

USB Host Charger Identification

General Description

The SLG55570A is a USB host charger (dedicated charger) identification circuit. The device supports both the latest USB Battery Charging Specification Revision 1.2 including data contact detection and a set resistor bias for Apple* compliant devices as well as legacy USB D+/D- short detection using data line pull-up.

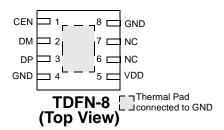
Features

- · Low Supply Current
- Automatic Current-Limit Switch Control
- · Automatic USB Charger Identification Circuit
- Apple iPad* @ 2.4A charging current support
- Chinese Telecom Standard YD/T 1591-2009 specification support
- Samsung Galaxy Tab** charge scheme support
- Pb-Free / RoHS Compliant / Halogen-Free
- TDFN-8 Package

Target Applications

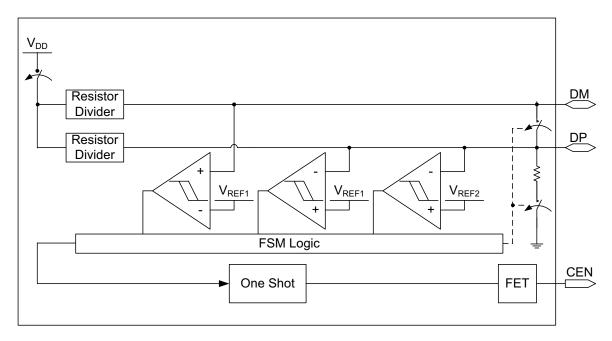
- · Power bank
- · Car charger
- · USB universal wall charger

Pin Configuration - SLG55570A



- * Apple iPhone, iPad and iPod are trademarks of Apple Inc., registered in the U.S. and other countries.
- ** Samsung Galaxy Tab are trademarks of Samsung Electronics, registered in Korea and other countries.

Block Diagram





Pin Description - SLG55570A

Pin#	Pin Name	Туре	Pin Description
1	CEN	Output	N-FET Open Drain Output. Current Limit Switch (CLS) Control Output. CEN will be low for 2 seconds (typ). Requires a pull up resistor.
2	DM	Input/Output	USB Connector D-
3	DP	Input/Output	USB Connector D+
4	GND	GND	Ground
5	VDD	PWR	Power Supply. Connect a $0.1\mu\text{F}$ capacitor between VDD and GND as close as possible to the device.
6	NC	NC	No Connect
7	NC	NC	No Connect
8	GND	GND	Ground
9	Thermal Pad	GND	Ground (Must connect to Ground)

Ordering Information

Part Number	Туре
SLG55570AV	TDFN-8
SLG55570AVTR	TDFN-8 - Tape and Reel



Absolute Maximum Ratings

Parameter	Min.	Max.	Unit
Supply Voltage	-0.3	6.0	V
Continuous Current into any terminal	-30	+30	mA
Continuous Power Dissipation		954	mW
Operating Temperature Range	-40	85	°C
Junction Temperature		150	°C
Storage Temperature Range	-65	150	°C
Lead Temperature (Soldering, 10s)		260	°C

Note: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

Electrical Characteristics - Power Supply

 V_{DD} = 4.75 V to 5.25 V, T_A = 25°C (unless specified otherwise)

Parameter	Description	Condition/Note	Min.	Тур.	Max.	Unit
V_{DD}	Power Supply Range		4.75	-	5.25	V
I _{DD}	Supply Current V _{DD} = 5V			140	160	μΑ

Electrical Characteristics - Dynamic Performance

 V_{DD} = 4.75 V to 5.25 V, T_A = 25°C (unless specified otherwise)

ĺ	Parameter	Description	Condition/Note				Unit
	C _{ON}	DP/DM On-Capacitance	f = 240MHz	'	4.0	5.5	pF

Electrical Characteristics - Internal Resistors

 V_{DD} = 4.75 V to 5.25 V, T_A = 25°C (unless specified otherwise)

Parameter	Description	Condition/Note	Min.	Тур.	Max.	Unit
R _{PD}	DP/DM Short Pull-down		350	500	700	kΩ
RT _{RP}	RP1/RP2 Ratio		0.8544	0.863	0.872	Ratio
R _{RP}	RP1 + RP2 Resistance		69.75	93.0	115.18	kΩ
RT _{RM}	RM1/RM2 Ratio		0.8544	0.863	0.872	Ratio
R _{RM}	RM1 + RM2 Resistance		69.75	93.0	115.18	kΩ



Electrical Characteristics - CEN Output

 V_{DD} = 4.75 V to 5.25 V, T_{A} = 25 $^{\circ}C$ (unless specified otherwise)

Parameter	Description	scription Condition/Note		Тур.	Max.	Unit
T _{VBT}	V _{BUS} Toggle Time		1.5	2.0	2.5	S
V _{OL_CEN}	CEN Output Logic Low Voltage				0.4	V
I _{OUT_CEN}	CEN Output Leakage Current	$V_{DD} = 5.5V$ $V_{CEN} = 5.5V$ or CEN deasserted			1	μΑ

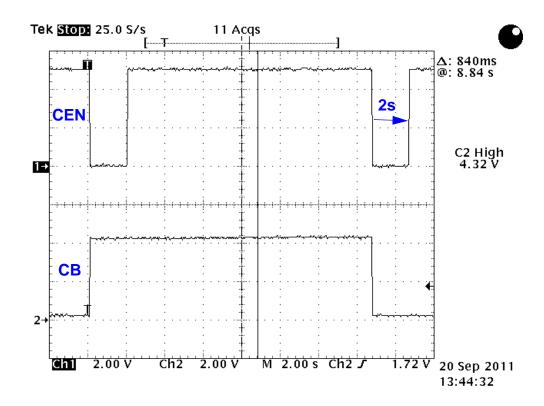
Electrical Characteristics - ESD Protection

 V_{DD} = 4.75 V to 5.25 V, T_A = 25°C (unless specified otherwise)

Parameter	Description	Condition/Note	Min.	Тур.	Max.	Unit
V _{ESD}	ESD Protection Level (DP and DM Only)	Human Body Model		±8		kV
V _{ESD}	ESD Protection Level (All other pins)	Human Body Model		±2		kV

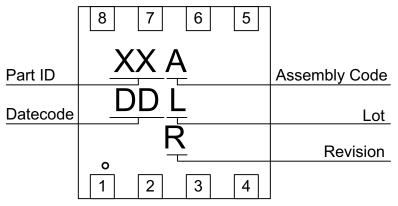


CEN Function Waveform





Package Top Marking System Definition



XX - Part ID Field: identifies the specific device configuration A - Assembly Code Field: Assembly Location of the device.

DD - Date Code Field: Coded date of manufacture

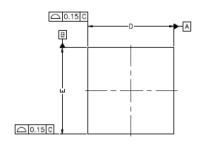
L - Lot Code: Designates Lot #

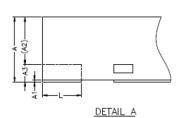
R - Revision Code: Device Revision

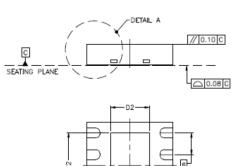


Package Drawing and Dimensions

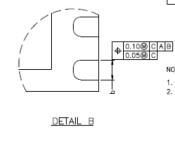
8 Lead TDFN Package JEDEC MO-229, Variation WCCD

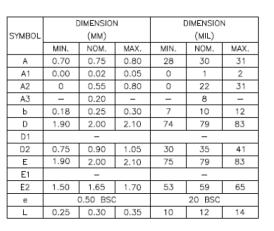






-DETAIL B





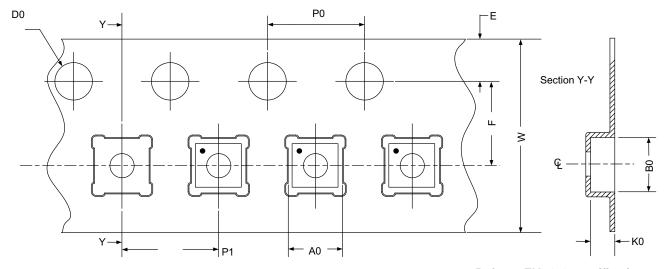
- REFER TO JEDEC STD: MO-229.
 DIMENSION "b" APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.15MM AND 0.30MM FROM THE TERMINAL TIP. IF THE TERMINAL HAS OPTIONAL RADIUS ON THE OTHER END OF THE TERMINAL, THE DIMENSION B SHOULD NOT BE MEASURED IN THAT RADIUS AREA.

Tape and Reel Specifications

Package Type	# 05	Package Size	Max Units		Reel &	Leader (min)		Trailer (min)		Таре	Part
	# of Pins		per Reel	per Box	Hub Size [mm]	Pockets	Length [mm]	Pockets	Length [mm]	Width [mm]	Pitch [mm]
TDFN 8L Green	8	2 x 2 x 0.75	3,000	3,000	178 / 60	100	400	100	400	8	4

Carrier Tape Drawing and Dimensions

Package Type	PocketBTM Length	PocketBTM Width	Pocket Depth	Index Hole Pitch	Pocket Pitch	Index Hole Diameter	Index Hole to Tape Edge		Tape Width
	A0	В0	K0	P0	P1	D0	E	F	W
TDFN 8L Green	2.3	2.3	1.05	4	4	1.55	1.75	3.5	8



Refer to EIA-481 specification

Recommended Reflow Soldering Profile

Please see IPC/JEDEC J-STD-020: latest revision for reflow profile based on package volume of 3.00 mm³ (nominal). More information can be found at www.jedec.org.



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