

/ Descriptions

BRCL4058NSE	1A	/	BRCL4058NSE
P-MOSFET			4.2V
	4.2V	1/10	
BRCL4058NSE			

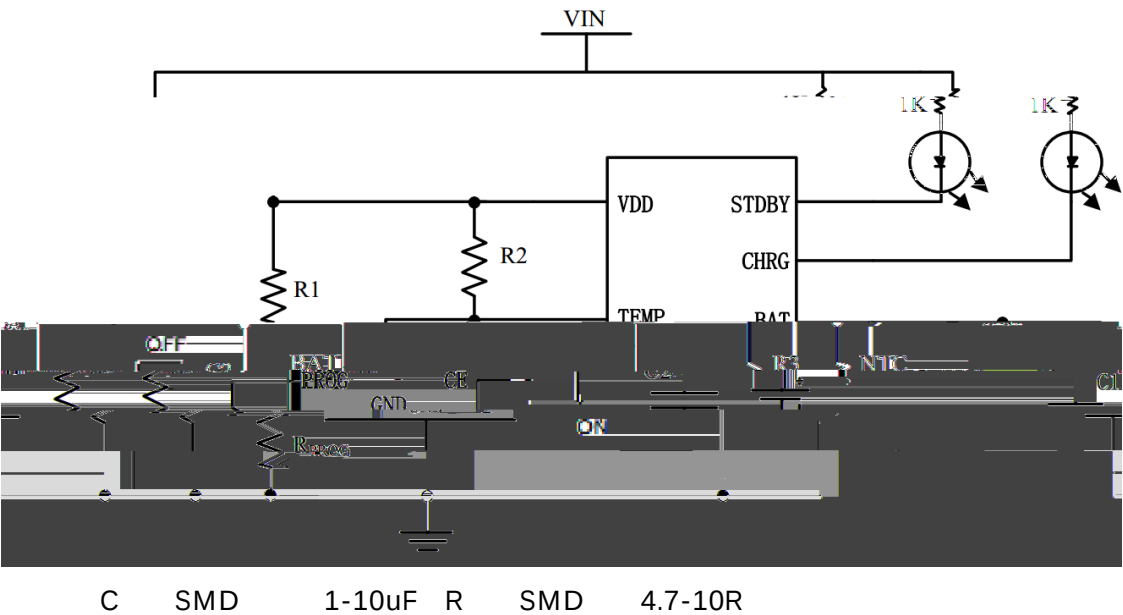
/ Features

	6.8V OVP
VDD	36V
0V	
	1A
/	/
2.8V	
ESOP-8	
RoHS	

/ Applications

USB

/ Application Circuit

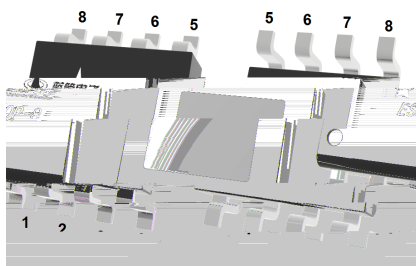


BRCL4058NSE-4.2

Rev.B Aug.-2025



DATA SHEET



PIN Num.	Symbol	Function
1	TEMP	
2	PROG	
3	GND	
4	VDD	5V
5	BAT	
6	STDBY	
7	CHRG	
8	CE	

PARAMETER	SYMBOL	RATINGS	UNITS
VDD/CHRG/STDBY Pin Voltage	$V_{VDD/CHRG/STDBY}$	-0.3~36	

/ Electrical Characteristics(Ta=25)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Power Supply						
Input Supply Voltage	V _{DD}		4.5	5.0	6.0	V
V _{DD} Under Voltage Lockout Threshold	V _{DD_UV}	V _{DD} from Low to High		3.8		V
V _{DD} Under voltage Lockout Hysteresis	V _{DD_UV_HYS}	V _{DD} from High to Low		200		mV
Input Over-Voltage Protection Voltage	V _{DD_OVP}		6.3	6.8	7.3	V
Input Over-Voltage Protection Voltage Hysteresis	V _{DD_OVP_HYS}			500		mV
Input Power Supply Current	I _{CC}	Charging mode (R _{PROG} =1K)		240	360	μA
		Standby mode, charging terminated		70	120	μA
		Shutdown mode (R _{PROG} not connected, V _{CC} <V _{BAT})		50	100	μA
Charging Current Setting						
R _{PROG} voltage at Constant Current Mode	V _{PROG}	V _{DD} =5V;R _{PROG} =1K	0.85	1	1.15	V
BAT Pin Current	I _{BAT}	V _{DD} =5V;V _{BAT} =3.6V R _{PROG} =1K		1000		mA
		V _{DD} not connected V _{BAT} =4V		0.5	1	μA
Trickle Charge Current	I _{TRIKL}	V _{BAT} V _{TRIKL} R _{PROG} =1K		100		mA
C/10 Charging Termination Current	I _{TERM}	R _{PROG} =1K		100		mA
Trickle Charge Threshold	V _{TRIKL}	V _{BAT} from Low to High		2.8		V
Trickle Charge Hysteresis	V _{TR_HYS}	V _{BAT} from High to Low		150		mV
Battery Terminal BAT						
Regulated Output (Float) Voltage	V _{FLOAT}	V _{DD} =5V;R _{PROG} =1K	4.158	4.2	4.242	V
Rechargeable Battery Voltage	V _{RECHRG}	V _{FLOAT} -V _{RECHARH}		150		mV
Recharge Comparator Filtering Time	T _{RECHARG}	V _{BAT} from High to Low	0.8	2	4	mS
Static Drain-Source On-Resistance	R _{DS(on)}	V _{BAT} =3.8V;R _{PROG} =1K		700		mΩ

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Indicator Pin Status CHRG/STDBY						
CHRG Pin Output Current	I _{CHRG}	V _{DD} =5V;V _{CHRG} =1V	1	2.5	5	mA
STDBY Pin Output Current	I _{STDBY}	V _{DD} =5V;V _{STDBY} =1V	1	2.5	5	mA
Internal Temperature Compensation						
Internal Temperature Compensation	T _{OTC}			140		
Overtemperature Detection Threshold	T _{OTPH}		1			

/ Function description

BRCL4058NSE / BRCL4058NSE

USB AC 1A , 36V 6.8V

VDD UVLO PROG 1% BAT 2.8V,

1/10

BAT 2.8V

BAT BRCL4058NSE

1/10

$I_{CH}=1000/R_{PROG}$ I_{CH}

R_{PROG} R_{PROG} 200mA

$R_{PROG}=1000/0.2=5K\Omega$

R_{PROG} 1%

R_{PROG}

$R_{PROG}(K\Omega)$	$I_{CH}(mA)$
1	1000
1.2	830
1.5	666
5	200

BAT BRCL4058NSE 2ms $T_{RECHARGE}$

4.05V 80 90

/ Function description

140 BRCL4058NSE

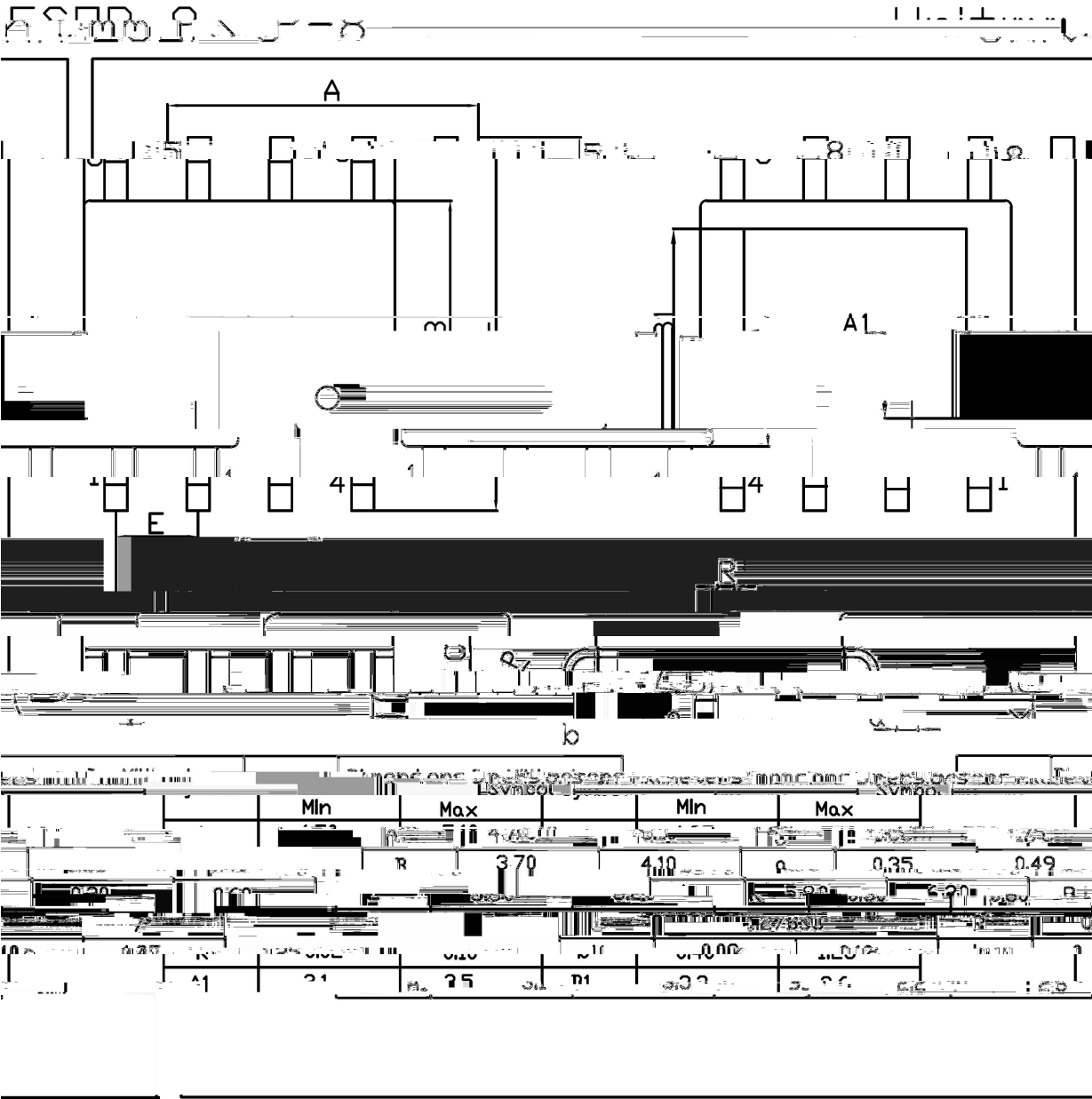
UVLO VDD VDD
VDD 200mV

BRCL4058NSE VDD
VDD

BRCL4058NSE CHRG STDBY
CHRG STDBY CHRG STDBY

	CHRG/	STDBY/
(TEMP)		
VDD		

/ Package Dimensions



() /

- 1

150 180

60 90sec;
- 2

245±5

5±0.5sec;
- 3

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.