

SR6601 QC 6
V1.0

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1. Features

- ✓ On-chip Multiple Charging Standard Identification:
 - ★ Compliant with Qualcomm® **Quick Charge 2.0, 3.0** Class A (3.6V-12V)
 - ★ **USB Battery Charging v1.2** on DP & DM pins (5V/1.5A, 7.5W)
 - ★ Support Chinese Telecommunication Industrial Standard **YD/T 1591-2009**
 - ★ Apple mode (**5V/2.4A** on DP & DM pins, 12W)
 - ★ Support Samsung® Adaptive Fast Charging (**AFC**, 18W)
 - ★ Support HiSilicon® Fast Charge Protocol (**FCP**, 18W)
 - ★ Support Low Voltage Direct Charging protocols (4.5V/5A or 5V/4.5A, 22.5W)
- ✓ 8kV HBM and 400V MM contact ESD Level
- ✓ -40°C ~ +125°C Operating Temperature
- ✓ Package: SOT23-6L
- ✓ RoHS compliant and Halogen free

2. Application

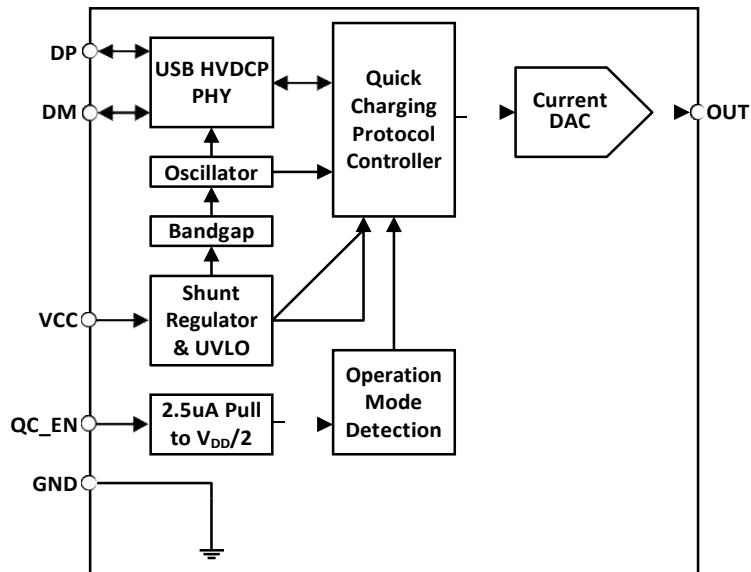
- ✓ Wall Adapter
- ✓ Car Charger
- ✓ Portable Power Bank
- ✓ USB Power Plugs
- ✓ Computer Peripherals

3. Ordering Information

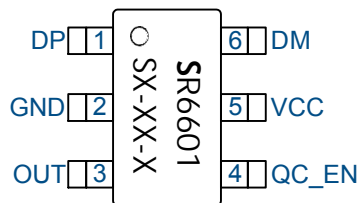
Part Number	Package	Marking	Packing	MOQ
	SOT23-6L	1AYWL	7" Tape & Reel	3K

Marking rule: Product code (1A)-Year -Week- Lot

4. Block Diagram (Ref.)



5. PAD Assignment



SOT23-6L (TOP View)



SOT23-6L (3D View)

6. PAD Descriptions

PAD Name	PAD Number	Descriptions
DP	1	Connect to USB connector DP
GND	2	Ground.
OUT	3	Current DAC output, connect to power IC feedback control pin.
QC_EN	4	Function control pin; No connect by default.
VCC	5	Power Supply Input.
DM	6	Connect to USB connector DM

7. Absolute Maximum Ratings (Ref.)

Exceeding the Absolute Maximum Ratings may damage the device.

Characteristics	Symbol	Rating	Unit
Supply Voltage	V _{CC}	-0.3 to 6.5	V
Other Pins (DP/DM/QC_EN/OUT)	-	-0.3 to 6.5	V
Operation Temperature Range	T _o	-40 ~ 125	°C
Storage Temperature	T _s	-60 ~ 150	°C
Lead Temperature (Soldering, 10 sec.)	-	260	°C
ESD Withstand Voltage:			
- Human Body Mode	HBM	8000	V
- Machine Mode	MM	400	V
- Socket Charge Device Mode	sCDM	2000	V

8. Recommended Operating Conditions (Ref.)

The device is not guaranteed to operate beyond the Maximum Recommended Operating.

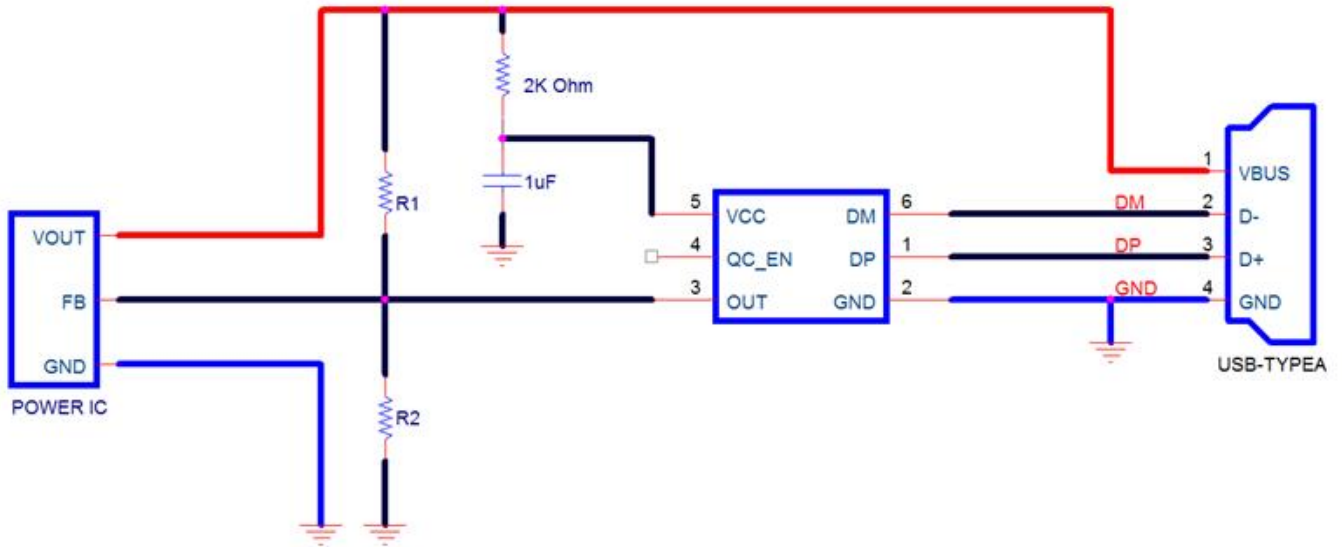
Parameter	Rating
Supply Input Voltage (V _{CC})	6V
Other pins	0 – 3.3V
QC_EN	0 - VCC
Operating Temperature Range	-40°C to +85°C
Operating current	<1mA

9. Electrical Characteristics

(VDD=5V, TA=25°C and the recommended supply voltage range, unless otherwise specified.)

Characteristics	Symbol	Conditions	MIN	TYP	MAX	Unit
Supply Input						
Supply Voltage Range	V _{CC}		3.2		6.0	V
Input UVLO Threshold	V _{UVLO}	V _{CC} rising.		2.7	3.0	V
Input UVLO Hysteresis		V _{CC} falling.		0.2		V
VCC Supply Current	I _{CC}	V _{CC} = 5.0V		200		μA
VCC Clamp Voltage		I _{CC} = 3mA		5.7		V
DP/DM at APPLE Mode						
DP Floating Voltage	V _{DP}		2.6	2.7	2.8	V
DM Floating Voltage	V _{DM}		2.6	2.7	2.8	V
DP Pin Output Impedance	Z _{DP}			30		kΩ
DM Pin Output Impedance	Z _{DM}			30		kΩ
DP/DM at Mode BC1.2						
DP and DM Short Circuit Switch			10	20	40	Ω
DP Pull Low Resistance			425	500	575	kΩ
DP/DM at QC3.0 Mode						
DM Pull Low Resistance			16	20	24	kΩ
DP Pull Low Resistance			425	500	575	kΩ
Up Current Step			1.9	2	2.1	μA
Down Current Step			1.9	2	2.1	μA
DP/DM at FCP Mode						
D- FCP TX Valid High			2.35		3.6	V
D- FCP TX Valid Low					0.3	V
D- FCP RX Valid High			1.5		3.6	V
D- FCP RX Valid Low					1.0	V
DP Pull Low Resistance			425	500	575	kΩ

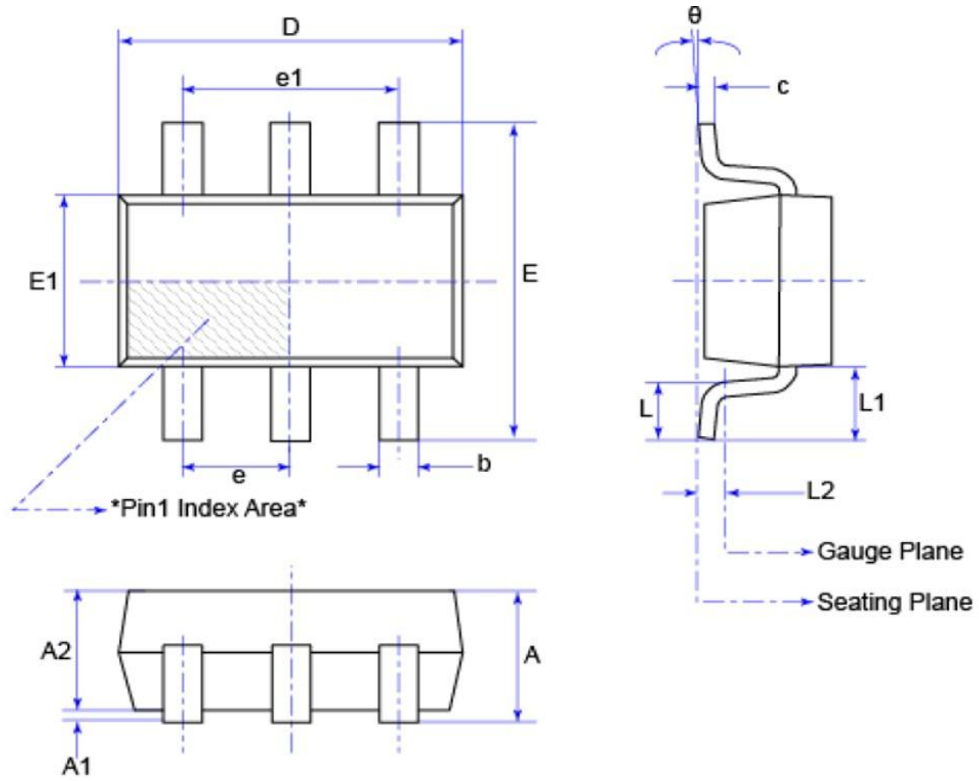
10. Typical Application Circuit



R1 = 100K ohm / 1%
 R2 Determinate by FB voltage

QC_EN	Max. Voltage
HIGH-Z	12V
200K Pull-Down	9V
GND	5V

11. Package Dimensions



Unit: mm

Symbol	Min	Max
A	-	1.35
A1	-	0.15
A2	1.00	1.20
b	0.30	0.50
c	0.08	0.21
D	2.72	3.12
E	2.60	3.00
E1	1.40	1.80
e	0.95 BSC	
e1	1.80	2.00
L	0.30	0.60
L1	0.60 REF	
L2	0.25 BSC	
θ	0°	8°

Revision History:

Rev. 1.0	Initial Release	2020/Oct/30