

**ZCC6012**  
**USB PD 2.0/3.0 Controller**  
V0.9

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## 1. Features

- On-chip Multiple Charging Standard Identification:
  - USB Power Delivery 3.0 Fix PDO (support 18W/20W/25W multi-configuration)
  - USB Power Delivery 2.0 Fix PDO
  - USB Type C CC-logic
- CC pin protection up to 12V
- 8kV HBM and 400V MM contact ESD Level
- -40°C ~ +125°C Operating Temperature
- Package: SOT23-6
- RoHS compliant and Halogen free

## 2. Application

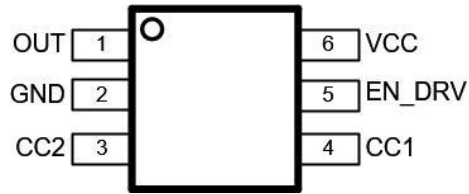
- Wall Adapter
- Car Charger
- Portable Power Bank
- USB Power Plugs

## 3. Ordering Information

Part Number	Package	Marking	Packing	MOQ
ZCC6012	SOT23-6			
ZCC6012-W	KGD	-	Cassette	25 pcs wafer

Marking rule : TBD

#### 4. PAD Assignment



#### 5. PAD Descriptons

PAD Name	PAD Number	Descriptons	
OUT	1	Feedback output	
GND	2	Ground	
CC2	3	USB Type-C Configuration channel signal2.	
CC1	4	USB Type-C Configuration channel signal1.	
EN_DRV	5	Connect a resistor to GND , Muti-PDO configuration :	
		Rset=0R	18W (5V/3A, 9V/2A, 12V/1.5A)
		Rset=NC	18W(5V/2.4A, 9V/2A)
		Rset=390K	20W(5V/3A, 9V/2.22A, 12V/1.67A)
		Rset=620K	20W(5V/3A, 9V/2.22A)
		Rset=160K	25W(5V3A, 9V/2.77A)
VCC	6	Supply input voltage pin.	

## 6. 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	V
FB	FB	-0.3 to 6	V
CC1, CC2	CC1, CC2	-0.3 to 12	V
Maximum Junction Temperature	$T_J$	150	°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

## 7. Recommended Operating Conditions (Ref.)

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

Parameter	Rating
Supply Input Voltage ( $V_{CC}$ )	3.3V – 5.6V
CC1, CC2, FB	0V – 3.3V
Operating Temperature Range	-40°C to +125°C
Operation Current	< 1mA

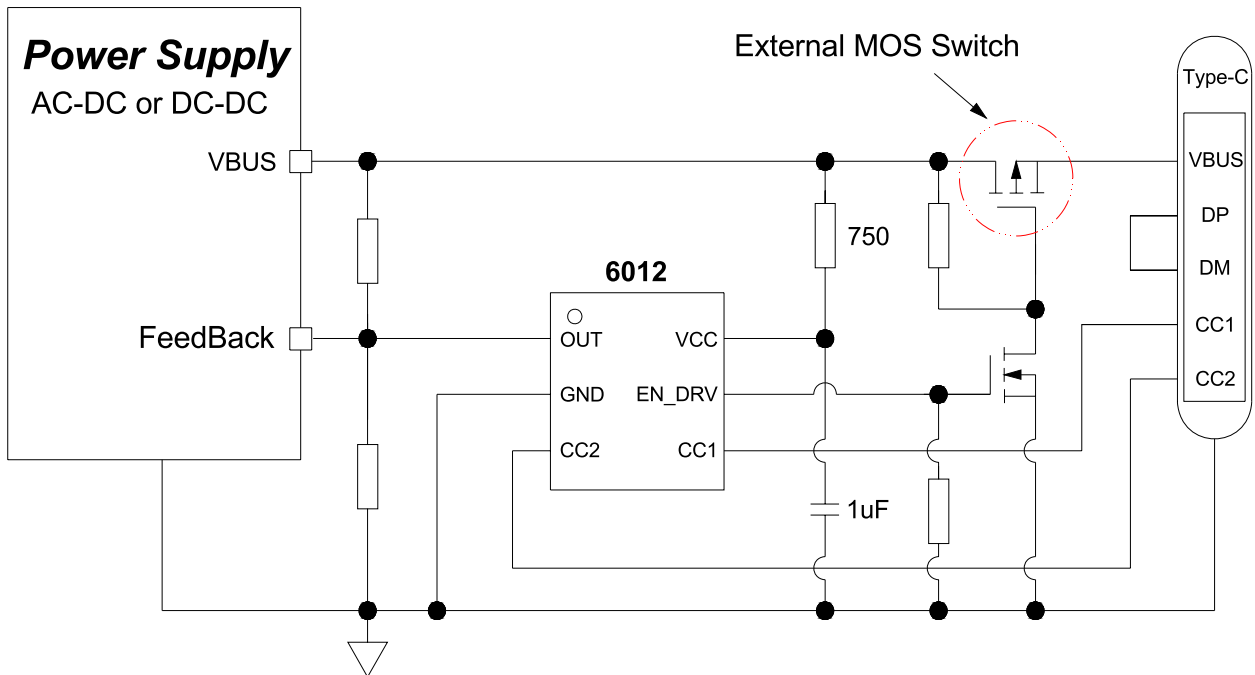
## 8. Electrical Characteristics

( $V_{DD}=5V$ ,  $T_A=25^\circ\text{C}$  and the recommended supply voltage range, unless otherwise specified.)

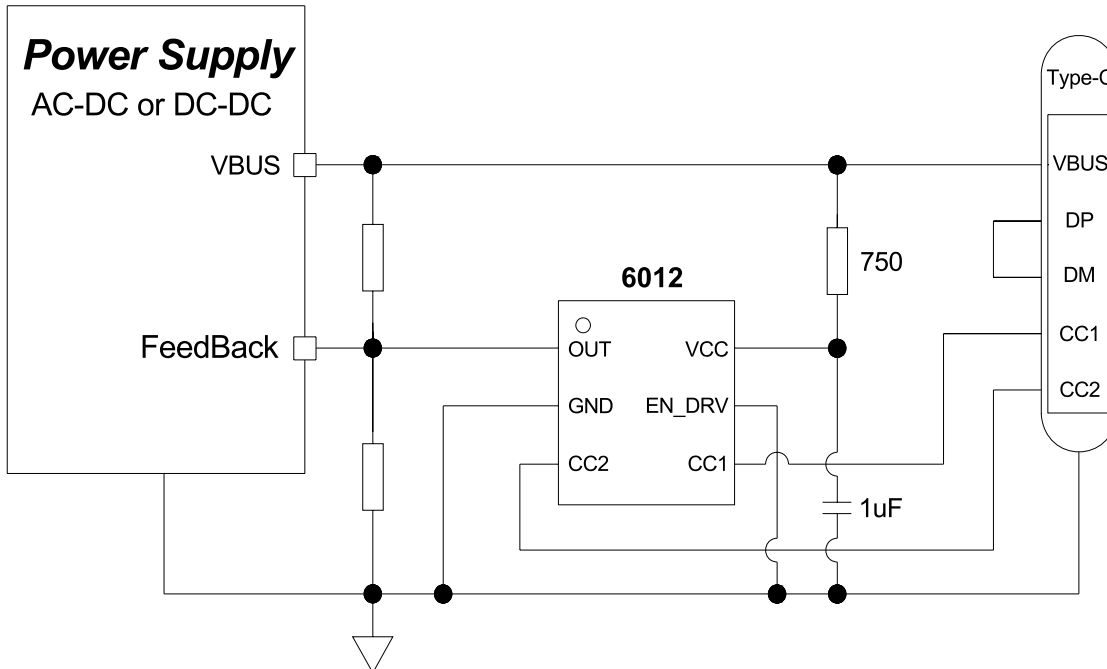
Characteristics	Symbol	Conditions	MIN	TYP	MAX	Unit
<b>Supply Input</b>						
Supply Voltage Range	$V_{CC}$					V
Input UVLO Threshold	$V_{UVLO}$	$V_{CC}$ rising.				V
Input UVLO Hysteresis		$V_{CC}$ falling.				V
VCC Supply Current	$I_{CC}$	$V_{CC} = 5.0V$				$\mu\text{A}$
VCC Shunt Voltage	$V_{CC\_SHDN}$					V

## 9. Typical Application Circuit

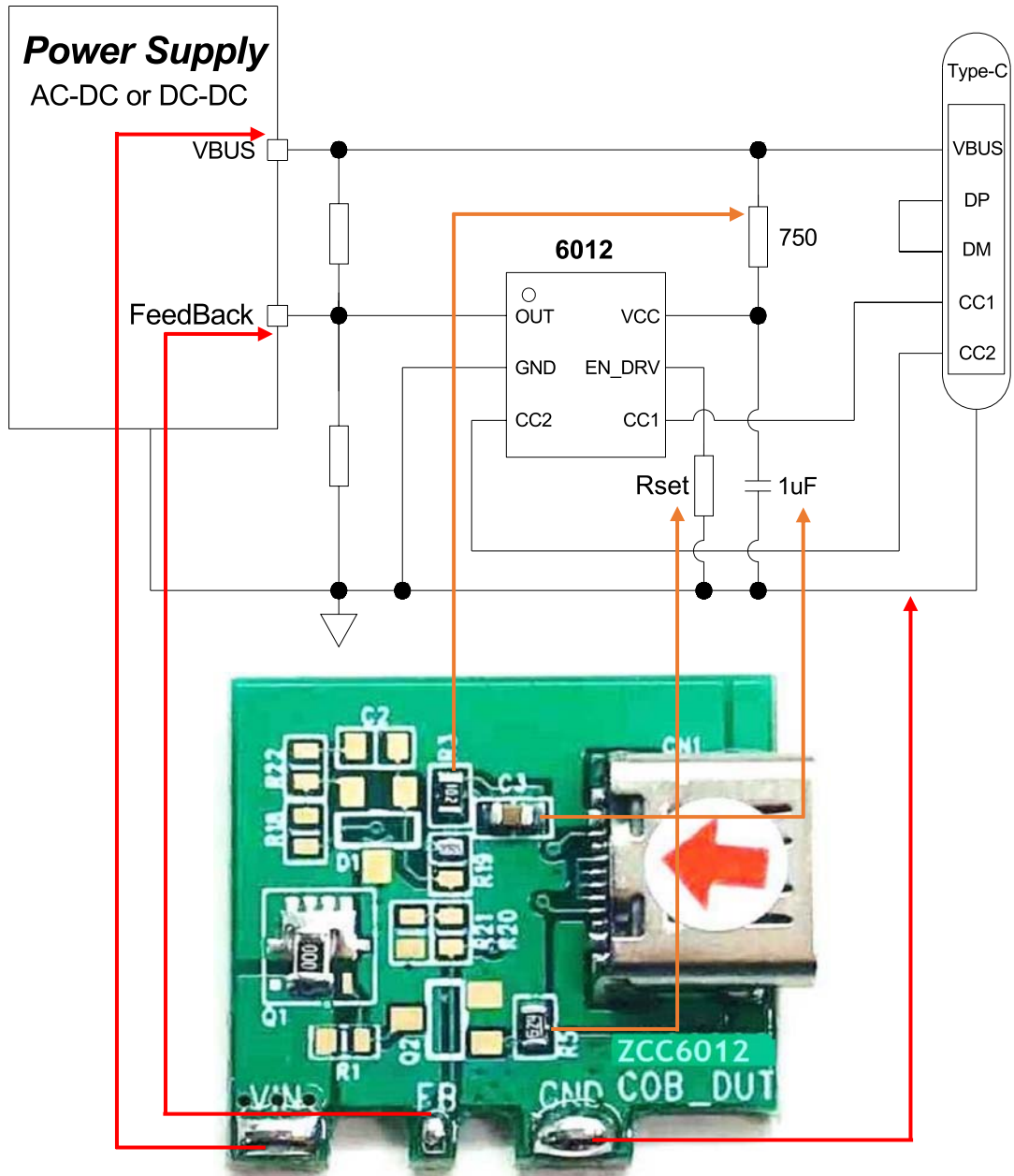
With VBUS Load Switch



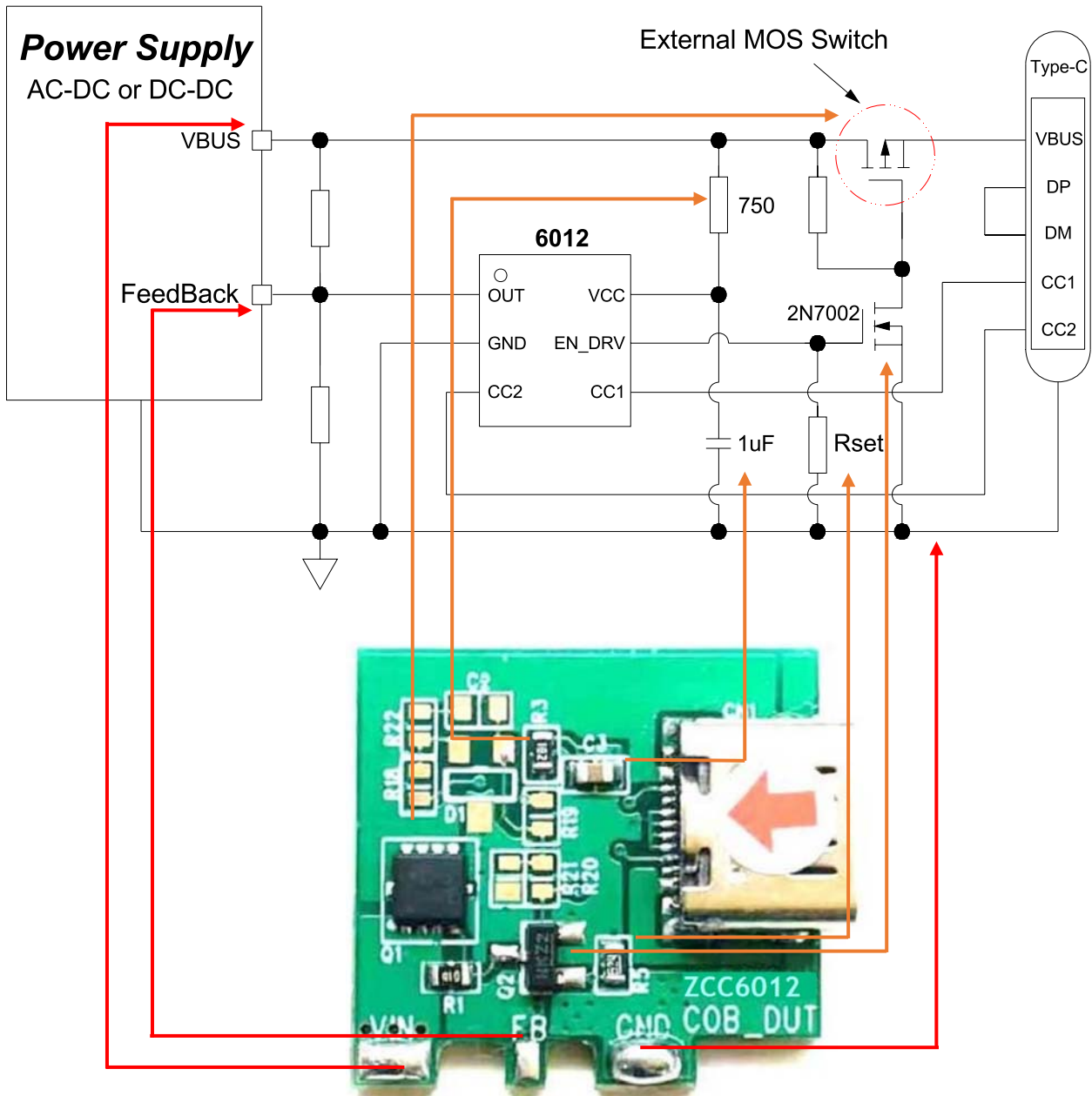
Without VBUS Load Switch



Connected Note



Rset	PD Output Power
0R	18W(5V3A, 9V2A, 12V1.5A)
160K	25W(5V3A, 9V2.77A)
390K	20W(5V3A, 9V2.22A, 12V1.67A)
620K	20W(5V3A, 9V2.22A)
NC	18W(5V2.4A, 9V2A)

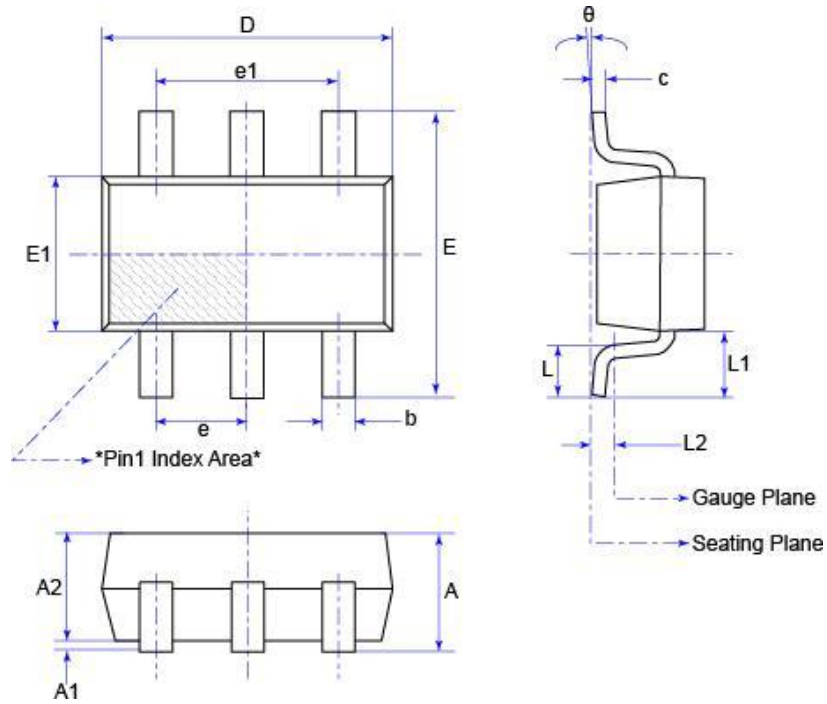


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160K	25W(5V3A, 9V2.77A)
390K	20W(5V3A, 9V2.22A,12V1.67A)
620K	20W(5V3A, 9V2.22A)
NC	18W(5V2.4A, 9V2A)



## 10. Package Dimensions

SOT23-6L



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°