

## Single Adjustable Over Current Protection

### FEATURES

- 4.5V~5.5V Single Supply Operation.
- Easy pass DOE-6 test.
- Adjustable Over Current Protection.
- Support single Layer PCB.
- Available in SOT23-6 Package.

### APPLICATIONS

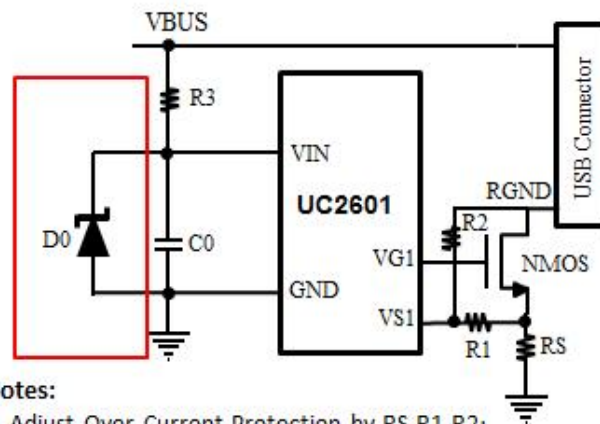
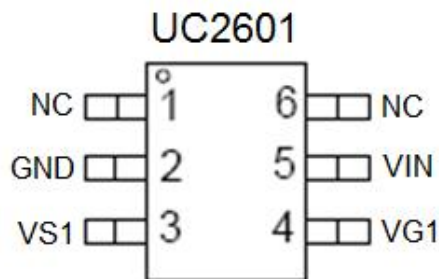
- USB Wall Adapter
- USB Multiple Charger

### DESCRIPTION

The UC2601 is Single over current protection for Smart USB dedicated chargers.

The devices feature an over current protection to protect USB output current, this function can turn off GND when USB output current bigger than setting current and the USB port will auto recovery while the fault condition is removed

### UC2601 SOT23-6 PACKAGE and SIMPLIFIED APPLICATION



#### Notes:

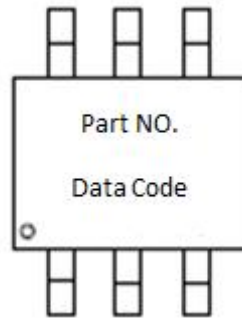
1. Adjust Over Current Protection by RS,R1,R2;
2. Add D0 under high voltage application;
3. Remove D0 in 5V application;

### ORDERING INFORMATION

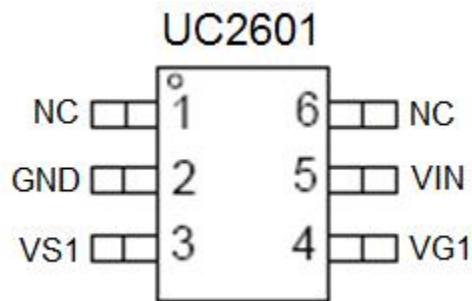
Part Number	Package Type	Package Qty	Op Temp(°C)
UC2601	SOT23-6	3000	-40~85

## Single Adjustable Over Current Protection

### MARK INFORMATION



### PINOUT



### PIN FUNCTIONS

NO.	NAME	TYPE <sup>(1)</sup>	DESCRIPTION
1	NC	O/I	No Connection
2	GND	G	Ground connection
3	VS1	O/I	Sense Voltage of Channel1
4	VG1	O/I	Gate Driver of NMOS of Channel1
5	IN	P/I	Power supply/Input voltage connected to Power Switch; connect a 1 $\mu$ F or greater ceramic capacitor from IN to GND as close to the IC as possible
6	NC	O/I	No Connection

(1) G = Ground, I = Input, O = Output, P = Power

## Single Adjustable Over Current Protection

### ABSOLUTE MAXIMUM RATINGS <sup>(1)</sup>

Over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER		MIN	MAX	UNIT
supply voltage range	IN	-0.3	7.0	V
ESD rating, Human Body Model (HBM)	IN		2	kV
	VS1, VG1		2	
Operating Junction Temperature	T <sub>J</sub>	-40	125	°C
Storage Temperature Range	T <sub>stg</sub>	-65	150	

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

### THERMAL CHARACTERISTICS

over operating free-air temperature range (unless otherwise noted)

THERMAL METRIC			UNIT
$\theta_{JA}$	Package thermal impedance <sup>(1)</sup>	180	°C/W

(1) The package thermal impedance is calculated in accordance with JESD 51-7.

### RECOMMENDED OPERATING CONDITIONS

PARAMETER		MIN	MAX	UNIT
V <sub>IN</sub>	Input voltage of IN	4.5	5.5	V
V <sub>VS1, VS2</sub>	Sense Voltage of sense resistor		5.5	
V <sub>VG1, VG2</sub>	Gate Voltage of NMOS		5.5	
T <sub>J</sub>	Operating Junction Temperature	-40	125	°C

## Single Adjustable Over Current Protection

### ELECTRICAL CHARACTERISTICS

Conditions are  $T_A = 25^\circ\text{C}$  and  $V_{IN} = 5.0\text{ V}$ . All voltages are with respect to GND unless otherwise noted.

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>UNDERVOLTAGE LOCKOUT</b>					
$V_{UVLO}$	IN rising UVLO threshold voltage		3.5		V
	Hysteresis		100		mV
<b>SUPPLY CURRENT</b>					
$I_{IN}$	IN supply current		160		$\mu\text{A}$
<b>Over Current Protection</b>					
$I_{VS}$	VS Pin Source Current	UC2601	20.0		$\mu\text{A}$
$V_{OS}$	Offset Voltage		0.0		mV

**UC2601  $I_{OUT}$  Calculation:**

$$I_{OUT} = \frac{95\text{mV} - 20\mu\text{A} \times R_1}{R_S}$$

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**PACKAGE INFORMATION**

SOT23-6

