/ Descriptions

BRCL3130DZZ MOSFET
MOSFET

BRCL3130DZZ DFN2×2-8L

/ Features

- 16mΩ MOSFET
- DFN2×2-8L
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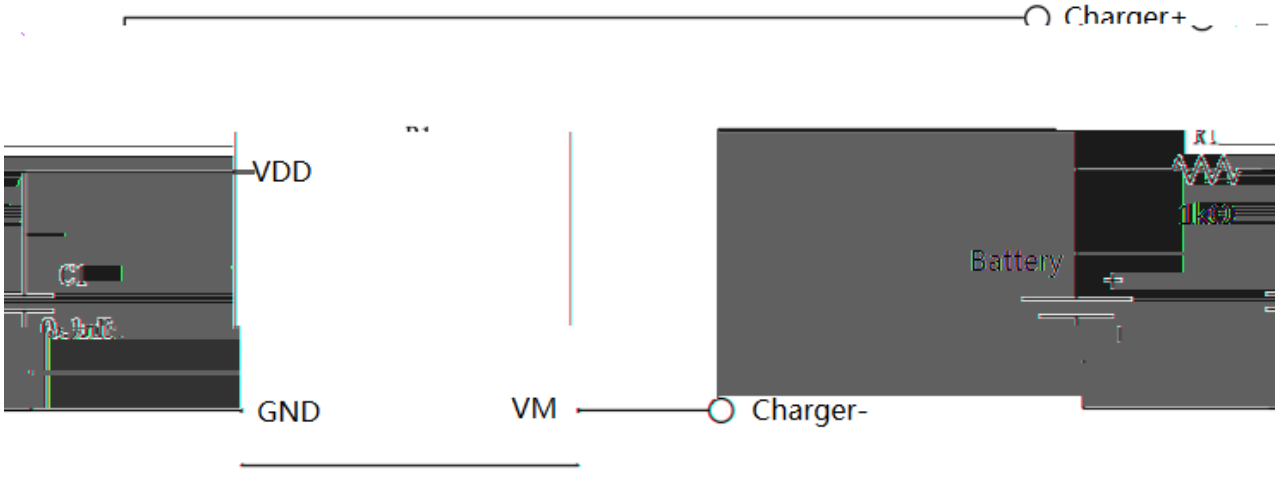
-
- 3.5 μA
- 0.6 μA
-

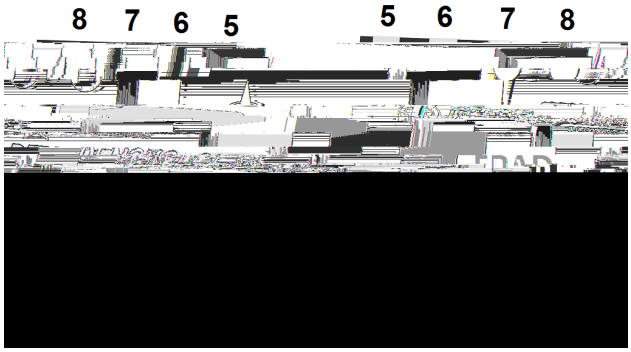
/ Applications

Single lithium ion rechargeable battery pack, single lithium polymer rechargeable battery pack.

/ Typical Application



R1 1kΩ -2kΩ , C1 0-1uF
R1 1K



Pin Number	Pin Name	Pin Description
1	VDD	
2,3,4	GND	
5,6,7,8	VM	
EPAD	GND	

/ Marking

/ Absolute Maximum Ratings(Ta=25)

/Parameter	/Symbol	/Value	/Unit
V_{DD} input pin voltage	V_{IN}	-0.3 to +8	V
V_{VM} input pin voltage	V_{VM}	-8 to +10	V
Maximum Junction Temperature	T_J	-40 to +145	
Storage Temperature	T_{stg}	-55 to +145	
ESD HBM Mode	ESD	± 4000	V

/ Electrical Characteristics(Unless otherwise specified,Ta=25)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Power supply						
Supply Voltage	V_{DD}		0		6	V
Charger input voltage	V_M		-6		6	V
Detection voltage						
Overcharge Detection Voltage	V_{OCV}		4.25	4.3	4.35	V
Overcharge Release Voltage	V_{OCR}		4.04	4.10	4.16	V
Overdischarge Detection Voltage	V_{ODV}		2.30	2.40	2.50	V
Overdischarge Release Voltage	V_{ODR}		2.90	3.00	3.10	V
Detection current						
Overdischarge Current Detection	I_{OCI}		9	11.5	14	A
Load Short-Circuiting Detection	I_{SHORT}		15	25	35	A
Overcharge Current Detection	I_{CHA}		7	10	13	A
Static current						
Current Consumption in Normal Operation	I_{OPE}	V_M=0V		3.5	7	μA
Current Consumption in Dormancy	I_{PDN}	V_{DD}=1.8V		0.6	1.5	μA
Pull-up and Pull-down Current from VM						
Internal pull-up current	I_{PU}			14		μA
Internal pull-down current	I_{PD}	V_M=1V		14		μA
Equivalent FET on Resistance						
Equivalent FET on Resistance	R_{DS}	I_{VM}=1A	12.5	16	18	mΩ

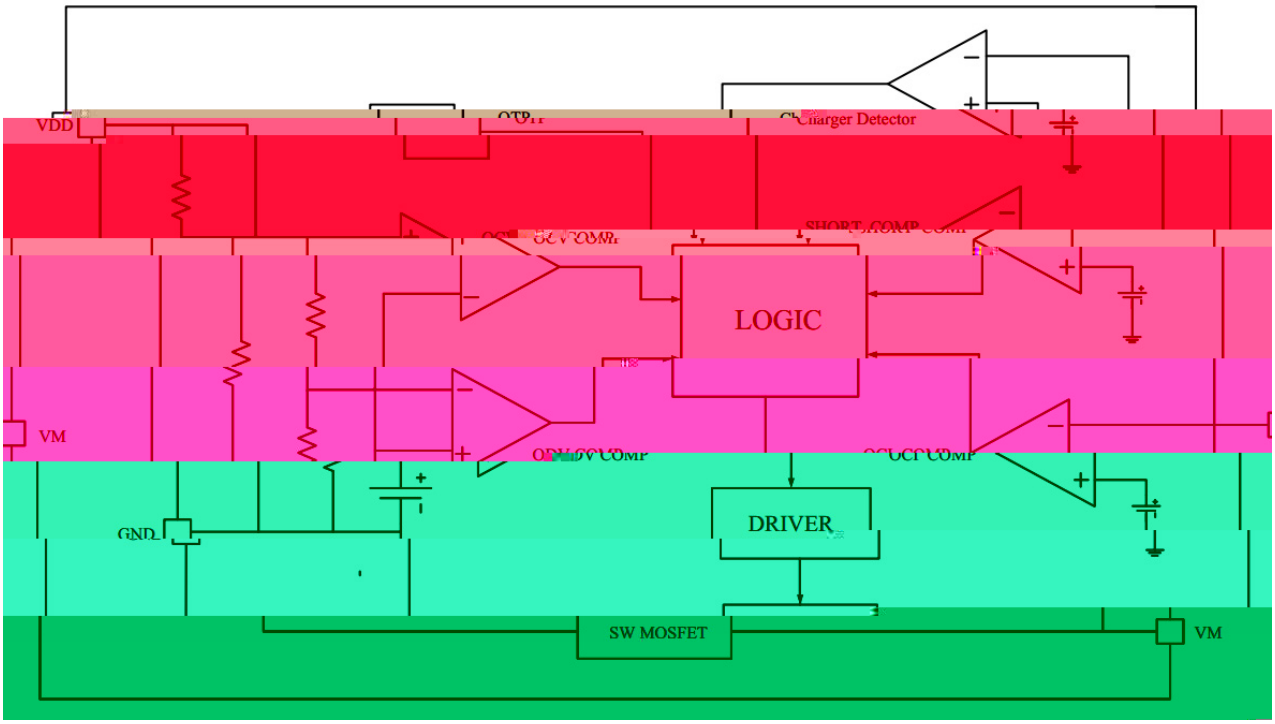
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Over temperature protection						
Over-temperature protection	OTP			145		
Over-temperature protection release temperature	OTPR			120		
Detection delay						
Overcharge Voltage Detection Delay Time	T_{OCV}			100		ms
Overdischarge Voltage Detection Delay Time	T_{ODV}			100		ms
Overdischarge Current1 Detection Delay Time	T_{IOV1}			8		ms
Overdischarge Current2 Detection Delay Time	T_{IOV2}			2		ms
Load Short-Circuiting Detection Delay Time	T_{SHORT}			150		μs

* (OTP) OTPR

*

/ Functionl Block D6Emram



/ Functional Description

BRCL3130DZZ

MOSFET 16mΩ

BRCL3130DZZ

/ Normal Operating mode

/ Overcharge Voltage Condition

(V_{OCV})

(T_{OCV}) BRCL3130DZZ MOSFET

(T_{OCV})

1 VM (V_{CHA}) (V_{OCR})

2 (Vocv)

/ Overcharge Current Condition

I_{CHA} (T_{OCI}) MOSFET

BRCL3130DZZ

/ Overdischarge Voltage Condition

(V_{ODV})

(T_{ODV}) BRCL3130DZZ

MOSFET VDD 2.3V ( )

(I_{PDN}). VDD 2.4V ( )

(V_{ODR}) BRCL3130DZZ

/ Overdischarge Current Condition

VM

VM

/ Load Short-circuiting Condition

VM (V_{SHORT})

T_{SHORT} VM

/ Charger Detection

VM (V_{CHA})

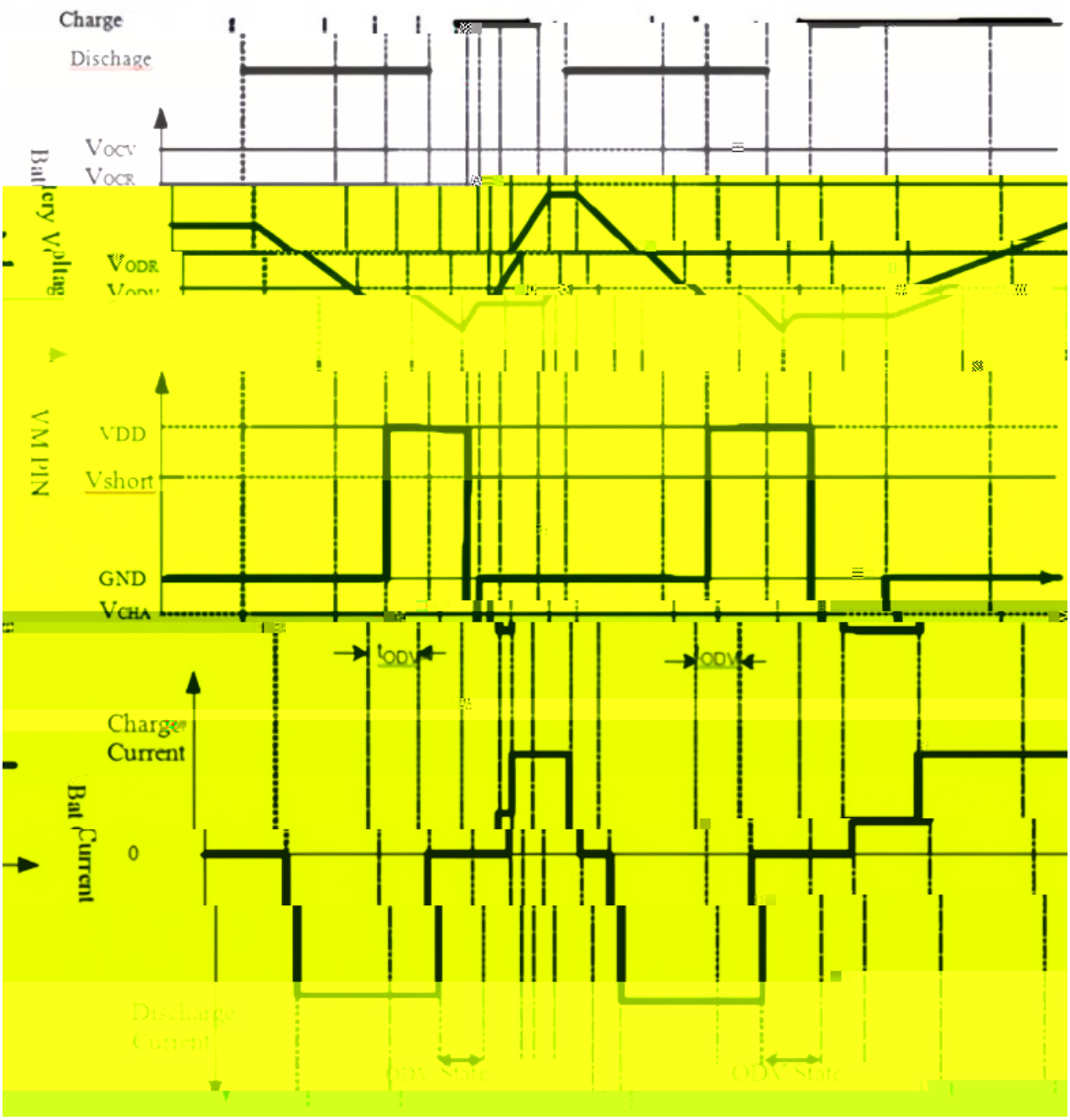
(V_{ODV}) BRCL3130DZZ

0V / 0V Battery Charging Function

0V 2.33k } | ḍ ϟ ă ɔ Ɫ %

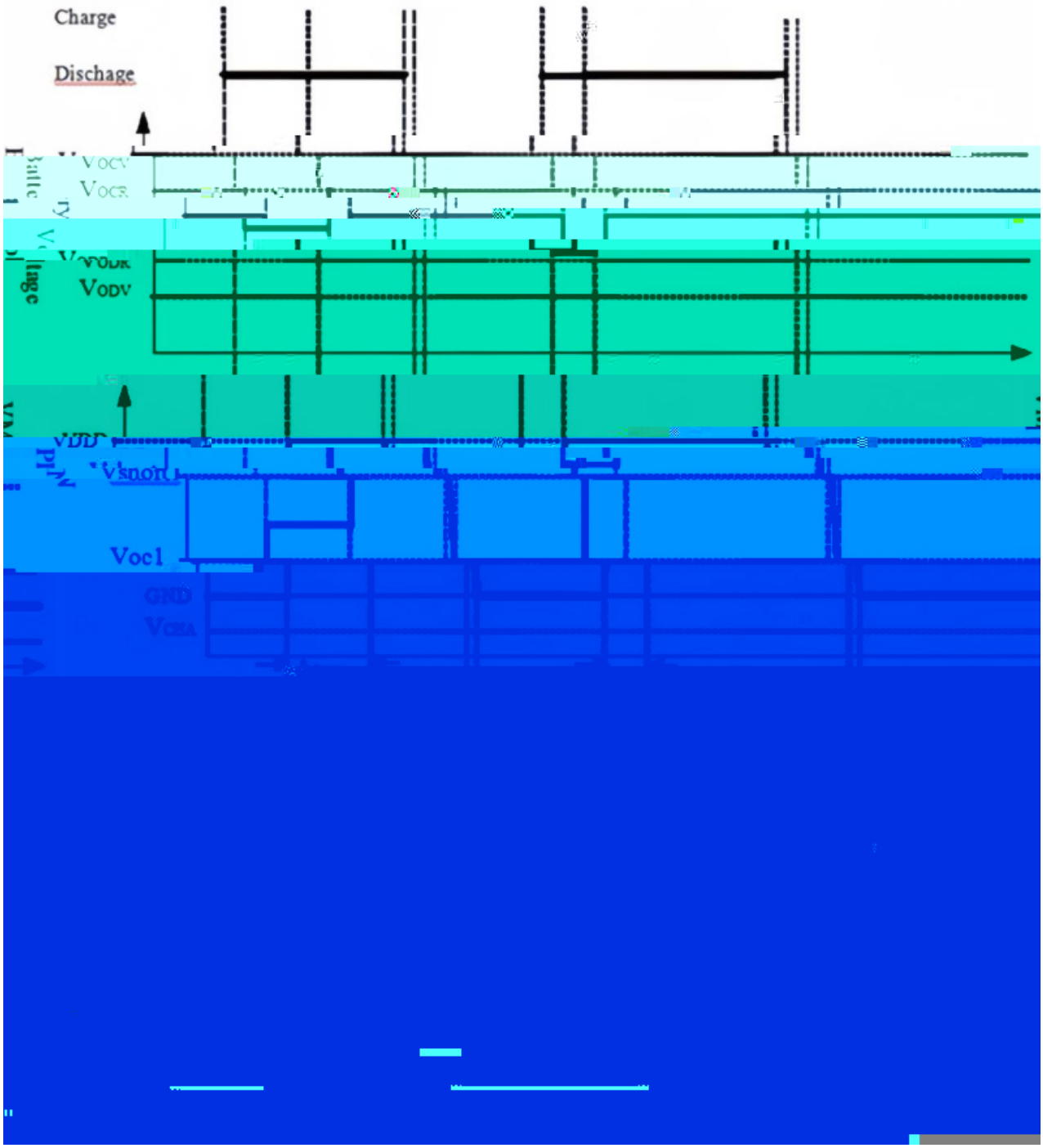
/ Timing Chart

→ → **/ Overdischarge → Charging → Normal Operation.**

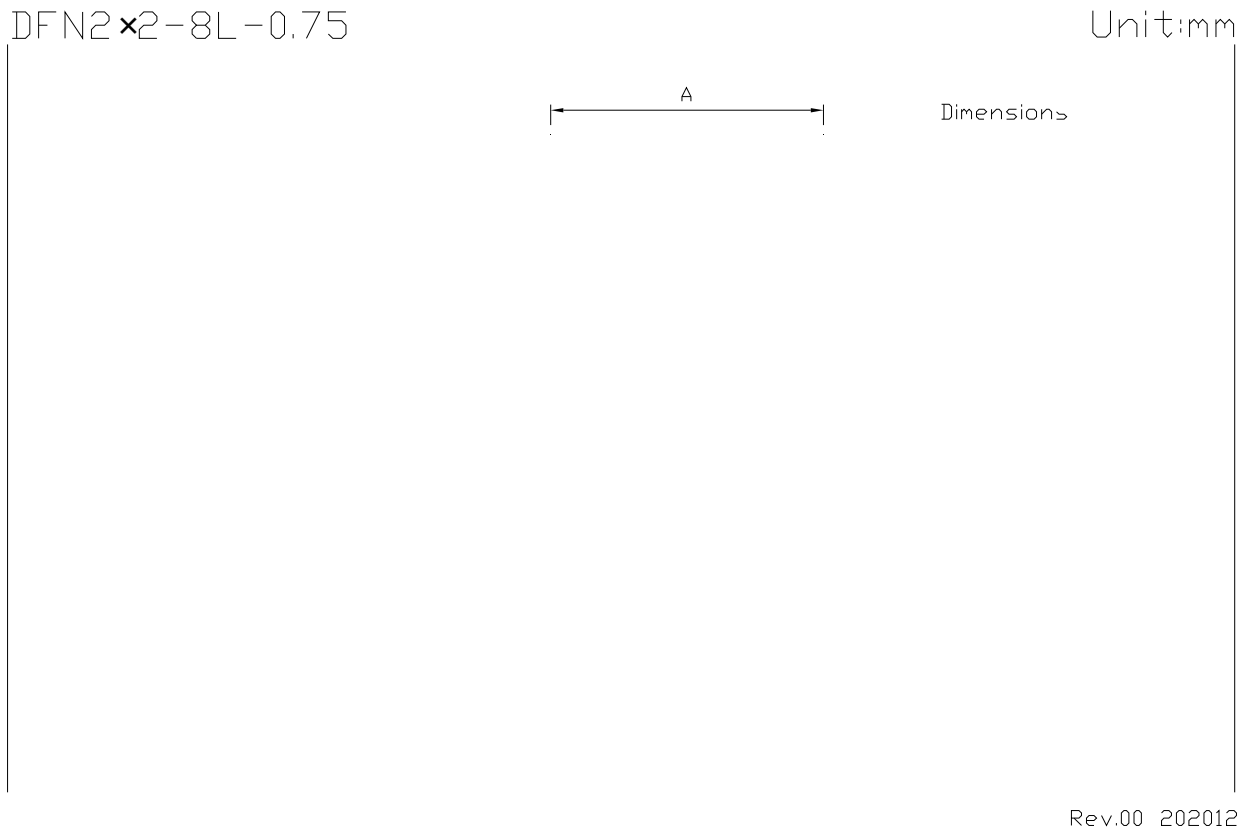


/ Timing Chart

→ **/ Discharge Overcurrent → Normal Operation.**



/ Package Dimensions



/ Marking Instructions

3130D

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