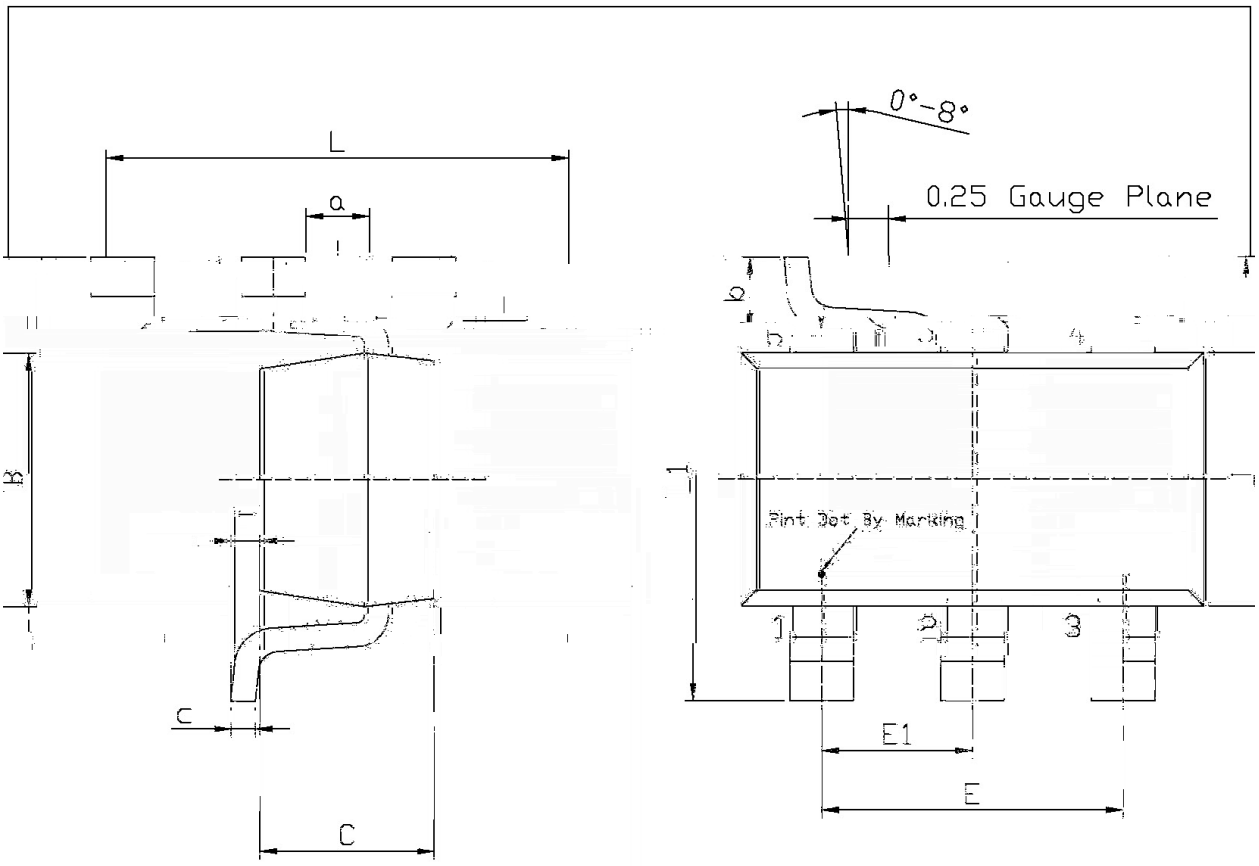


ה ׳

PCB P_D

$$T_J = P_D \times \theta_{JA} + T_A$$

ᵘ ĖÒĻ ƒ



Unit: mm

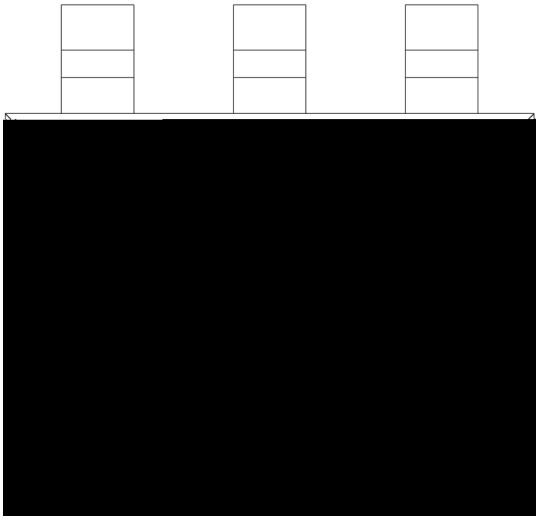
Symbol	Dimensions In Millimeters	
	Min	Max
E1	0.85	1.05
a	0.35	0.50
c	0.10	0.20
b	0.35	0.55
F	0	0.15

Symbol	Dimensions In Millimeters	
	Min	Max
L	2.82	3.02
B	1.50	1.70
C	0.90	1.30
L1	2.60	3.00
E	1.80	2.00

3-6

SOT2

Ł. Ļ Ω



ѭ ʃ ╕ ẘ ´E ⅵ ƒ ѽ ѕ Wh p shudwxuh Suriloh iru LU Uhio r z Vroghulq j+Se0luhh,

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.

⅃ ѝ ɋ ¯ ` Y Ţ

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

ɒ Ŀ ⊄ —

/ REEL