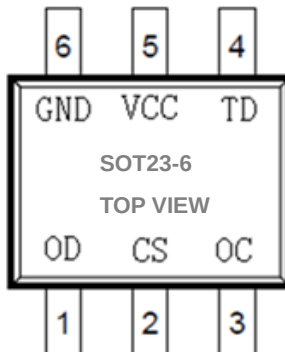


One Cell Lithium-ion/Polymer Battery Protection IC

● Features

- Reduction in Board Size due to Miniature Package SOT-23-6.
- Ultra-Low Quiescent Current at 3 μ A (V_{cc}=3.9V).
- Auto recovery
- 0v charging
- Precision Overcharge Protection Voltage 4.375V $\pm$ 25mV and 4.425V $\pm$ 25mV
- Load Detection Function during Overcharge Mode.
- Two Detection Levels for Overcurrent Protection.
- Delay times are generated by internal circuits. No external capacitors required.

● Pin Configuration



● General Description

The SSC5918 battery protection IC is designed to protect lithium-ion/polymer battery from damage or degrading the lifetime due to overcharge, overdischarge, and/or overcurrent for one-cell lithium-ion/polymer battery powered systems, such as cellular phones

The ultra-small package and less required external components make it ideal to integrate the SSC5918 into the limited space of battery pack. The accurate $\pm$ 25mV overcharging detection voltage ensures safe and full utilization charging. The very low standby current drains little current from the cell while in storage.

● Applications

- Protection IC for One-Cell
Lithium-Ion/Lithium-Polymer Battery Pack

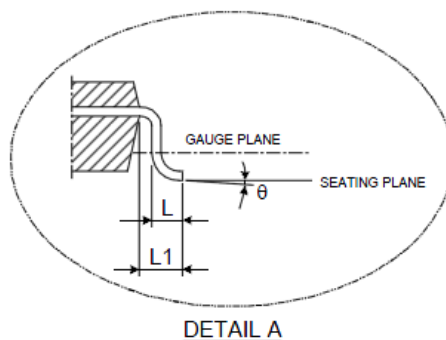
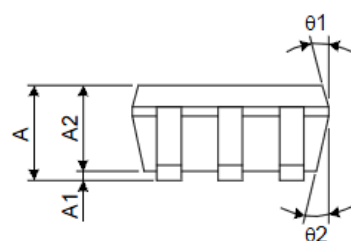
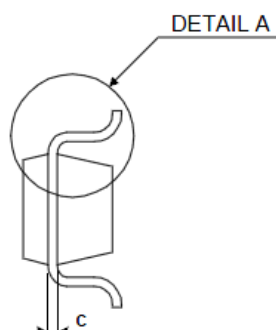
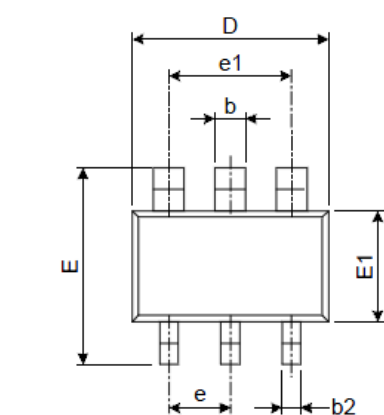
built-in cell of mobile phone
digital product cell
camera cell
portable power
- Reflow soldering internal actual temperature < 250 degrees, time in high temperature < 7 s.

Pin No.	Symbol	I/O	Description
1	OD	O	MOSFET gate connection pin for discharge control
2	CS	I	Input pin for current sense, charger detect
3	OC	O	MOSFET gate connection pin for charge control
4	TD	I	Test pin for reduce delay time
5	VCC	–	Power supply, through a resistor (R1)
6	GND	–	Ground pin

● Product Name List

Model	Package	Overcharge detection voltage [VOCP] (V)	Overcharge release voltage [VOCR] (V)	Overdischarge detection voltage [VODP] (V)	Overdischarge release voltage [VODR] (V)	Overcurrent detection voltage [VOI1] (mV)
	SOT23-6					
SSC5918H0a	SOT23-6	4.375±0.025	4.100±0.050	2.40±0.100	3.0±0.100	150±30
SSC5918H0b	SOT23-6	4.375±0.025	4.100±0.050	2.40±0.100	3.0±0.100	175±30
SSC5918G0a	SOT23-6	4.425±0.025	4.425±0.025	2.40±0.100	3.0±0.100	150±30

● Package Information

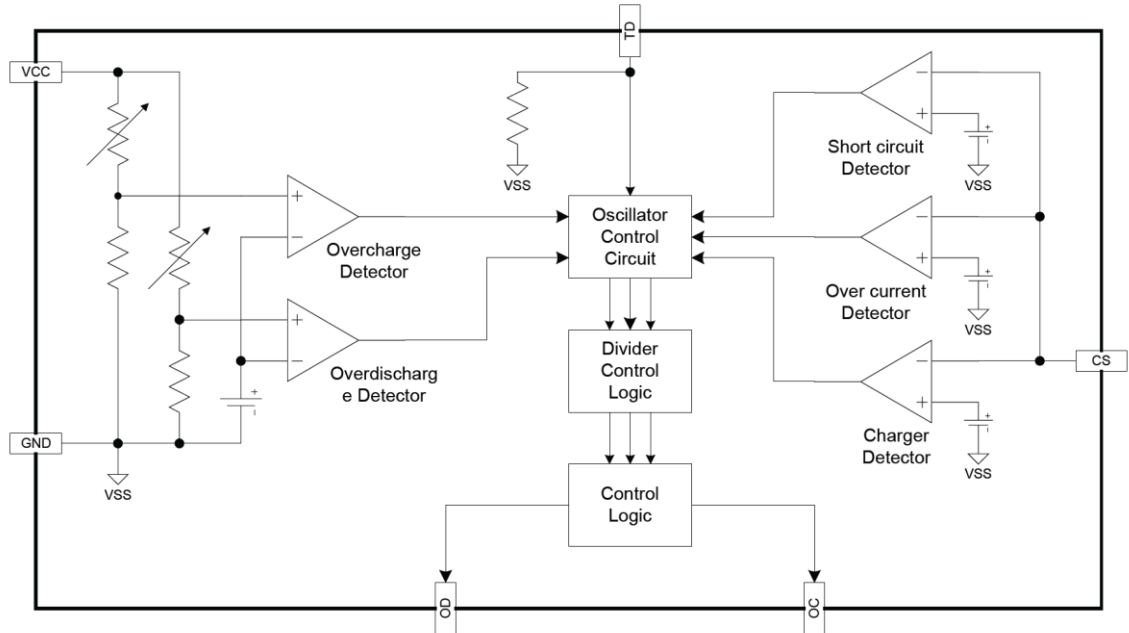


Unit : mm

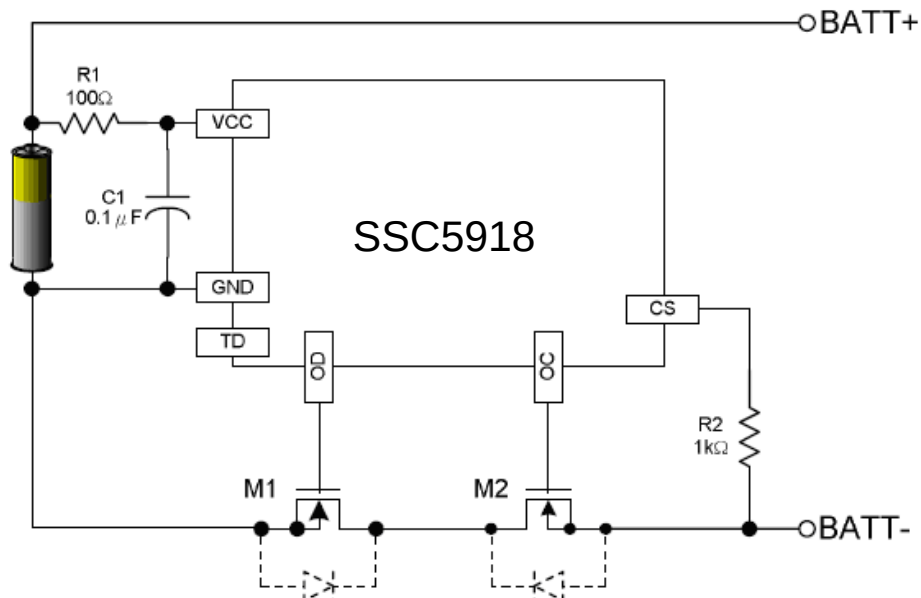
SYMBOL	MIN.	TYP.	MAX.
A	1.05	-	1.35
A1	0.05	-	0.15
A2	1.00	1.10	1.20
b	0.40	-	0.55
b2	0.25	-	0.40
c	0.08	-	0.20
D	2.70	2.90	3.00
E	2.60	2.80	3.00
E1	1.50	1.60	1.70
L	0.35	0.45	0.55
L1	0.60 REF.		
e	0.95 BSC.		
e1	1.90 BSC.		
θ	0°	5°	10°
θ1	3°	5°	7°
θ2	6°	8°	10°

SOT23-6

● Functional Block Diagram



● Typical Application Circuit



● **Absolute Maximum Ratings**(VSS=0V, Ta=25°C unless otherwise specified)

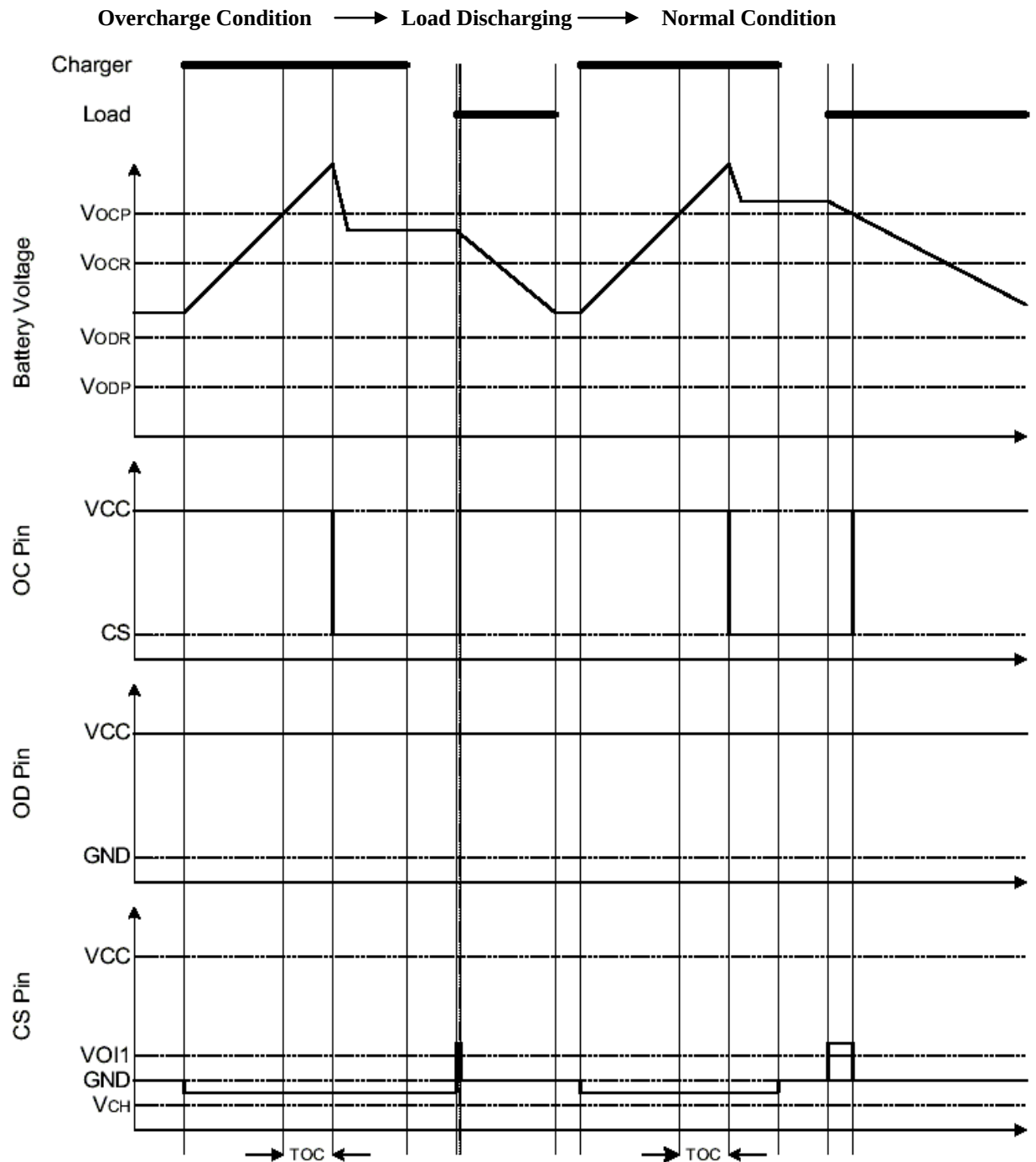
Item	Symbol	Rating	Unit
Input voltage between VDD and VSS *	V _{DD}	VSS-0.3 to VSS+10	V
OC output pin voltage	V _{OC}	VDD-26 to VDD+0.3	V
OD output pin voltage	V _{OD}	VSS-0.3 to VDD+0.3	V
CS input pin voltage	V _{CS}	VDD-26 to VDD+0.3	V
Operating Temperature Range	T _{OP}	-40~+85	°C
Storage Temperature Range	T _{ST}	-40~+125	°C

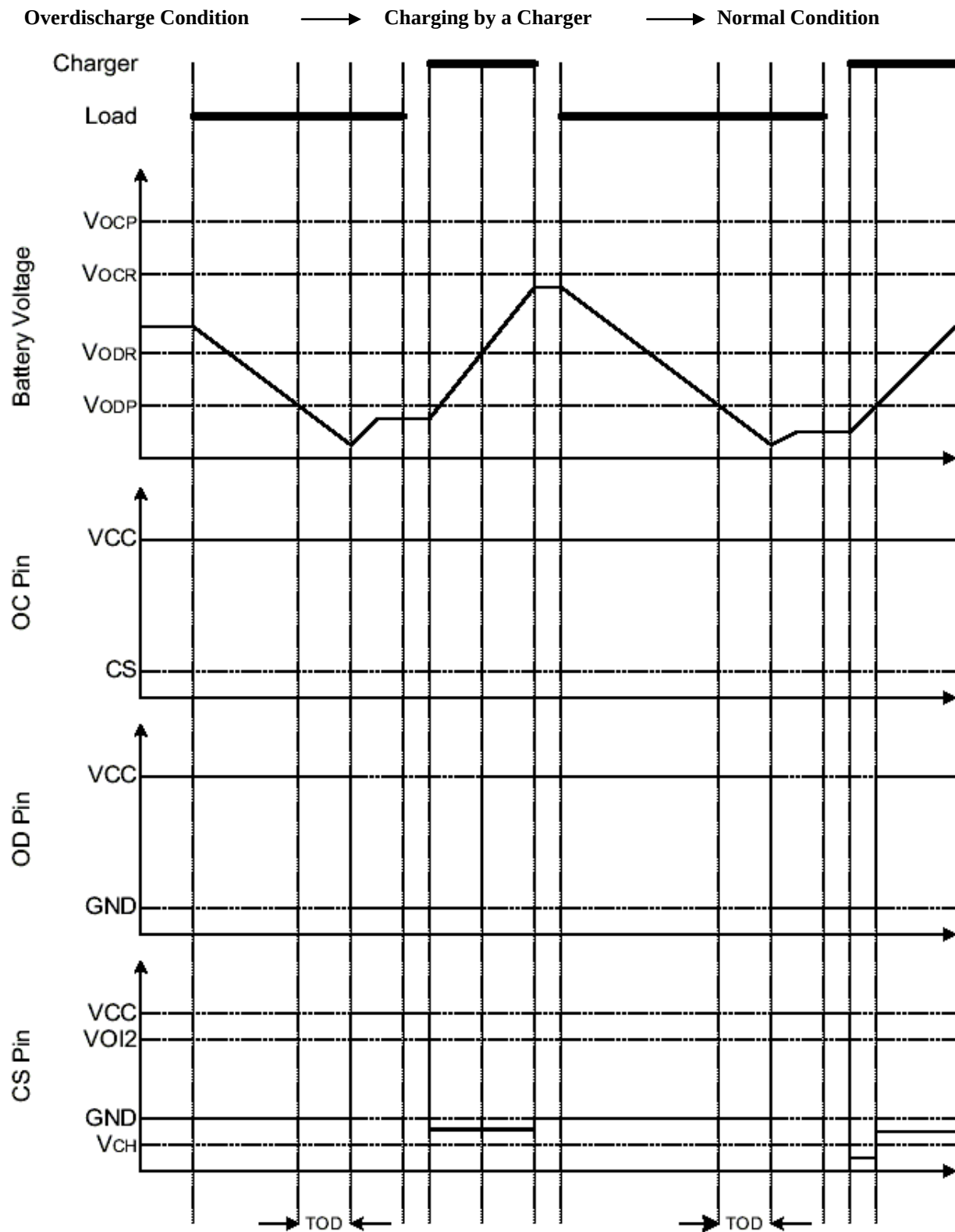
Note:SSC5918 contains a circuit that will protect it from static discharge; but please take special care that no excessive static electricity or voltage which exceeds the limit of the protection circuit will be applied to it.

● **Electrical Characteristics** (Ta=25°C unless otherwise specified)

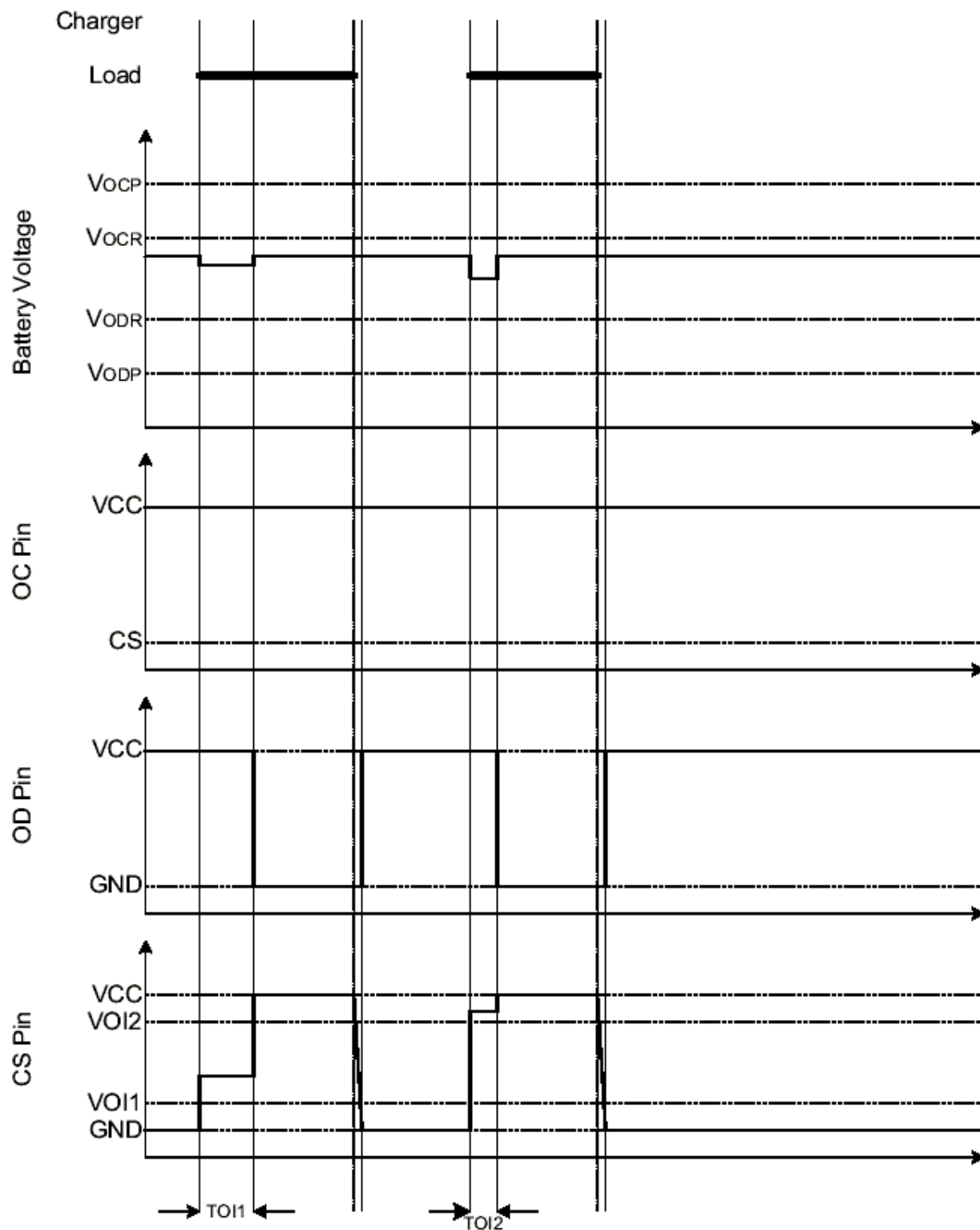
Parameter	Test Conditions	Symbol	Min	Typ	Max	Uni
Supply Current	V _{CC} =3.9V	I _{CC}		3.0	6.0	uA
Power-Down Current	V _{CC} =2.0V	I _{PD}			3.0	uA
Overcharge Protection Voltage	SSC5918H	V _{OCP}	4.35	4.375	4.4	V
Overcharge Protection Voltage	SSC5918G	V _{OCP}	4.4	4.425	4.45	V
Overcharge Release Voltage	SSC5918H	V _{OCR}	4.05	4.10	4.15	V
Overcharge Release Voltage	SSC5918G	V _{OCR}	4.4	4.425	4.45	V
Overdischarge Protection Voltage		V _{ODP}	2.30	2.40	2.50	V
Overdischarge Release Voltage		V _{ODR}	2.90	3.00	3.10	V
Overcurrent Protection Voltage		V _{OIP} (V _{OI1})	120	150	180	mV
Short Current Protection Voltage	V _{CC} =3.6V	V _{SIP} (V _{OI2})	1.25	1.35	1.45	V
Overcharge Delay Time		T _{OC}		80	200	ms
Overdischarge Delay Time	V _{CC} =3.6V to 2.0V	T _{OD}		40	100	ms
Overcurrent Delay Time (1)	V _{CC} =3.6V	T _{OI1}		10	20	ms
Overcurrent Delay Time (2)	V _{CC} =3.6V	T _{OI2}		5	100	us
Charger Detection Threshold Voltage		V _{CH}	-1.2	-0.7	-0.2	V
OD Pin Output “H” Voltage		V _{DH}	V _{CC} -0.1	V _{CC} -0.02		V
OD Pin Output “L” Voltage		V _{DL}		0.1	0.5	V
OC Pin Output “H” Voltage		V _{CH}	V _{CC} -0.1	V _{CC} -0.02		V
OC Pin Output “L” Voltage		V _{CL}		0.1	0.5	V

● Timing Diagram





Over Current Condition → Normal Condition



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