

Data Sheet

Type Description : **USB Charger EnhanceIC**

Product Name : **EST5199B**

Reversion : **2.0**

Reversion Date : **November 11, 2014**

Page : **9 Pages**

EST.5199B

2-Port USB Charger Enhance IC



DESCRIPTIONS

The EST5199B is a 2-port USB charger ID controller. The built-in detector monitors USB data lines voltage and automatically provides the correct signal on the data lines to charge compliant devices. And the amount of charging current will be decided by charge compliant devices.

The EST5199B support the following most common protocols

- USB Battery Charging Specification, Revision 1.2 (BC 1.2)
- Chinese Telecommunications Industry Standard YD/T 1591-2009
- Divider Mode for specific devices, such as Apple devices

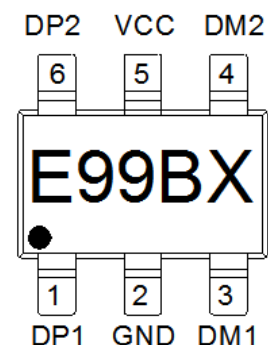
FEATURE

- Automatically Switch D+ and D- lines connections for an Attached Device
- Supports Short Mode
- Supports Divider Mode
- Operating range : 4.5V to 5.5V
- Available in SOP-23-6 package

APPLICATION

- AC-DC wall adapter with USB port
- Vehicle USB power charger
- Other USB charger
- Power bank USB charger

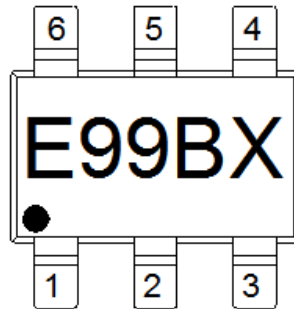
PIN CONFIGURATION (TOP VIEW)



ORDERING INFORMATION

ORDER NUMBER	Package	Shipping	Top Marking
EST5199B	SOT-23-6L (Pb-free)	Tape & Reel	E99BX

PIN INFORMATION

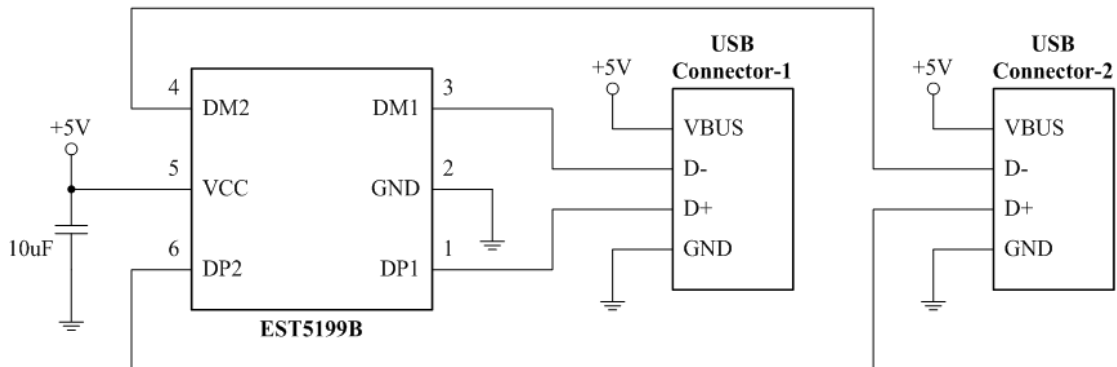


E : BRAND
 99B : Part Number
 X : tracking code
 ● : PIN 1

PIN DESCRIPTION

Pin	Symbol	Function
1	DP1	Port-1 USB data line plus output. The pin connects to D+ data line of USB connector and provides the correct signal to charge compliant devices.
2	GND	IC ground.
3	DM1	Port-1 USB data line minus output. The pin connects to D- data line of USB connector and provides the correct signal to charge compliant devices.
4	DM2	Port-2 USB data line minus output. The pin connects to D- data line of USB connector and provides the correct signal to charge compliant devices.
5	VDD	IC Supply voltage. This pin connects an external bypass capacitor 10uF to GND.
6	DP2	Port-2 USB data line plus output. The pin connects to D+ data line of USB connector and provides the correct signal to charge compliant devices.

TYPICAL APPLICATION CIRCUIT



ABSOLUTE MAXIMUM RATINGS

PARAMETER		MIN	MAX	UNITS
IC Supply Voltage	VCC	-0.3	7	V
Output Voltage	DP1, DP2, DM1, DM2	-0.3	VDD+0.3	V
Operating Temperature Range		-20	+85	°C
Storage Temperature		-65	150	°C
Soldering Temperature			260	°C
ESD Protection Rating	Human Body Model (HBM) ^{*NOTE1}	±8 (Class-3B)		KV
	Machine Model (MM) ^{*NOTE2}	±400 (Class-M4)		V

Note1: Testing Facility:

- Testing Ambient Condition [Temperature: 25±5 °C] [Humidity:55±10%]
- Reference Documents [MIL-STD-883H/Method 3015.8]
- Human Body Model Rating:
 - Class 0: 0V ~ 249V
 - Class 1A: 250V ~ 499V
 - Class 1B: 500V ~ 999V
 - Class 1C: 1000V ~ 1999V
 - Class 2: 2000V ~ 3999V
 - Class 3A: 4000V ~ 7999V
 - Class 3B: 8000V ~

Note2: Testing Facility:

- Testing Ambient Condition [Temperature: 25±5 °C] [Humidity:55±10%]
- Reference Documents [AHSI/ESD S5.2-2009]
- Machine Model Rating
 - Class M1: 0V ~ 99V
 - Class M2: 100V ~ 199V
 - Class M3: 200V ~ 399V
 - Class M4: 400V ~



CAUTION

This integrated circuit has been designed carefully in the ESD protection ability. Failure to observe proper handling and installation procedures may cause damage. Recommend that all integrated circuits should be handled with appropriate precautions.

ELECTRICAL CHARACTERISTICS (For VCC=5V and Tj=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
VDD Supply						
VDD Operating Voltage	VDD		4.5	5.0	5.5	V
VDD Operating Current	IDD		360	480	600	µA
DP/DM Function						
DP Output Impedance	DP1, DP2		24	32	40	KΩ
DM Output Impedance	DM1, DM2		24	32	40	KΩ

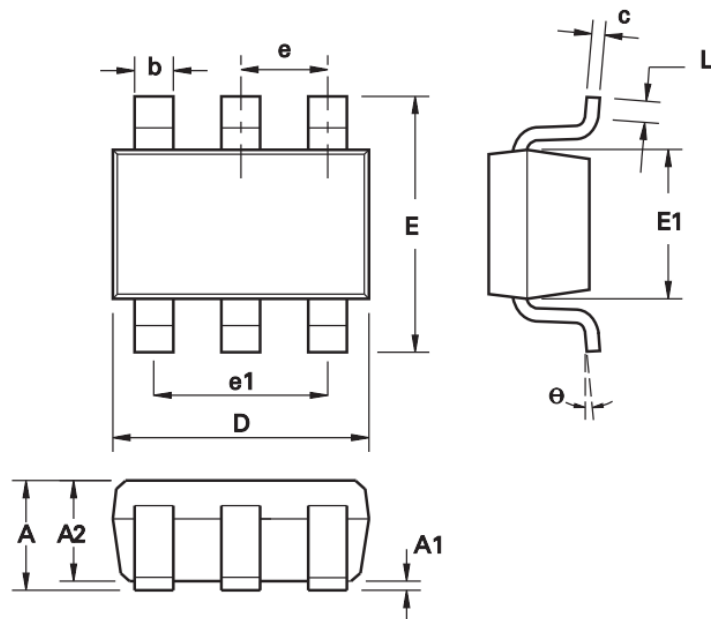
EST.5199B

2-Port USB Charger Enhance IC



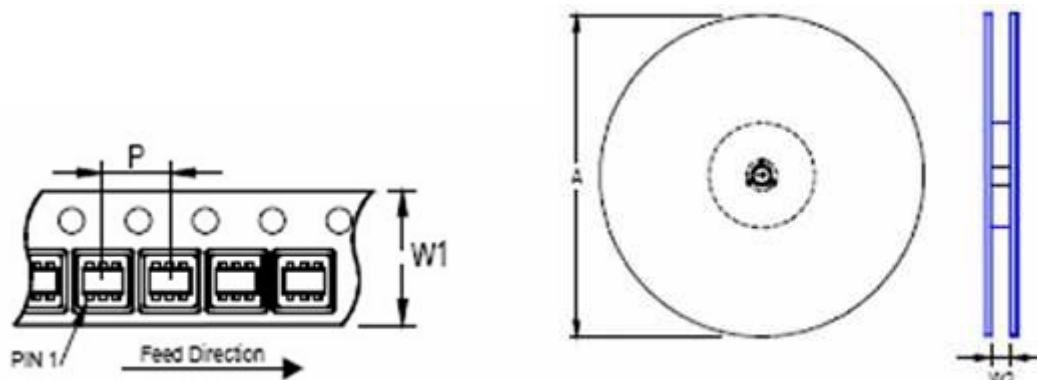
PACKAGE DIMENSIONS

SOT23-6



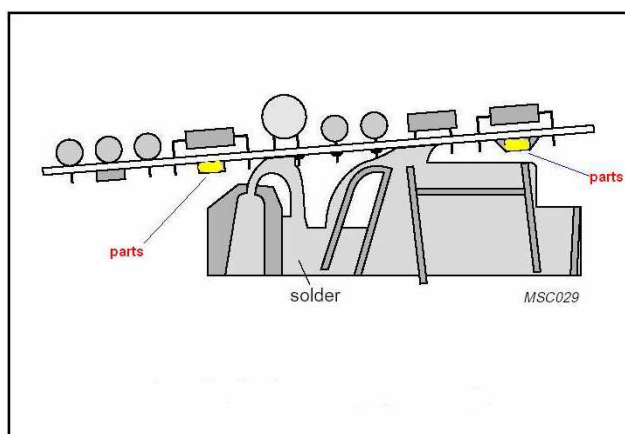
DIM	Millimeters	
	Min.	Max.
A	0.90	1.45
A1	0.00	0.15
A2	0.90	1.30
b	0.20	0.50
c	0.09	0.26
D	2.70	3.10
E	2.20	3.20
E1	1.30	1.80
e	0.95 REF	
e1	1.90 REF	
L	0.10	0.60
a°	0°	30°

TAPE REEL DATA

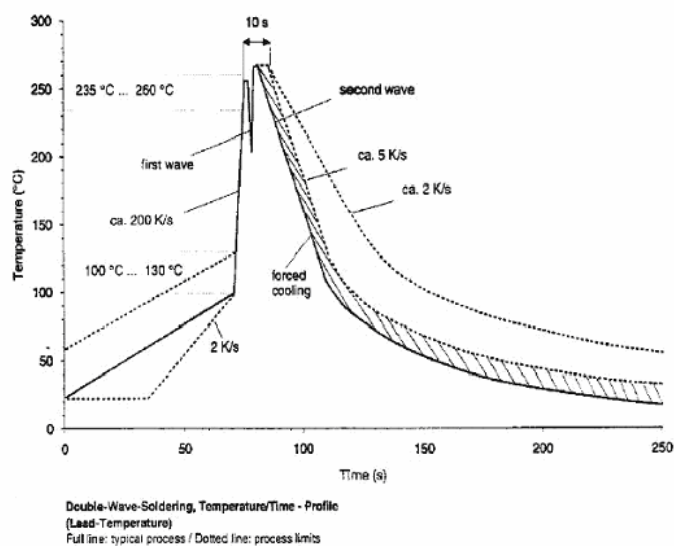


Package Type SOT-26	Tape Size (W1) (mm)	Pocket Pitch (P) (mm)	Reel Size (A) (mm)	Reel Width (W2) Min./Max. (mm)	Units Per Reel pcs.
6 Lead	8	4	180	8.4/9.9	3000

WAVE SOLDERING PROCESS



WAVE SOLDERING PROFILE



Update History

Revision	Date	Update
1.0	November 11, 2014	Further explanation about the mode selection

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