

/ Descriptions

BRCL3130DZZ	MOSFET
MOSFET	
BRCL3130DZZ	DFN2×2-8L

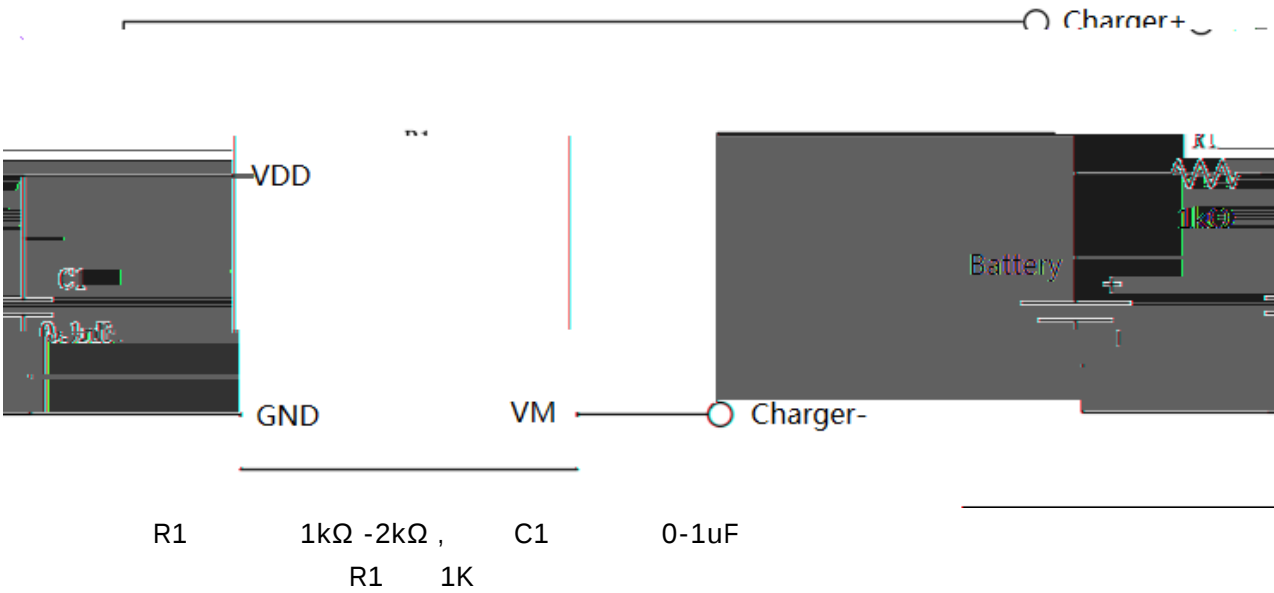
/ Features

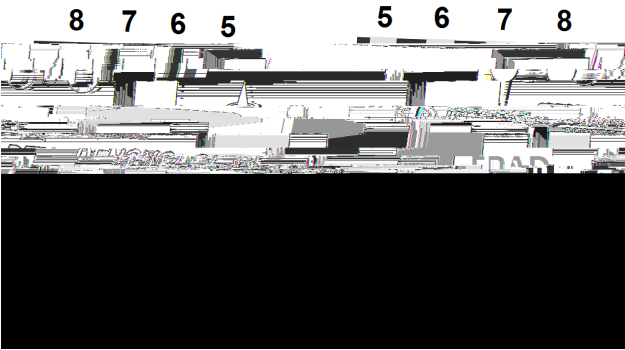
- ◆ 16mΩ MOSFET
- ◆ DFN2×2-8L
- ◆
- ◆
- ◆ 3.5 μA
- ◆ 0.6 μA
- ◆

/ Applications

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

/ Typical Application





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

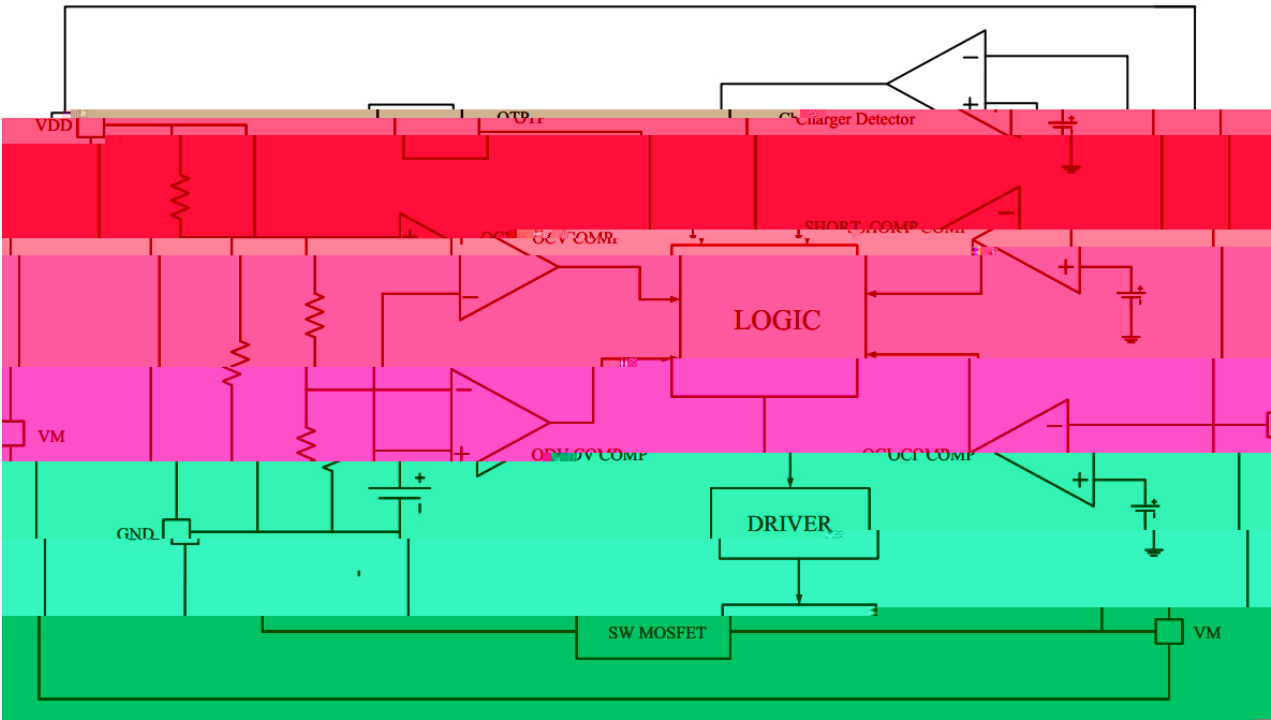
/ Electrical Characteristics(Ta=25)

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

*

/ FunctionI 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			(V _{OCV})	

/ 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			

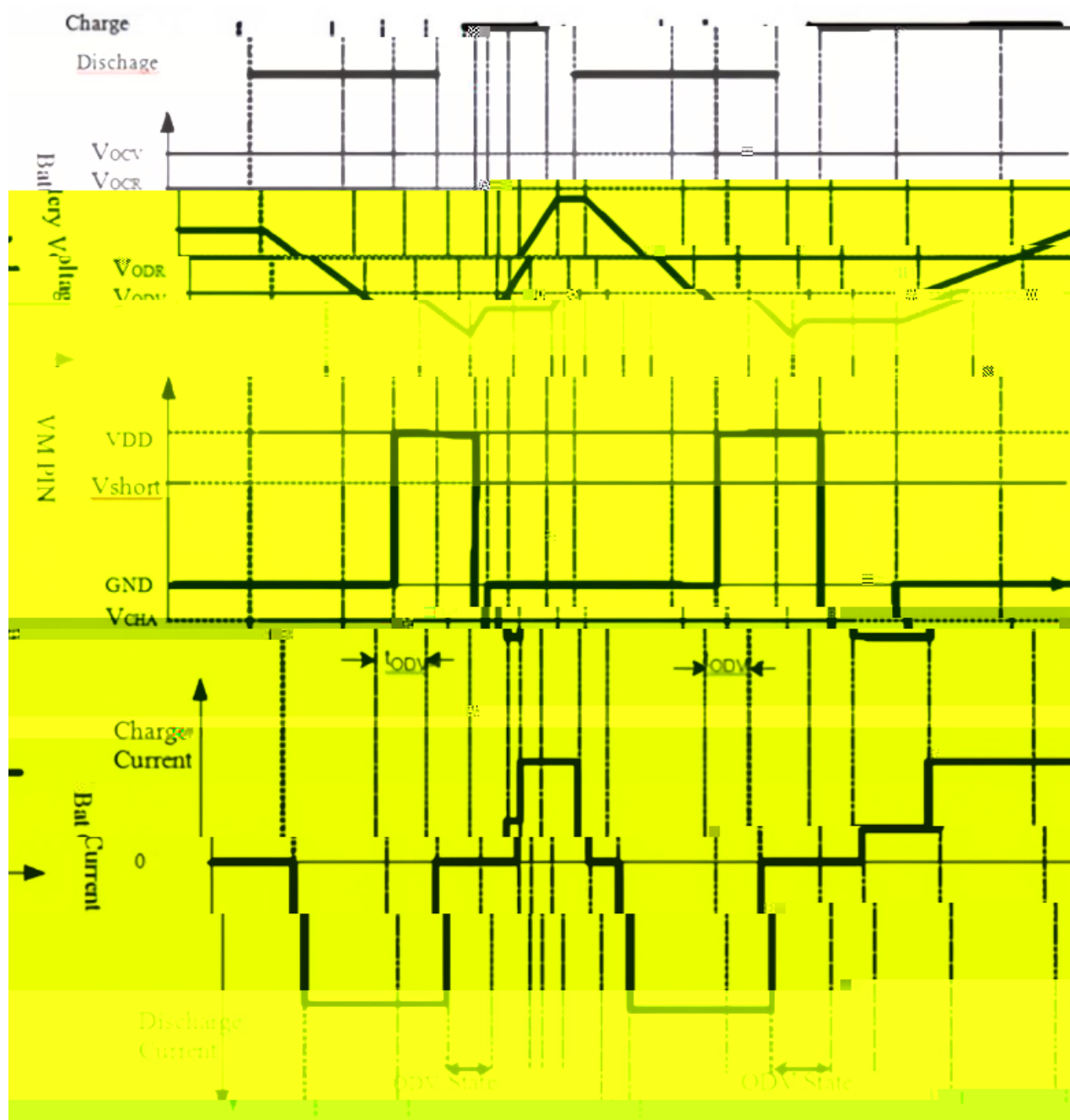
/ Load Short-circuiting Condition

VM	(V _{SHORT})
T _{SHORT}	VM

/ Charger Detection				
		VM		(V _{CHA})
	(V _{ODV})	BRCL3130DZZ		
/ 0V Battery Charging Function				
0V	0V	2.33k	}	σ
				%

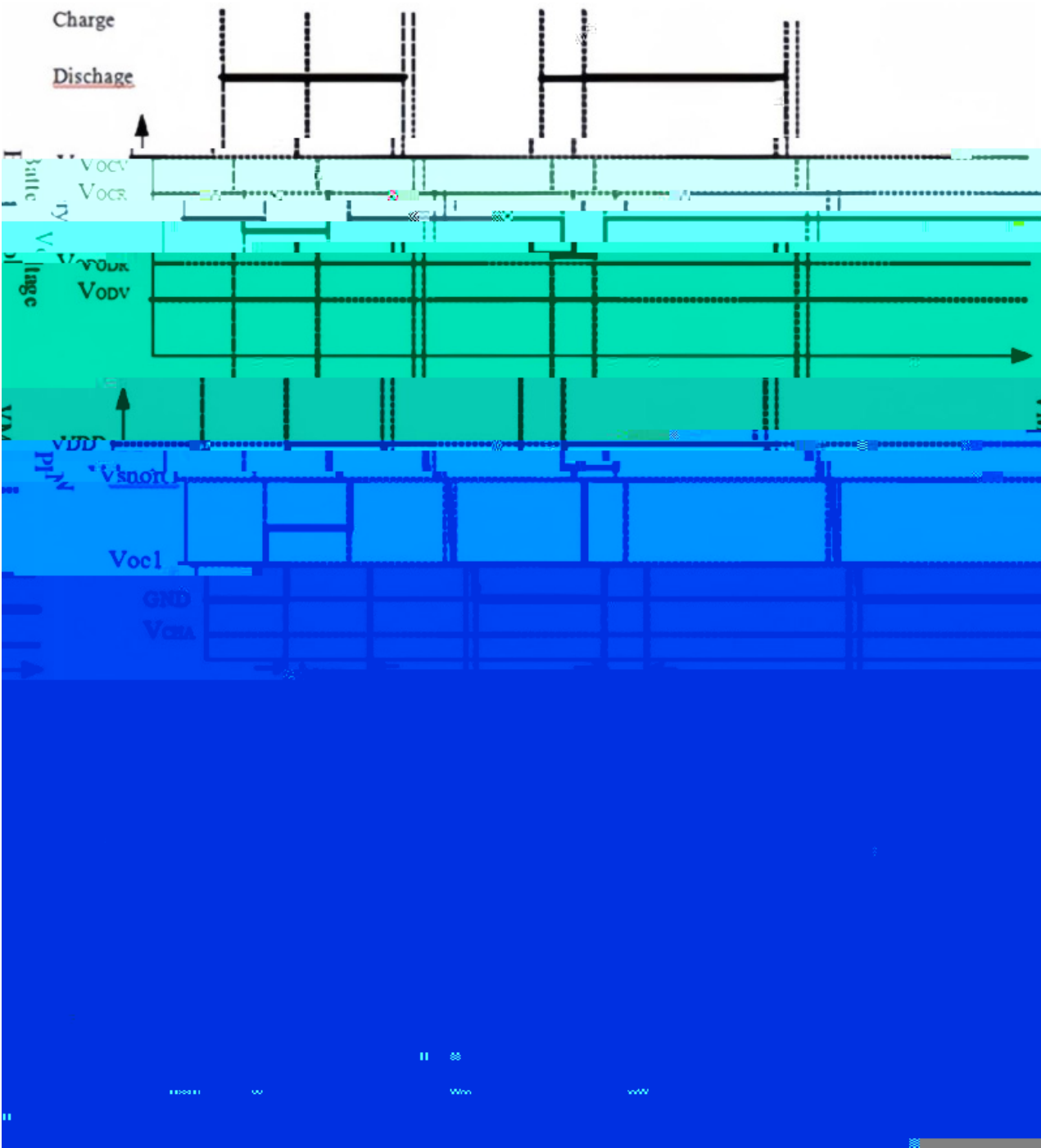
/ Timing Chart

→ / Overdischarge → Charging → Normal Operation.



/ Timing Chart

→ / Discharge Overcurrent → Normal Operation.



/ Package Dimensions



Rev.00 202012

/ Marking Instructions



3130D
