



SY6282

6.5V, 3A Low Loss Power Distribution Switch Preliminary Specification

General Description

SY6282 is ultra-low $R_{DS(ON)}$ switch with programmable current limit to protect the power source from over current and short circuit conditions. They incorporate over temperature protection and reverse blocking function.

Ordering Information

SY6282 □(□□)□
 □ Temperature Code
 □ Package Code
 □ Optional Spec Code

Ordering Number	Package type	Note
SY6282ACC	TSOT23-5	

Features

- Input voltage: 2.4V to 6.5V
- 3A load current capability
- Programmable current limit
- Over temperature protection
- Reverse blocking (no body diode)
- OUT can be forced higher than IN at shutdown
- Compact TSOT23-5 package minimizes the board space
- RoHS Compliant and Halogen Free

Applications

- USB 3G Datacard
- USB Dongle
- MiniPCI Accessories
- USB Charger
- Public Place Multi-USB Charger

Typical Applications

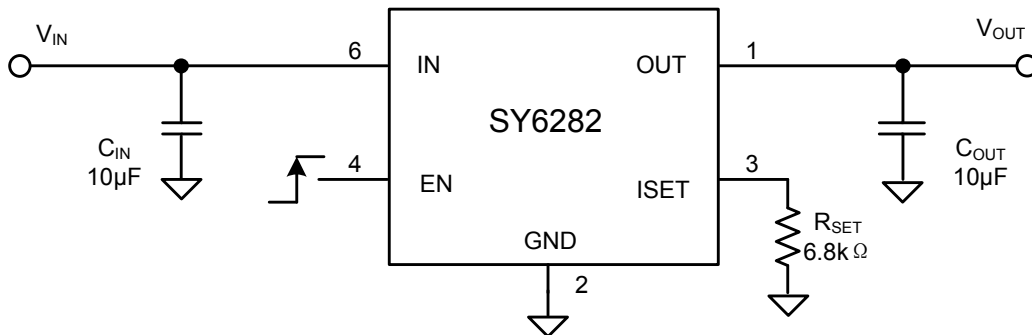
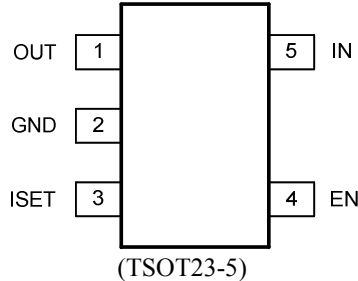


Figure 1. Schematic Diagram

Pinout (top view)


Top mark: **Lxyz** for SY6282ACC (Device code: Ln *x*=year code, *y*=week code, *z*=lot number code)

Pin Name	Pin number	Pin Description
OUT	1	Output pin, decoupled with a 10 μ F capacitor to GND.
GND	2	Ground pin.
ISET	3	Current limit programming pin. Connect a resistor R_{SET} from this pin to ground to program the current limit: $I_{LIM} (A) = 6800/R_{SET} (\Omega)$
EN	4	ON/OFF control. Pull high to enable IC. Do not leave it floating.
IN	5	Input pin, decoupled with a 10 μ F capacitor to GND.

Absolute Maximum Ratings (Note 1)

All pins-----	-0.3V to 7V
Power Dissipation, $P_D @ T_A = 25^\circ\text{C}$ TSOT23-5, -----	1.46W
Package Thermal Resistance (Note 2)	
θ_{JA} -----	68.5 $^\circ\text{C}/\text{W}$
θ_{JC} -----	10.9 $^\circ\text{C}/\text{W}$
Junction Temperature-----	150 $^\circ\text{C}$
Lead Temperature (Soldering, 10 sec.) -----	260 $^\circ\text{C}$
Storage Temperature Range -----	-65 $^\circ\text{C}$ to 150 $^\circ\text{C}$

Recommended Operating Conditions (Note 3)

IN-----	2.4V to 6.5V
All other pins -----	0V to 6.5V
Junction Temperature Range -----	-40 $^\circ\text{C}$ to 125 $^\circ\text{C}$
Ambient Temperature Range -----	-40 $^\circ\text{C}$ to 85 $^\circ\text{C}$

Electrical Characteristics

($V_{IN} = 5V$, $C_{OUT} = 10\mu F$, $T_A = 25^\circ C$ unless otherwise specified)

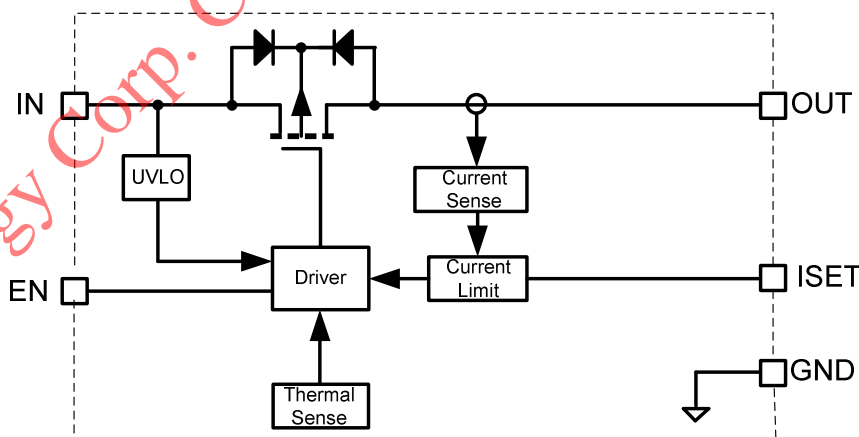
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage Range	V_{IN}		2.4		6.5	V
Shutdown Input Current	I_{SHDN}	Open load, IC Disabled.		0.2	1	μA
Quiescent Supply Current	I_Q	Open load, IC Enabled.		38		μA
FET RON	$R_{DS(ON)}$			50		m Ω
EN Rising Threshold	$V_{EN(H)}$		2			V
EN Falling Threshold	$V_{EN(L)}$				0.8	V
EN Leakage Current	I_{EN}	$V_{EN} = 5.0V$			1	μA
IN UVLO Threshold	V_{IN_UVLO}				2.3	V
IN UVLO Hysteresis	V_{IN_HYS}			0.1		V
Over Current Limit	I_{LIM}	$R_{SET} = 6.8k\Omega$	0.75	1	1.25	A
Programmable current limit range	I_{RANGE}		0.4		3.5	A
Turn-on Time	T_{ON}	$R_L = 10\Omega$, $C_{OUT} = 1\mu F$		130		μs
Turn-off Time	T_{OFF}	$R_L = 10\Omega$, $C_{OUT} = 1\mu F$		20		μs
Thermal Shutdown Temperature	T_{SD}			150		$^\circ C$
Thermal Shutdown Hysteresis	T_{SD_HYS}			20		$^\circ C$

Note 1: Stresses beyond the “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

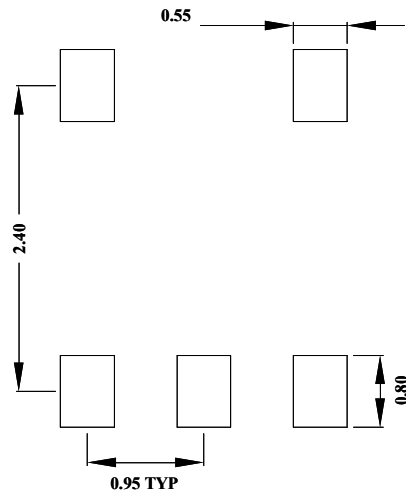
Note 2: θ_{JA} is measured in the natural convection at $T_A = 25^\circ C$ on a Silergy test board. Pin 2 of TSOT23-5 package is the case position for θ_{JC} measurement.

Note 3: The device is not guaranteed to function outside its operating conditions.

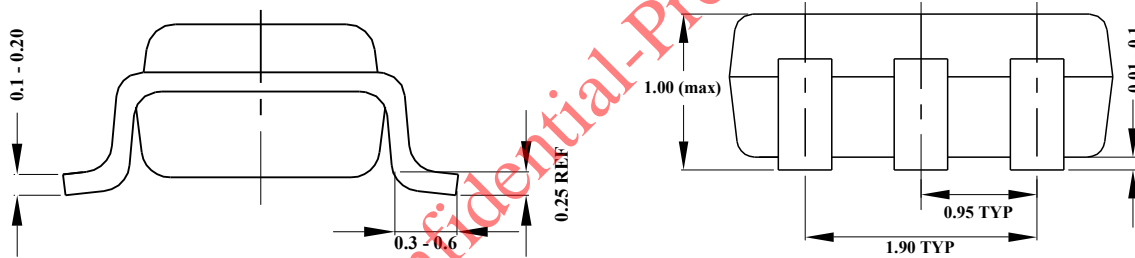
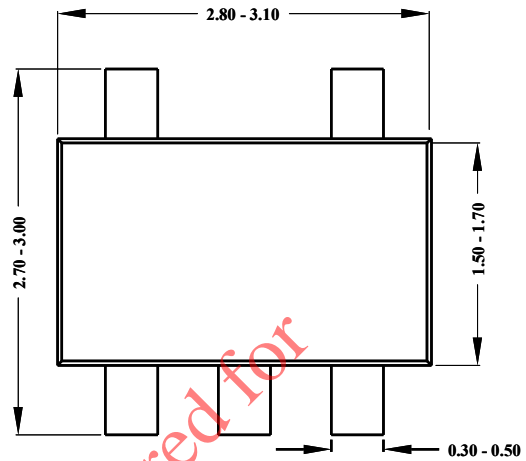
Block Diagram



TSOT23-5 Package outline & PCB layout design



Recommended Pad Layout

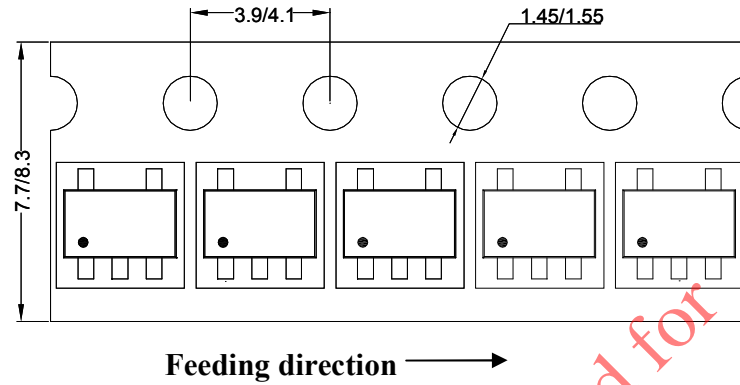


**Notes: All dimensions are in millimeters.
All dimensions don't include mold flash & metal burr.**

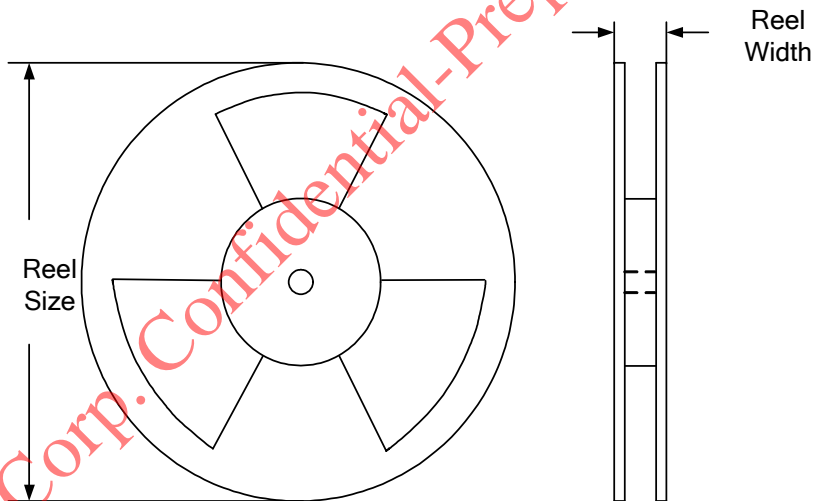
Taping & Reel Specification

1. Taping orientation

TSOT23-5



2. Carrier Tape & Reel specification for packages



Package types	Tape width (mm)	Pocket pitch(mm)	Reel size (Inch)	Reel width(mm)	Trailer length(mm)	Leader length (mm)	Qty per reel
TSOT23-5	8	4	7"	8.4	280	160	3000

3. Others: NA