

/ Descriptions

BRCL4079MF-4.2	/	5V	USB
MOSFET			
4.2V	1/10	BRCL4079MF-4.2	
SOT23-6			
-40℃ ~ +85℃			

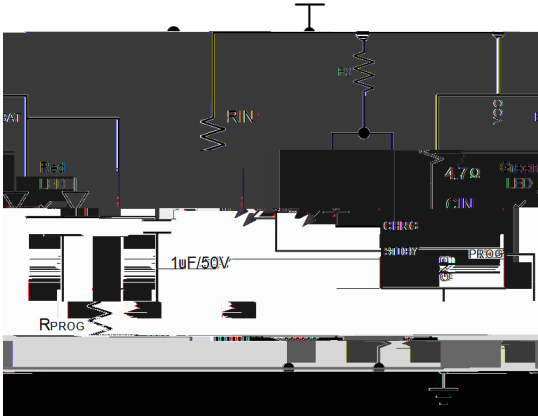
/ Features

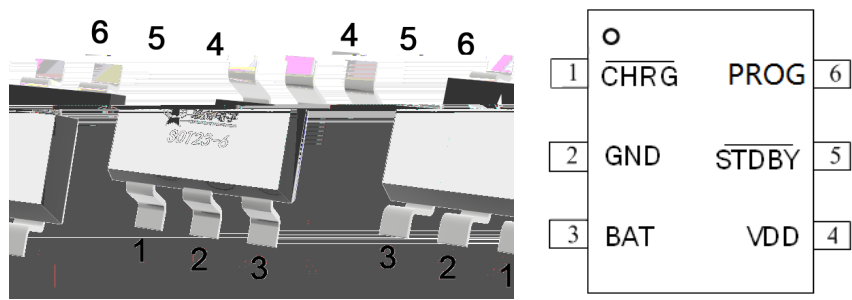
36V	6.1V
	600mA
MOSFET	
/	
USB	
4.2V	1%
2.5V	
C/10	
55μA	
SOT23-6	

/ Applications

SGD PS3

/ Application Circuit





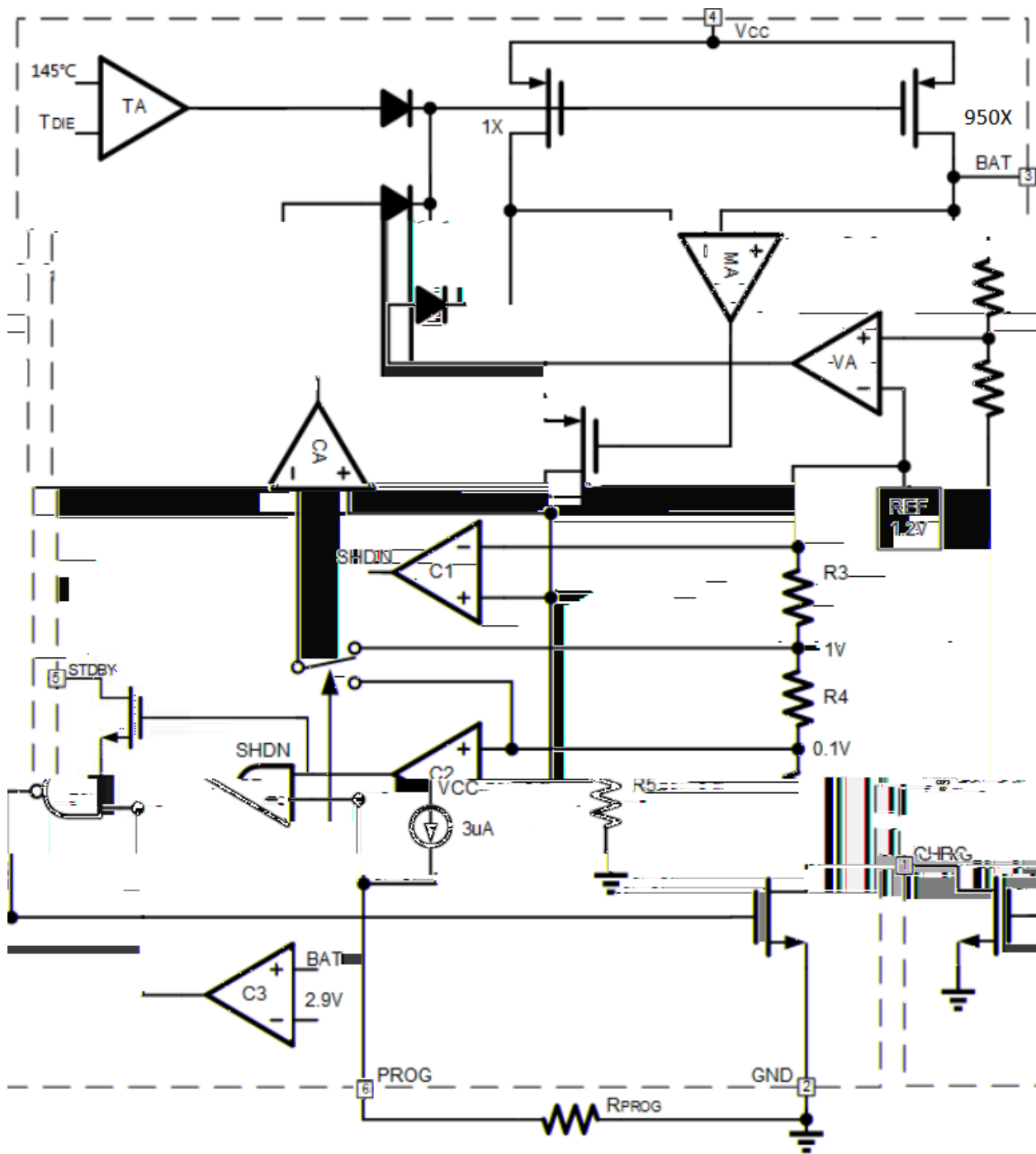
PIN Num.	Symbol	Function
1	CHRG	
2	GND	Q
3	BAT	
4	VCC	
5	STDBY	
6	SUR J	

PARAMETER	SYMBOL	RATINGS	UNITS
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		

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

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
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}	$0 \leq T_A \leq 85^\circ C$, $R_{PROG} = 2.0k$	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}	$R_{PROG} = 2.0k$, V_{BAT} 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

/ Principle block diagram

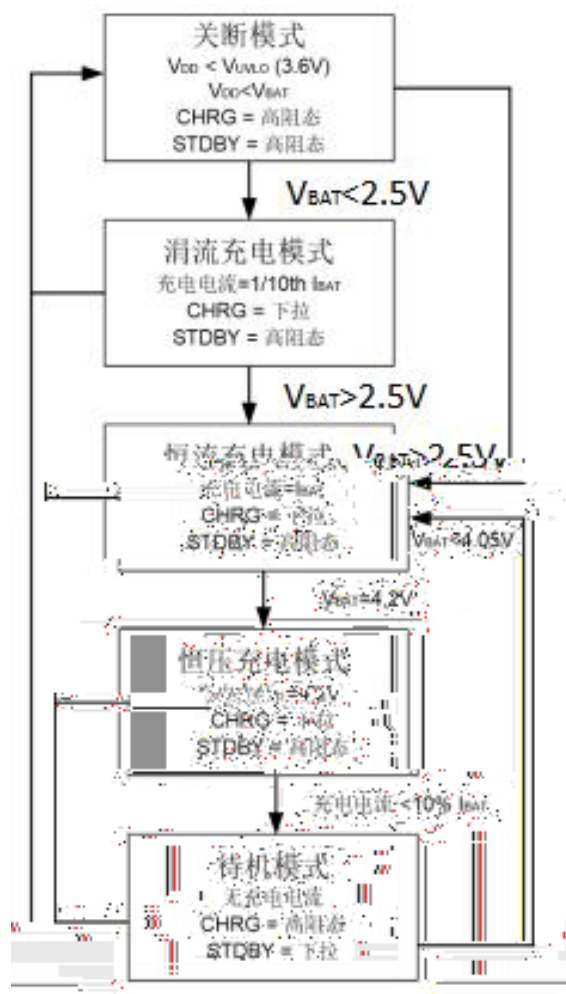


/ Function description

BRCL4079MF-4.2	/	PCB
600mA	° 1%	BRCL4079MF-4.2
MOSFET	ψ	P
BRCL4079MF-4.2	USB	
VCC	UVLO	PROG
	BAT	2.5V
BRCL4079MF-4.2	1/10	
BAT	2.5V	BAT
ε 4.2V ζ	BRCL4079MF-4.2	
1/10		
PROG	PROG	950
	X	
	$R_{PROG}=950/I_{CHG}$	$I_{CHG}=950/R_{PROG}$
PROG	BAT	X
	$I_{BAT}=(V_{PROG}\times 950)/R_{PROG}$	

/ Function description

1/10
 PROG
 100mV
 tTERM
 55μA
 BRCL4079MF-4.2
 C/10
 EDW
 100mY
 1. mv
 SUR J
 ε W_{WHUP} ζ
 1/10
 EUF040: P I-4.2
 EDW
 EUF040: P I-4.2
 4.05Y
 SUR J
 ε





EUF040: P I-4.2

FKUJ VWGEY

EUF040: P I-4.2

FKUJ ĩ τ FKUJ

VWGEY ĩ

ŷ

FKUJ VWGEY

EDW

10μI ħ

0HGЉ 0HG 1-4v

	LED	LED
	CHRG	STDBY
UVLO		
BAT 10μF ħ	0HGЉ 0HG 1-4v	

α ŷ i

ε 145℃ ζ i

I

BRCL4079MF-4.2 P

I

ĩ

j BRCL4079MF-4.2

ĩ ε ε

ζ ŷ

ĩ

UVLO

VCC i

i

ħ

UVLO τ 200mV

I MOSFET

VCC

ĩ

30mV UVLO

ħ UVLO

j ħ

VCC i

i 100mV

ñ

BRCL4079MF-4.2 τ 1.8ms

ε tRECHARGE ζ

BAT i

ĩ 4.05V ĩ ε Ą Z

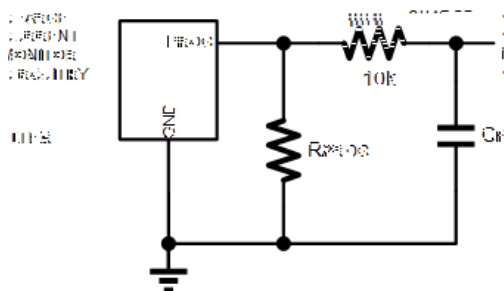
80% 90% ζ

τ

CHRG

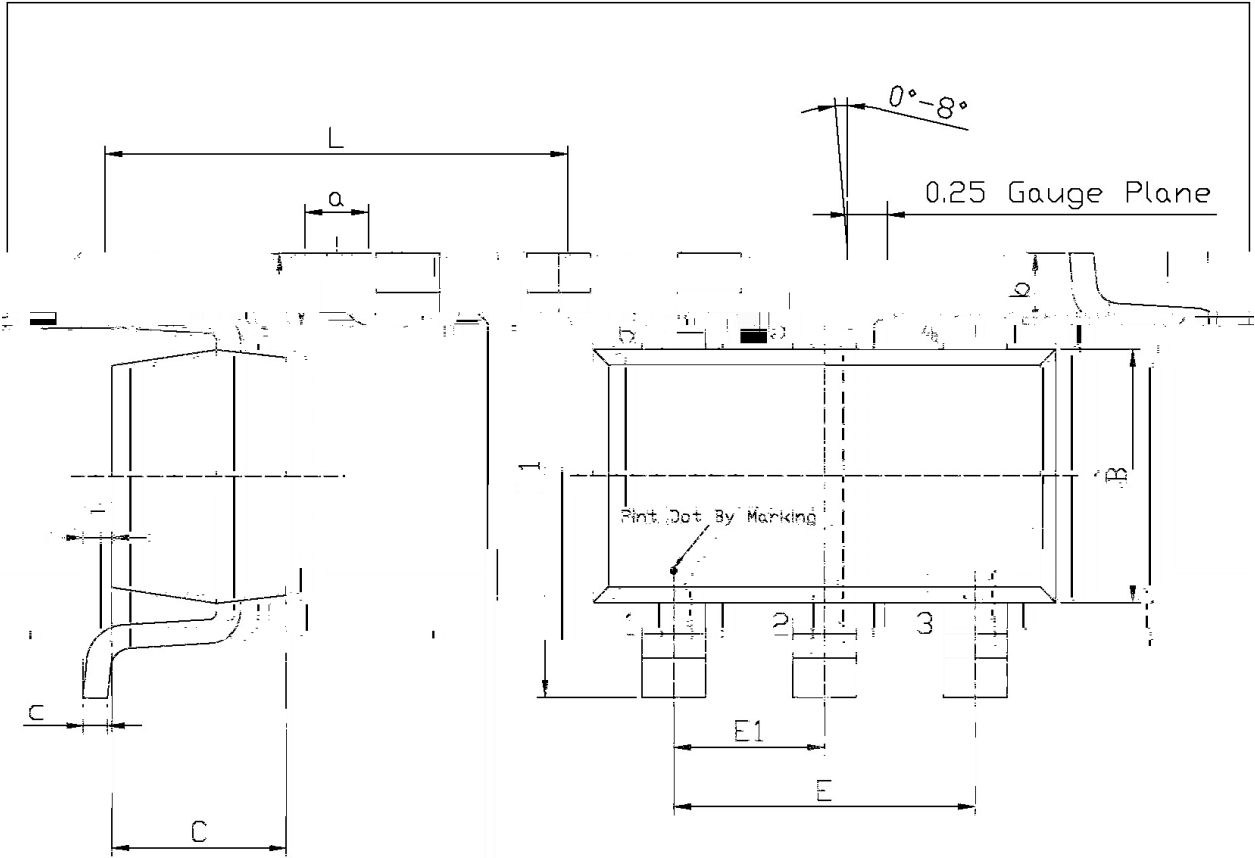
/ Function description

[illegible]



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

/ Package Dimensions



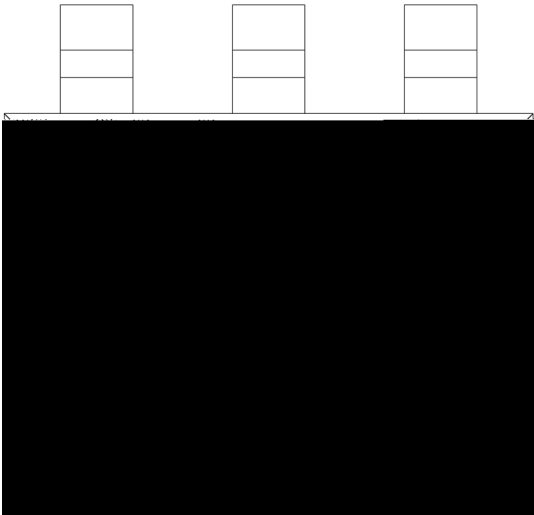
Unit: mm

Dimensions In Millimeters	
Min	Max
0.85	1.05
0.35	0.50
0.10	0.20
0.35	0.55
0	0.15

Symbol	Dimensions In Millimeters		Symbol	Dim
	Min	Max		
L	2.82	3.32	E1	
B	1.50	1.70	a	
C	0.90	1.30	c	
L1	2.60	3.00	b	
E	1.80	2.00	F	

SOT23-6

/ Marking Instructions



X

40: -42 X

**** X

ψ

() /

X					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