

/ Descriptions

BRCL4058MME-4.2	30V	OVP	500mA
/			
BRCL4058MME-4.2	P-MOSFET		
	4.2V		
BRCL4058MME-4.2			0.1uA
BRCL4058MME-4.2			
BRCL4058MME-4.2	USB		

/ Features

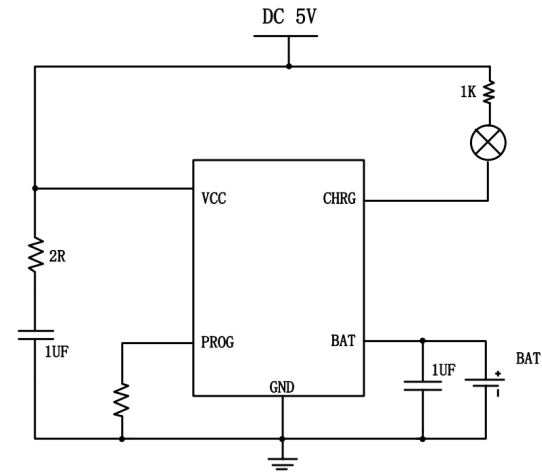
30V
6.8V OVP
30mA-500mA
/
±1%
2.8V
C/10

BAT
SOT23-5
RoHS

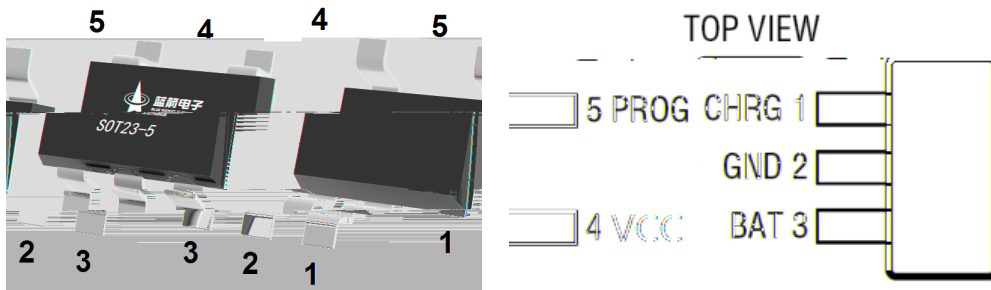
/ Applications

GPS

/ Application Circuit



/ Pinning



PIN Num.	Symbol	Function
1	CHRG	
2	GND	
3	BAT	
4	VCC	
5	PROG	

/ Absolute Maximum Ratings(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNITS
VCC/CHRG Pin Voltage	V _{VCC/CHRG}	-0.3~30	V
BAT Pin Voltage	V _{BAT}	-5~13	
PROG Pin Voltage	V _{PROG}	-0.3~6	
Operating Ambient Temperature Range	T _{OP}	-40~+85	℃
Storage Temperature	T _{stg}	-55~+150	℃
Lead Temperature (Soldering, 10s)	T _{solder}	260	℃
Junction-to-Ambient	R _{θJA}	240	/W
ESD	HBM	2000	V
	MM	200	V

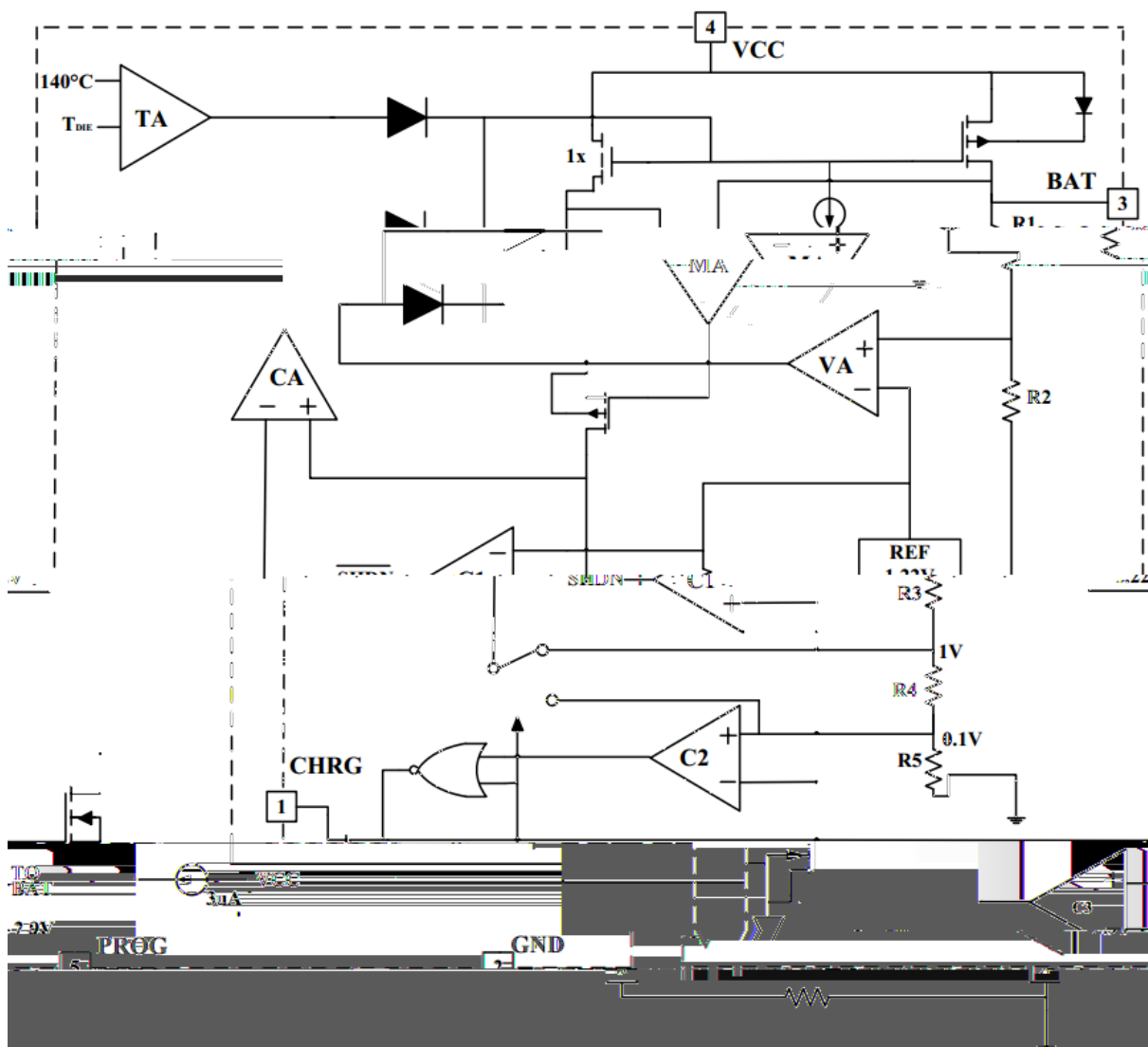
/ Electrical Characteristics(Ta=25℃)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Supply Voltage	V _{CC}			5.0		V
Maximum of Input Supply Voltage	V _{CC_MAX}				30	V
Input Over-Voltage Protection Voltage	V _{OVP}	V _{CC} from Low to High		6.8		V

/ Electrical Characteristics(Ta=25℃)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Power Supply OVP Hysteresis Voltage	V _{OVP_HYS}			500		mV
Input Power Supply Current	I _{CC}	Charging mode (R _{PROG} =10K)		300		μA
		Standby mode, charging terminated		100		μA
		Shutdown mode (R _{PROG} not connected, V _{CC} <V _{BAT} Or V _{CC} <V _{UV})		60		μA
Regulated Output (Float) Voltage	V _{FLOAT}	0 ≤ T _A ≤ 85	4.158	4.200	4.242	V
BAT Pin Current (The Constant Current Mode Mode Test Condition is V _{BAT} =4.0V)	I _{BAT}	R _{PROG} =10k, Constant Current Mode		98		mA
		R _{PROG} =1.8k, Constant Current Mode		550		mA
		V _{BAT} = V _{FLOAT} , Standby Mode		-2	-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} =1.8K		55		mA
Trickle Charge Threshold	V _{TRIKL}	R _{PROG} =10K V _{BAT} from Low to High		2.85		V
Trickle Charge Hysteresis	V _{TR_HYS}	R _{PROG} =1.8K		350		mV
V _{CC} undervoltage lockout threshold	V _{UV}	V _{CC} from Low to High		3.8		V
V _{CC} undervoltage lockout hysteresis	V _{UVHYS}			280		mV
V _{CC} -V _{BAT} lockout threshold voltage	V _{ASD}	V _{CC} from Low to High V _{CC} from High to Low		200 100		mV
C/10 Charging Termination Current	I _{TERM}	R _{PROG} =10K R _{PROG} =1.8K		10 55		mA
R _{PROG} voltage at Constant Current Mode	V _{PROG}	R _{PROG} =1.8K, Constant Current Mode	0.9	1.0	1.1	V
CHRG pin outputs low voltage	V _{CHRG}	I _{CHRG} =5mA		0.6		V
Rechargeable Battery Voltage	ΔV _{RECHRG}	V _{FLOAT} -V _{RECHARGH}		100		mV
Junction Temperature in Limited Temperature Mode	T _{LIM}			140		
Static Drain-Source On-Resistance	R _{DS(on)}	Between V _{CC} and BAT		1100		mΩ
Soft start time	T _{SS}	I _{BAT} =0 to set value		20		μS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Recharge Comparator Filtering Time	$T_{RECHARG}$	V_{BAT} from High to Low		1		mS
Terminate the comparator filtering time	T_{TERM}	I_{BAT} drop to below $I_{CHARGE}/10$		2.5		mS
PROG pin pull-up current	I_{PROG}			0.3		μA



/ Function description

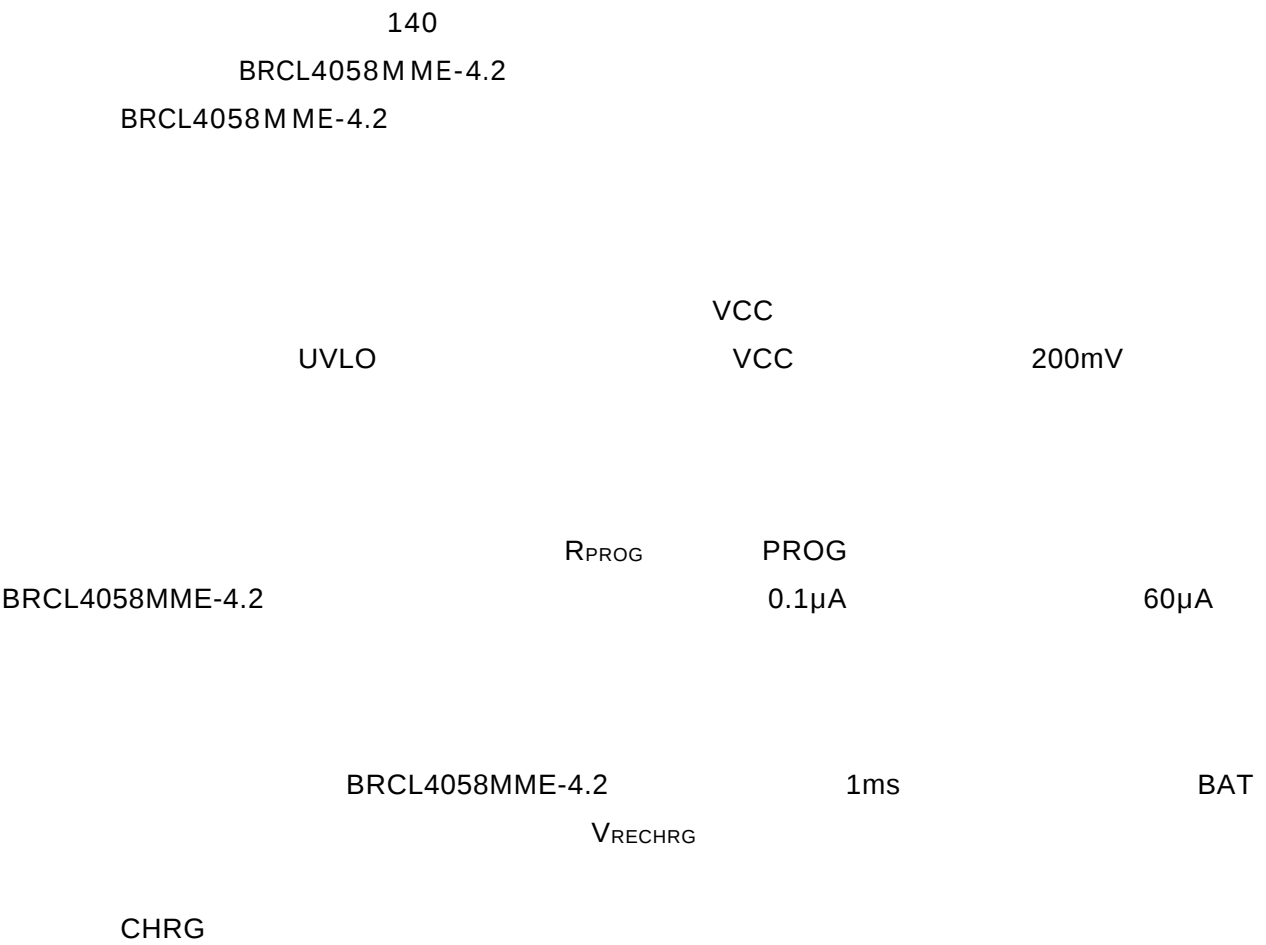
BRCL4058MME-4.2 /
500mA BRCL4058MME-4.2 USB

OVP
BRCL4058MME-4.2 OVP VCC 6.8V OVP
6.8V 6.3V
 $I_{CH} = 1000/R_{PROG}$ I_{CH} R_{PROG}
 R_{PROG} 200mA
 $R_{PROG} = 1000/0.2 = 5K\Omega$
 R_{PROG} 1%

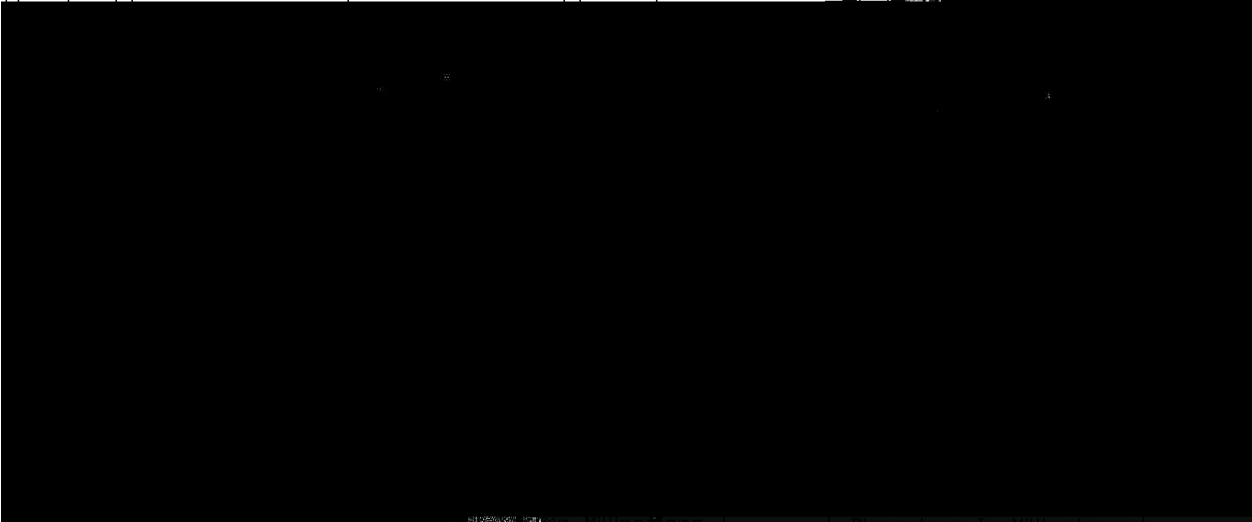
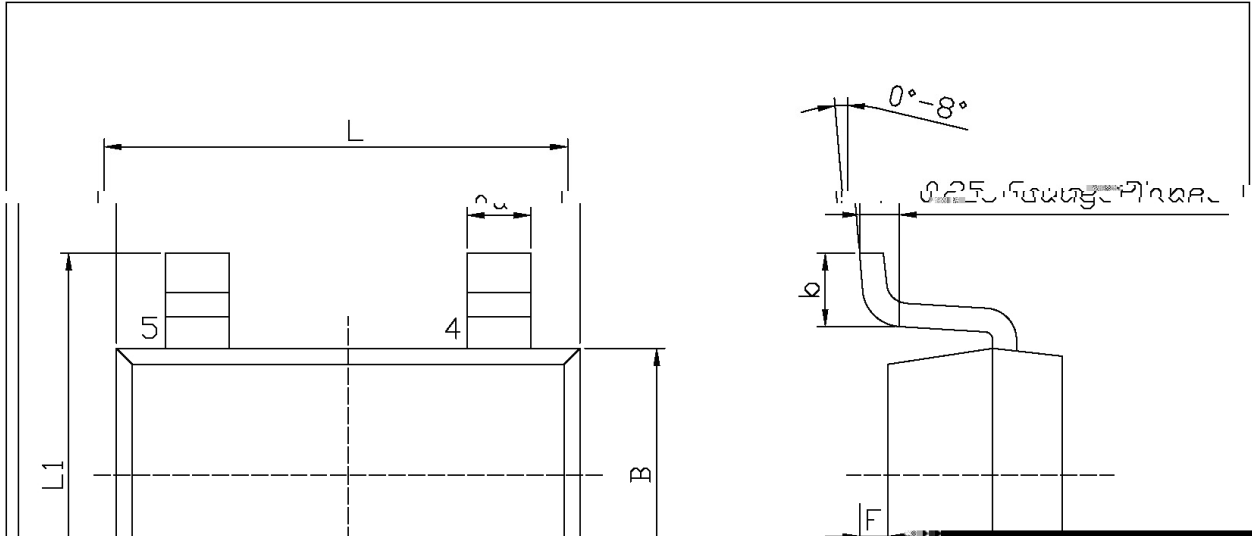
$R_{PROG}(K\Omega)$	$I_{CH}(mA)$
10	100
5	200
3.3	300
2	500

1/10
PROG 100mV
 T_{TERM} 2.5ms C/10
BAT PROG DC 1/10
100mV 1/10 BRCL4058MME-4.2
BAT
BRCL4058MME-4.2 BAT

/ Function description



/ Package Dimensions

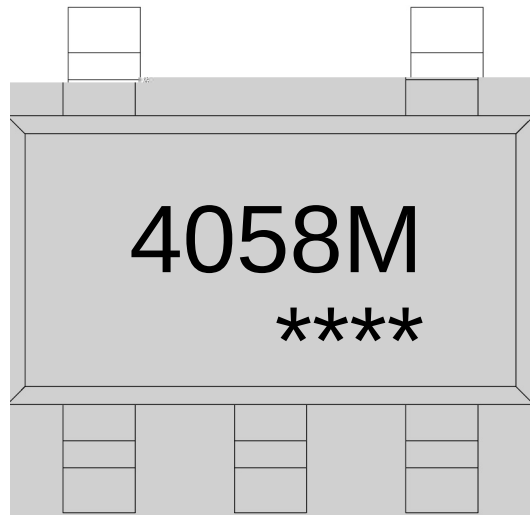


Symbol	Dimensions in Millimeters		Symbol	Dimensions in Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55



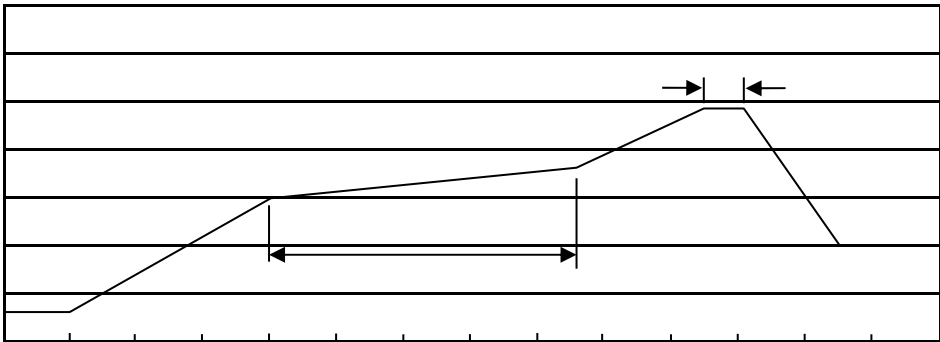


/ Marking Instructions



4058M

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



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

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
SOT23-5/6	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×435×230

/ Notices