

#### Features

- 63mΩ High Side MOSFET
- Wide Supply Voltage Range 2.4~5.5V
- Programmable Current-Limit
- Over Temperature Protection
- Reverse Blocking (no body diode)

#### General Description

RUC9280C5 develops ultra-low  $R_{DS(on)}$  Switch with Programmable current limit to protect the Power source form over current and short circuit conditions.

It incorporates over temperature protection and reverse blocking functions.

#### Applications

- USB 3G Datacard
- USB Dongle
- MiniPCI Accessories

#### Typical application

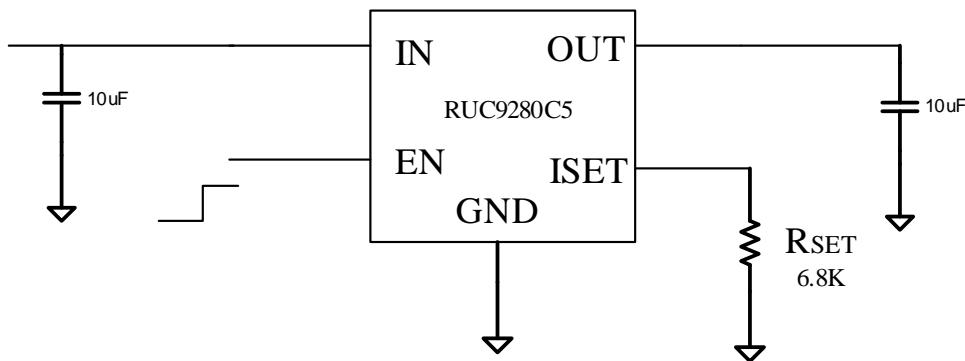
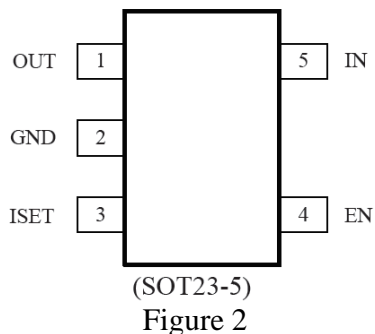


Figure 1 1A current limit application

## Pin Description



Pin name	Pin number	Pin description
IN	5	Supply voltage input
GND	2	Ground pin
OUT	1	Output pin
EN	4	Pull high enable
ISET	3	Current limit programming pin

## Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
$V_{IN}$	Input to GND voltage	-0.3~6	V
$V_{OUT}$	OUT to GND voltage	-0.3~6	V
$V_{EN}$	EN to GND voltage	-0.3~6	V
$V_{ISET}$	ISET to GND voltage	-0.3~6	V
$T_J$	Maximum junction temperature	150	°C
$T_{STG}$	Storage temperature	-40~150	°C
$T_{SDR}$	Maximum lead soldering temperature	260	°C

### Recommended operating conditions

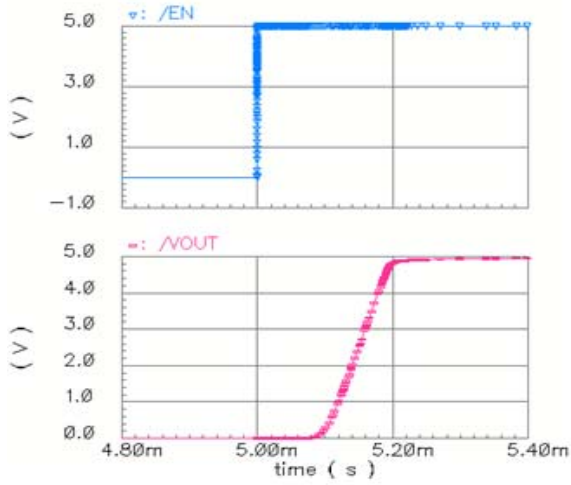
Symbol	Parameter	Range	Unit
$V_{IN}$	Input to GND voltage	2.4~5.5	V
$I_{OUT}$	OUT current	0~1.5	A
$T_A$	Ambient temperature	-40~85	°C

**Electrical Characteristics:**

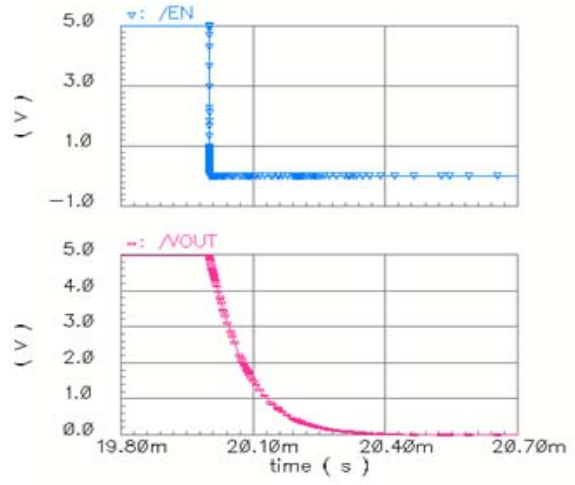
 Unless otherwise specified these specification apply over  $V_{IN}=5V, V_{EN}=5V, T_A=25^{\circ}C$ 

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Input Voltage Range	$V_{IN}$		2.4		5.5	V
Shutdown input current	$I_{SHDN}$	Open load disable		0.2	1	$\mu A$
Quiescent supply current	$I_Q$	Open load enable		30		$\mu A$
FET RON	$R_{DSON}$			80		$m\Omega$
EN rising threshold	$V_{ENH}$		2.0			V
EN falling threshold	$V_{ENL}$			0.2		V
En leakage current	$I_{EN}$				1	$\mu A$
IN UVLO threshold					2.4	V
IN UVLO hysteresis				0.1		V
Over current limit		RSET=4.5K	1.1	1.5	1.9	A
		REST=6.8K		1.0		A
Turn on time	$T_{ON}$			130		$\mu s$
Turn off time	$T_{OFF}$			200		$\mu s$
Over temperature threshold	$T_{SD}$			130		$^{\circ}C$
Over temperature hysteresis				30		$^{\circ}C$

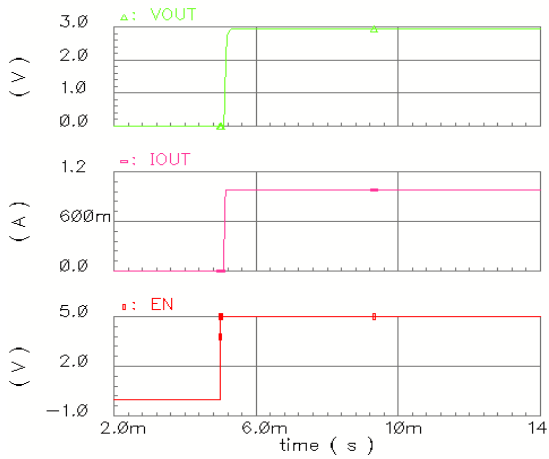
**Typical Operating Characteristics**



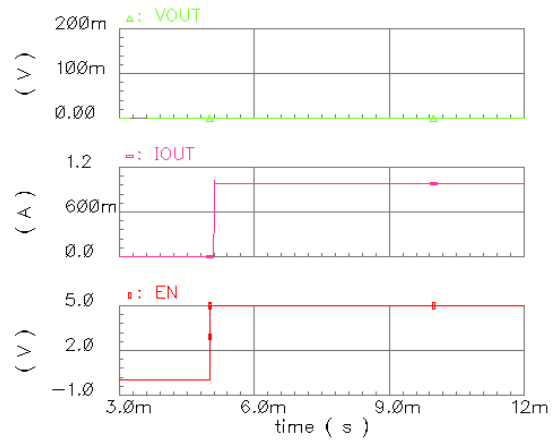
**EN ON**



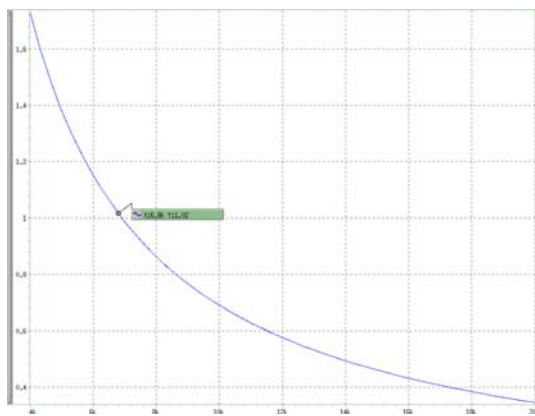
**EN OFF**



**RSET=6.8K, RL=3Ω EN ON**



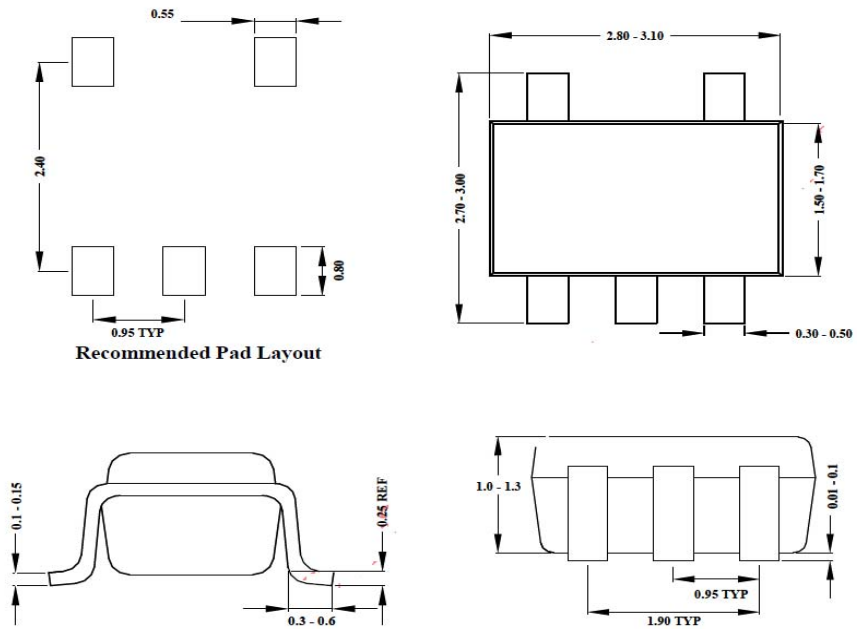
**RSET=6.8K, RL=0Ω EN ON**



**$I_{LIMIT}$  VS  $R_{SET}$**

**Package Information**

**SOT23-5 package mechanical drawing**



**Note: All dimensions are in millimeters.**