

General Description

SY6282L is ultra-low $R_{DS(ON)}$ switch with programmable current limit to protect the power source from over current and short circuit conditions. It incorporates over temperature protection and reverse blocking function.

Ordering Information

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

Ordering Number	Package type	Note
SY6282LACC	TSOT23-5	

Features

- Input Voltage: 2.4V to 6V
- 2.5A 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 Application

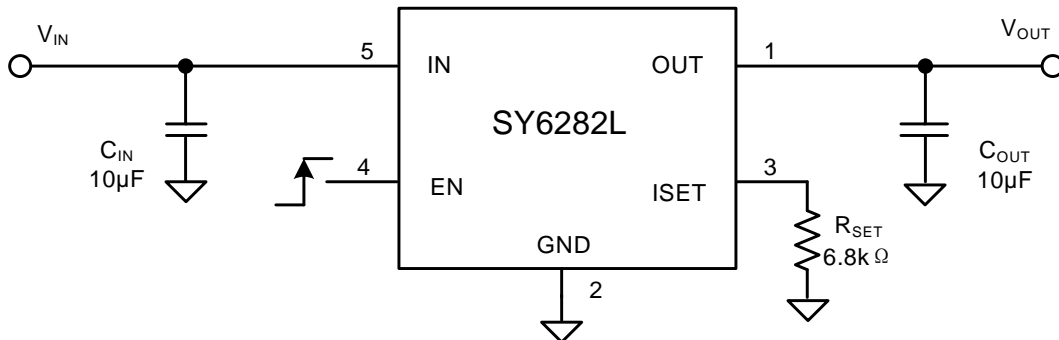
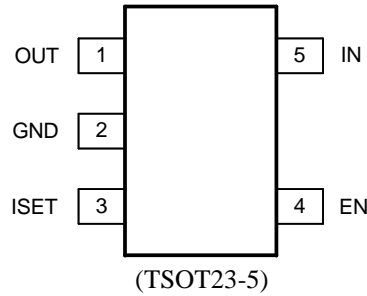


Figure1. Schematic Diagram

Pinout (top view)



Top mark: **Vmxyz** for SY6282LACC (Device code: Vm, *x=year code*, *y=week code*, *z=lot number code*)

Pin Name	Pin number	Pin Description
OUT	1	Output pin, decoupled with a 10μF 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: $I (A) = 6800/R (\Omega)$
EN	4	ON/OFF control. Pull high to enable IC. Do not leave it floating.
IN	5	Input pin, decoupled with a 10μF capacitor to GND.

Block Diagram

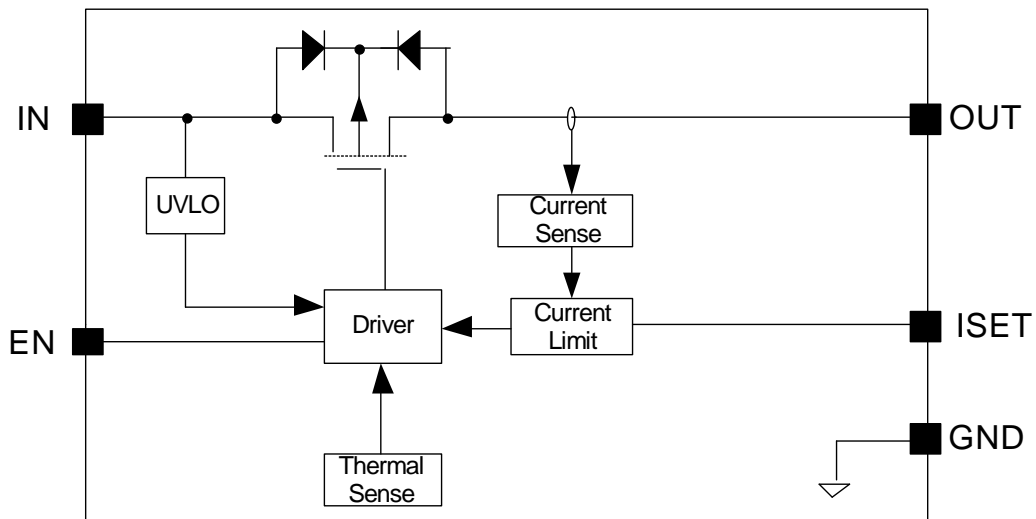


Figure2. Block Diagram



Absolute Maximum Ratings (Note 1)

IN, OUT, EN, ISET ----- -0.3V to 7V
 Power Dissipation, P_D @ T_A = 25°C TSOT23-5 ----- 1.46W
 Package Thermal Resistance (Note 2)
 θ_{JA} ----- 68.5°C/W
 θ_{JC} ----- 10.9°C/W
 Junction Temperature Range ----- -40°C to 150°C
 Lead Temperature (Soldering, 10 sec.) ----- 260°C
 Storage Temperature Range ----- -65°C to 150°C

Recommended Operating Conditions (Note 3)

IN----- 2.4V to 6V
 OUT, ISET----- 0V to 6V
 EN ----- 0V to IN
 Junction Temperature Range ----- -40°C to 125°C
 Ambient Temperature Range ----- -40°C to 85°C

Electrical Characteristics

(V = 5V, C = 10μF, T = 25°C, unless otherwise specified.)

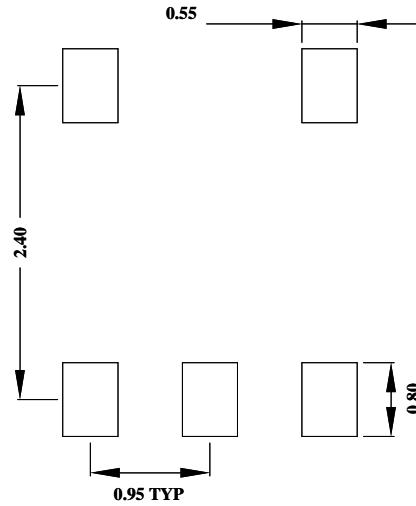
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage Range	V		2.4		6	V
Shutdown Input Current	I	Open load, IC disabled		0.2	1	μA
Quiescent Supply Current	I	Open load, IC enabled		38		μA
FET R	R			80		mΩ
EN Rising Threshold	V		2			V
EN Falling Threshold	V				0.8	V
EN Leakage Current	I	V = 5.0V			1	μA
IN UVLO Threshold	V _{UVLO}				2.3	V
IN UVLO Hysteresis	V _{UVLO_HYS}			0.1		V
Over Current Limit	I _{OL}	R = 6.8kΩ	0.75	1	1.25	A
Programmable current limit range	I _{OL}		0.4		2.5	A
Turn-on Time	t _{ON}	R = 10Ω, C = 1μF		130		μs
Turn-off Time	t _{OFF}	R = 10Ω, C = 1μF		20		μs
Thermal Shutdown Temperature	t _{SD}			150		°C
Thermal Shutdown Hysteresis	t _{SD_HYS}			20		°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.

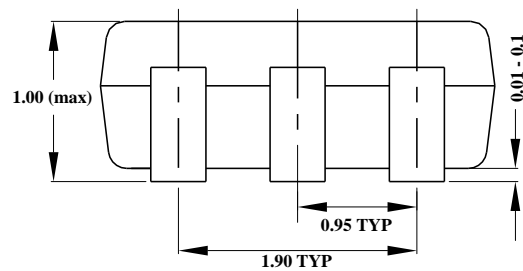
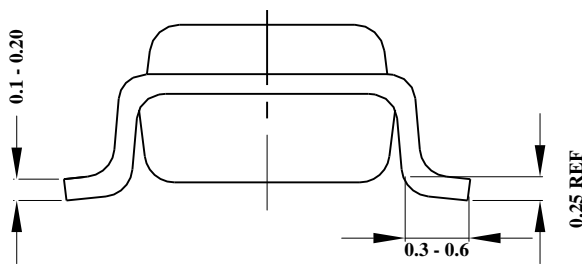
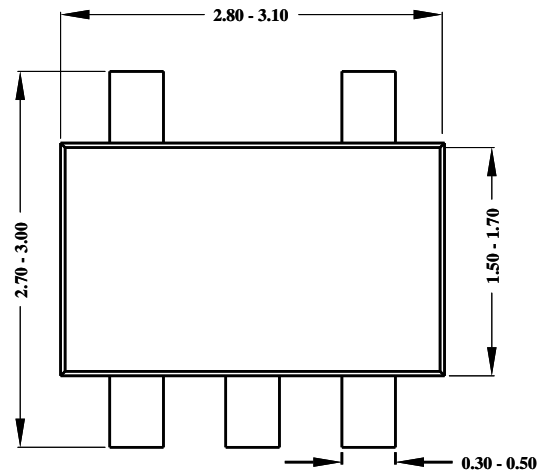
Note 2: θ_{JA} is measured in the natural convection at T_A = 25°C on a Silergy test board. Pin 2 of TSOT23-5 package is the case position for θ_{JC} measurement.

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

TSOT23-5 Package outline & PCB Layout Design



Recommended Pad Layout

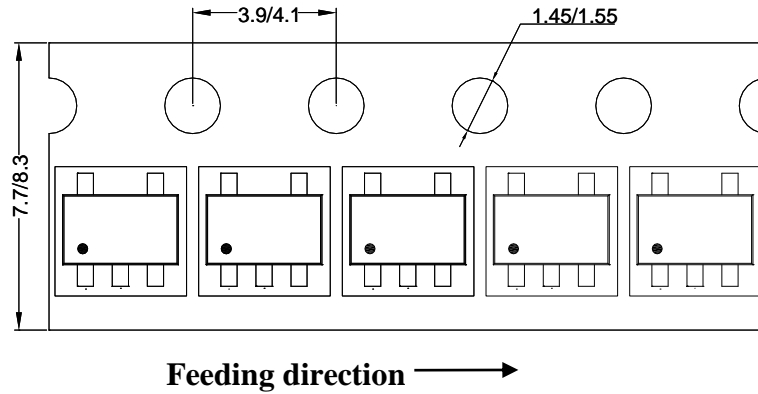


**Notes: All dimensions are in millimeters.
All dimensions don't include mold flash & metal burr.**

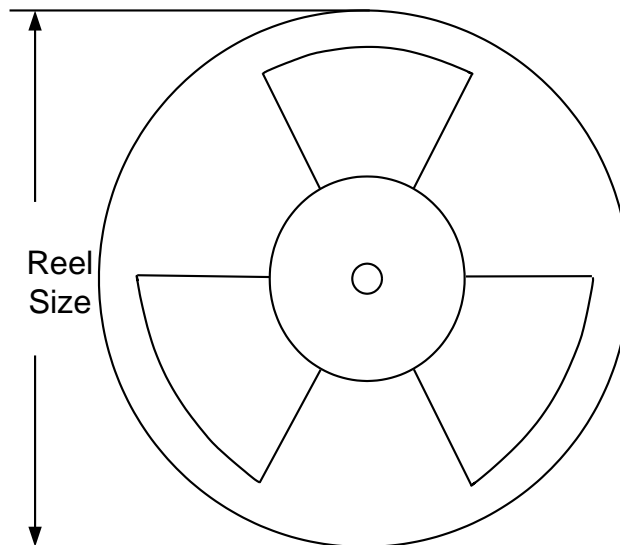
Taping & Reel Specification

1. Taping orientation

TSOT23-5



2. Carrier Tape & Reel specification for packages



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

3. Others: NA