



Formerly



Semiconductor

# Silicon Link, Inc.

## COMPANY PROFILE



# CORPORATE OVERVIEW

**Headquarters: California, USA**

**Established: November 2003**

**Formerly:**  **ASTEC Semiconductor**

**(Silicon Link acquired Astec Semiconductor)**

**Factory: Laguna Technopark, Philippines**

**Products: Power Management ICs**



ASTECS POWER

ASTECS SEMICONDUCTOR



**EMERSON**  
Emerson acquired  
Astec Power



**SILICON LINK**  
Silicon Link  
acquired Astec  
Semiconductor



# CUSTOMER BASE

SILICON LINK



Manufacturing

Laguna Technopark  
Binan, Laguna,  
Philippines 4024



Tel: (63)49 5413452

(63) 2 7293736

Fax: (63) 49 541 348



SILICON LINK

# GLOBAL FOOTPRINT

## IC Design

- USA

## Wafer Foundry

- USA
- China

## Assembly House

- Philippines
- China



- - IC design
- - Fabrication
- ◆ - Assembly
- ▲ - Silicon Link Sales

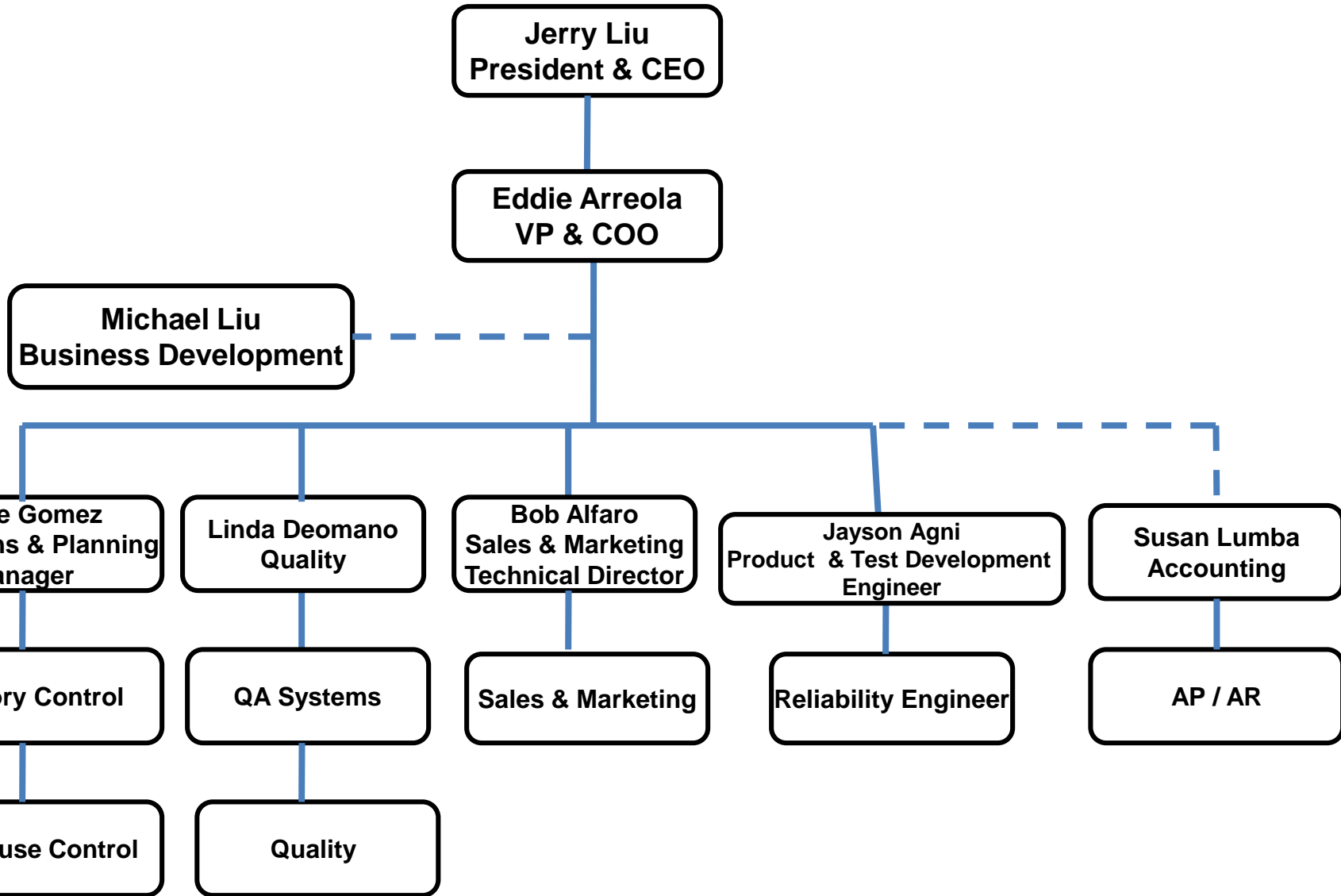
## Distribution

- |          |           |           |             |
|----------|-----------|-----------|-------------|
| • USA    | Germany   | Hong Kong | Thailand    |
| • Europe | Singapore | India     | Philippines |
| • Taiwan | Malaysia  | China     |             |



SILICON LINK

# ORGANIZATIONAL CHART







# CERTIFICATIONS

SILICON LINK

## SUBCONTRACTORS FULLY QUALIFIED

- ISO/TS16949 Automobile Quality
- ISO9001 Quality Assured Firm
- ISO9002 Quality Management Systems
- ISO14001 Environmental Management Systems
- QS9000 Quality Management Systems
- DSCC Defense Supply Center Columbus
- UL Underwriters Laboratories
- BABT British Approvals Board for Telecommunications



This company has been certified by TUV SUD  
**ISO/TS 16949**







# CAPABILITIES

SILICON LINK

## *ENGINEERING*

### Model

HP4155A

HP4145A

Micromanipulator

Temptronic

Tektronix 576 CT

Tektronix 400MHz DSS

Quality Lab Equipments

### Application

Parametric Analysis

Characterization

Analytical Probing

Temperature Testing

Component Testing

Evaluation & Troubleshooting

Bench Testing



## *RELIABILITY & FAILURE ANALYSIS*

### Model

Master View Comparator

Polyvar High Mag

Microscope

Blue M Oven

NS PS101

HP4155A

### Application

Dimensional Analysis

Wafer Inspection

High Magnification

Burn In

Package Decapsulation

Parametric Analysis





# PRODUCT LINES

SILICON LINK

## VOLTAGE REFERENCES

- AS431**  
2.5V Ref  
37V Vka  
0.25/0.5/1/2%
- AS1431**  
2.5V Ref  
37 Vka  
0.4%
- AS2431**  
2.5V Ref  
18V Vka  
0.25/0.4/0.5/1/2%
- AS432**  
1.24V Ref  
18V Vka  
0.25/0.5/1/2%
- AS1004**  
1.235Vz/ 2.5Vz  
0.3% / 0.8%

## DC/DC CONVERTERS

- MC34063**  
Step-up /  
Step-down
- SL2575**  
3.3/5/12/15V/  
Adjustable  
2A Output  
52 kHz
- SL2576**  
3.3/5/12/15V/  
Adjustable  
3A Output  
52 kHz
- SL2596**  
3.3/5/12/15V/  
Adjustable  
3A Output  
152 kHz

## PWM CONTROLLERS

- AS2842/3/4/5**  
**AS3842/3/4/5**  
Duty Cycle  
49.5 – 97%
- SL384XG**  
50uA Start-up  
6mA Operating  
0.5W Standby

## LED DRIVERS

- SL9910**  
Up to 2A Output
- SL9920**  
Up to 1A Output
- SL5100**  
Drive up  
to 14 LEDs

## LOW DROPOUT/ VOLTAGE REGULATORS

- SL1117**  
1.5/2.5/2.85/  
3/3.3/3.5/5V/  
Adjustable  
1A Output
- LP2950**  
2.85/3/3.3/5V  
100mA Output
- SL78Lxx**  
5/6/8/9/12V  
100mA Output
- SL1150**  
3.3V  
150mA Output
- SL6150**  
5V  
150mA Output

## OP AMPS

- SL358**  
Dual
- SL324**  
Quad



Detailed Product Portfolio

## COMPARATORS

- SL393**  
Dual
- SL339**  
Quad

## SILICON CONTROLLED RECTIFIER

- MCR100**  
Ion-state 0.8/1/2A

## PFC CORRECTION CONTROLLER

- SL6562**  
600mA Source Current  
800mA Sink Current



# Voltage References

## VOLTAGE REFERENCES

### AS431

2.5V Ref  
37V Vka  
0.25/0.5/1/2%

### AS1431

2.5V Ref  
37 Vka  
0.4%

### AS2431

2.5V Ref  
18V Vka  
0.25/0.4/0.5/1/2%

### AS432

1.24V Ref  
18V Vka  
0.25/0.5/1/2%

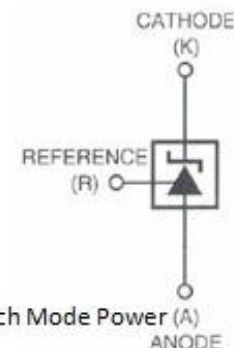
### AS1004

1.235Vz/ 2.5Vz  
0.3% / 0.8%

Trimmed to 0.25%, 0.4%, 0.5%, 1% and 2% band gap tolerance  
Internal amplifier with 150mA capability  
Temperature range extended to -55 to 125°C  
Temperature-compensated: 30 ppm/°C  
Low frequency dynamic output impedance

#### Application:

Microprocessor Supply, Portable Consumer Electronics, Desktop and Notebook PC, Post Regulators for Switch Mode Power Supplies, Battery Chargers, Telecommunications, Printer Supplies



Device	Voltage Reference (V)	Cathode Current (I)	Cathode Voltage (V)	Tolerance (%)	Package
AS431	2.5V	150mA	37V	0.25%, 0.5%, 1%, 2%	TO-92, SOIC-8L, SOT-23, SOT-89
AS1431	2.5V	150mA	37V	0.4%	TO-92, SOIC-8L, SOT-23, SOT-89
AS2431	2.5V	100mA	18V	0.25%, 0.4%, 0.5%, 1%, 2%	TO-92, SOIC-8L, SOT-23, SOT-89
SL432	1.24V	100mA	18V	0.25%, 0.5%, 1%, 2%	TO-92, SOIC-8L, SOT-23, SOT-89



# DC-DC CONVERTERS

SILICON LINK

## DC/DC CONVERTERS

**MC34063**

Step-up /  
Step-down

**SL2575**

3.3/5/12/15V/  
Adjustable  
2A Output  
52 kHz

**SL2576**

3.3/5/12/15V/  
Adjustable  
3A Output  
52 kHz

**SL2596**

3.3/5/12/15V/  
Adjustable  
3A Output  
152 kHz

Fixed or adjustable output voltage  
Low dropout voltage – as low as 0.38V  
Output current range from 1.5A to 3A  
Current limit protection  
Thermal shutdown protection

### Application

Switch Mode Power Supply (SMPS), DVD-ROM, CD-ROM, Desktop and notebook PC, DSL Modem, Battery Charger

Device	Step-up / Step-down	Min Vin (V)	Max Vin (V)	Output Voltage (V)	Output Current (A)	Max Frequency	Package
MC34063	Step-up / Step-down	3V	40V	adjustable	1.5A	100kHz	SOIC-8L PDIP-8L
SL2575	Step-down	12V	40V	3.3V, 5V, 12V, 15V, adjustable	2A	52kHz	SOP-8 EDP
SL2576	Step-down	12V	40V	3.3V, 5V, 12V, 15V, adjustable	3A	52kHz	SOP-8 EDP
SL2596	Step-down	12V	40V	3.3V, 5V, 12V, 15V, adjustable	3A	152kHz	SOP-8 EDP





# PWM CONTROLLERS

SILICON LINK

## PWM CONTROLLERS

AS2842/3/4/5  
AS3842/3/4/5  
Duty Cycle  
49.5 – 97%

SL384XG  
50uA Start-up  
6mA Operating  
0.5W Standby

Oscillations trimmed for precision duty cycle clamp

AS284x operating temperature range from -40 to 105 °C

AS384x operating temperature range from 0 to 105 °C

Improved specifications on UVLO and hysteresis provide more predictable start up and shut down

Application:

Mobile Phone, WLAN Card, Notebook and Palm top computers, Consumer portable devices, Switch Mode Power Supply Post Regulators, High Efficiency Linear Power Supplies, LCD Monitor/LCM Battery Powered Equipment.

Device	Temp Range	Max Duty Cycle (%)	Output Current (A)	Vcc min (V)	Package
AS2842	-40 to 105 °C	97%	1A	10V	SOIC-8L, PDIP-8L
AS2843	-40 to 105 °C	97%	1A	7.6V	SOIC-8L, PDIP-8L
AS2844	-40 to 105 °C	49.5%	1A	10V	SOIC-8L, PDIP-8L
AS2845	-40 to 105 °C	49.5%	1A	7.6V	SOIC-8L, PDIP-8L
AS3842	0 to 105 °C	97%	1A	10V	SOIC-8L, PDIP-8L
AS3843	0 to 105 °C	97%	1A	7.6V	SOIC-8L, PDIP-8L
AS3844	0 to 105 °C	49.5%	1A	10V	SOIC-8L, PDIP-8L
AS3845	0 to 105 °C	49.5%	1A	7.6V	SOIC-8L, PDIP-8L

Equivalent: Texas Instruments, STMicroelectronics and [Faichild UC284x and UC384x](#)



# LED DRIVERS

SILICON LINK

## LED DRIVERS

SL9910

Up to 2A Output

SL9920

Up to 1A Output

SL5100

Drive up to 14 LEDs

Step-up and Step-down LED drivers

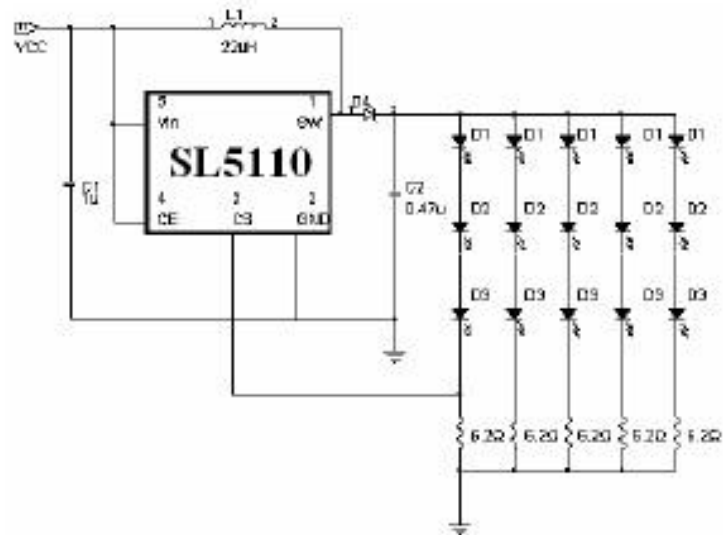
Can drive multiple LED strings as much as 14 LED

Up to 85% Efficiency

Minimum input voltage of 2.5V up to 10V

Application

Handset, PDA, MP3, Photo Frame, Portable Electronics



Device	Step-up / Step-down	Drive Capability	Package
SL5110	Step-up	Up to 14 LEDs	SOT23-5L, SOT23-6L





SILICON LINK

# LDO Regulators

## LOW DROPOUT/ VOLTAGE REGULATORS

**SL1117**

1.5/2.5/2.85/  
3/3.3/3.5/5V/  
Adjustable  
1A Output

**LP2950**

2.85/3/3.3/5V  
100mA Output

**SL78Lxx**

5/6/8/9/12V  
100mA Output

**SL1150**

3.3V  
150mA Output

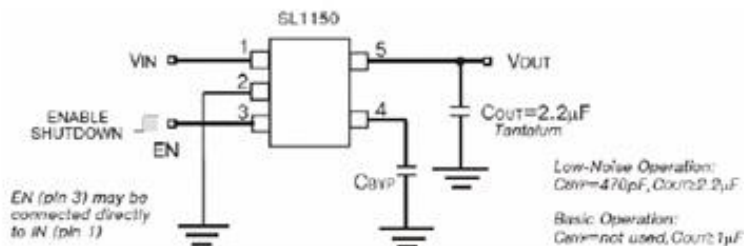
**SL6150**

5V  
150mA Output

Fixed or adjustable output voltage  
Low dropout voltage – as low as 165mV  
Output current range from 100mA to 1A  
Current limit protection  
Thermal shutdown protection

Application:

Microprocessor Supply, Portable Consumer Electronic Devices, Desktop and Laptop PC, Post Regulators for SMPS, Battery Chargers, Telecommunication, Printer Supplies.



Device	Output Voltage (V)	Output Current (A)	Dropout Voltage (V)	Max Input Voltage (V)	Package
LP2950	2.85V, 3.0V, 3.3V, 5.0V	100mA	0.38V	30V	TO-92, SOIC-8L
SL1117	Adj, 1.5, 1.8, 2.5, 3.3, 5.0	1A	1.15 typ	7	SOT-89, SOT-223
SL1150	3.3V	150mA	165mV typ	20V	SOT-23 5L
SL6150	5V	150mA	165mV typ	6.5V	SOT-23 5L

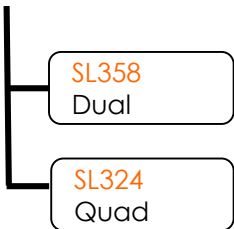
Equivalent for LP2950: On [Semiconductor](#), [Texas Instruments](#) and [National Semiconductor](#) LP2950

Equivalent for SL1117: [Fairchild](#) FAN1117, [NCP1117](#), [International Rectifier](#) IRU1117, [National Semi](#) LM1117



# OP Amps/ Comparators

## OP AMPS



### Applications

Transducer amplifiers, DC gain blocks and all conventional Op Amp circuits which now can be easily implemented in single power supply systems.

Device	Output	Usage	Min Vin (V)	Max Vin (V)	Package
SL358	Dual	Op Amp	1V	32V	SOIC-8L, PDIP-8L
SL324	Quad	Op Amp	0.9V	6V	SOIC-14L, PDIP-14L
SL339	Quad	Comparator	5V	30V	SOIC-14L, PDIP-14L
SL393	Dual	Comparator	1V	30V	SOIC-8L, PDIP-8L

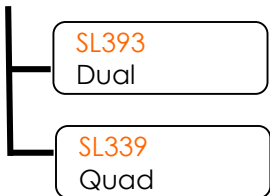
Equivalent for SL358: Fairchild, Texas Instruments, National Semiconductor LM358

Equivalent for SL324: Fairchild, Texas Instruments, National Semiconductor LM324

Equivalent for SL339: On Semiconductor, Texas Instruments, National Semiconductor LM339

Equivalent for SL393: STMicroelectronics, Fairchild, Texas Instruments, National Semiconductor LM393

## COMPARATORS



The SL393 consists of two independent voltage comparators. These were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage. The outputs can be connected to other open-collector outputs to achieve wired-AND relationships.



# SCR / PFC

SILICON LINK

## SILICON CONTROLLED RECTIFIER

**MCR100**  
Ion-state 0.8/1/2A

The SCR100 features a sensitive gate that allows triggering by Microcontrollers and other logic circuits. It can be driven directly by IC and MOS device.

Part	Vdrm	I on-state	Package
MCR100-4U	200V		
MCR100-6U	400V	0.8A	SOT-89, TO-92, SOIC-8
MCR100-8U	600V		

## PFC CORRECTION CONTROLLER

**SL6562**  
600mA Source Current  
800mA Sink Current

Low Start-up Current typically 50uA

Low Operating Supply Current typically 4mA

Disable Function Reduces Current Consumption

Capable of driving big power MOSFET or IGBT with 600mA source or 800mA sink current

Application:

TV, Monitor, PC, Network Server, SMPS up to 300W

Device	Drive Output Current (I)	Start-up Current (I)	Operating Supply Current (I)	Internal Reference Voltage	Package
SL6562	800mA Max	50uA Typ	4mA Typ	1%	SOIC-8L, PDIP-8L

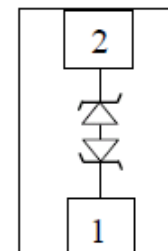
Equivalent: ST Microelectronics L6562



# ESD Protection

SILICON LINK

Transient protection for high-speed data lines to  
 IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
 IEC 61000-4-4 (EFT) 40A (5/50ns)  
 IEC 61000-4-5 (Lightning) 24A (8/20 $\mu\text{s}$ )



### Application:

Data line protection for high speed input output such as USB, HDMI, Flash Drive, LCD Video/Audio port, Ethernet port, IEEE Firewire port, Serial port, DSL port, SIM Card, External Memory, Keypad and buttons

Device	Reverse Standoff Voltage (V)	Peak Pulse Current (I) 8/20 us	Clamping Voltage (V)	Capacitance (pF)	Direction	Package
SLR0504	5V	6A	25V	1.5pF	Array	SOT23-6L, DFN 1.6x1.6x0.58mm
SSD	14V	6A	20V	0.25pF	Bidirectional	0402, 0603
SGE323	5V, 12V, 24V, 36V	1A	12V, 12V, 24V, 36V	23pF	Unidirectional	SOD323
SGD	5V, 12V, 24V	5.1A	7V, 17V, 25V	15pF, 12pF, 10pF	Bidirectional	DFN 1.0x0.6x0.55mm
SV(X)	3.3V, 5V, 12V, 24V	17A, 17A, 12A, 5A	8V, 10V, 20V, 43V	50pF	Array	SOT-23 3/5/6L, SOIC-8L, SOIC-14L



# Power Mosfets

SILICON LINK

Fast Switching Speed response through highly doped poly silicon.  
Improved EAS and R<sub>dson</sub> parameters by using optimized strip cells.  
Operating voltage covers from 400V to 800V.

PRODUCTS		NOMINAL CURRENT/VOLTAGE	R <sub>dson</sub> (Ω)		REMARKS
			Typ.	Max.	
SVD1NE40B	W/ ESD	300mA/400V	8.00	10.50	Package Information Abbreviation : T: TO-220-3L F: TO-220F-3L D: TO-252-2L M: TO-251-3L B: TO-92-3L PN: TO-3P
SVD1N60DB	-	500mA/600V	-	13.50	
SVD1N60M,T,B,D	-	1A/600V	-	11.00	
SVD1N70M,T	-	1A/700V	-	14.50	
SVD1N80M,T	-	1A/800V	-	16.00	
SVD2NE45T,F,D,M	W/ ESD	2A/450V	1.85	2.40	
SVD2N60T,F,M,D	-	2A/600V	3.50	4.60	
SVD2N70T,F,M	-	2A/700V	-	6.50	
SVD3N80T,F	-	3A/800V	3.00	4.00	
SVD4N60T,F,D	-	4A/600V	-	2.40	
SVD4N65T,F	-	4A/650V	-	3.00	
SVD5N60T,F	-	5A/600V	-	2.10	
SVD730T,F,D	-	6A/400V	-	0.95	
SVD830T,F,D	-	5A/500V	-	1.50	
SVD7N60T,F	-	7A/600V	0.90	1.20	
SVD7N65AT,F	-	7A/650V	-	1.40	
SVDN80T,F	-	7A/800V	1.30	1.55	
SVD8N60T,F	-	8A/600V	0.90	1.20	
SVD8N65T,F	-	8A/650V	-	1.40	
SVD840T,F	-	8A/500V	-	0.90	
SVD9N65T,F	-	9A/650V	0.98	1.20	
SVD10N65T,F	-	10A/650V	-	1.00	
SVD12N65T,F	-	12A/650V	0.61	0.80	
SVD13N50T,F	-	13A/500V	-	0.52	
SVD15NE50PN	W/ ESD	15A/500V	0.35	0.40	



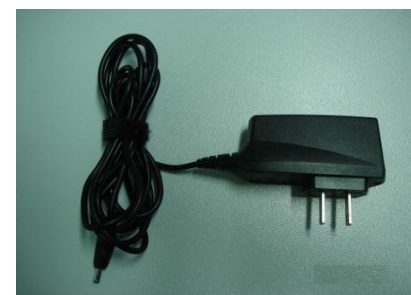


SILICON LINK

# PRODUCT APPLICATIONS



SMPS  
LCD TV  
LCD Photo Frame  
GPS  
Cell Phones  
PDA  
Mother boards  
Notebook computer  
Monitors  
Digital Cameras  
Set-Top Boxes  
Battery Chargers  
Adapters  
PC Power Supply  
Telecom Power Supply

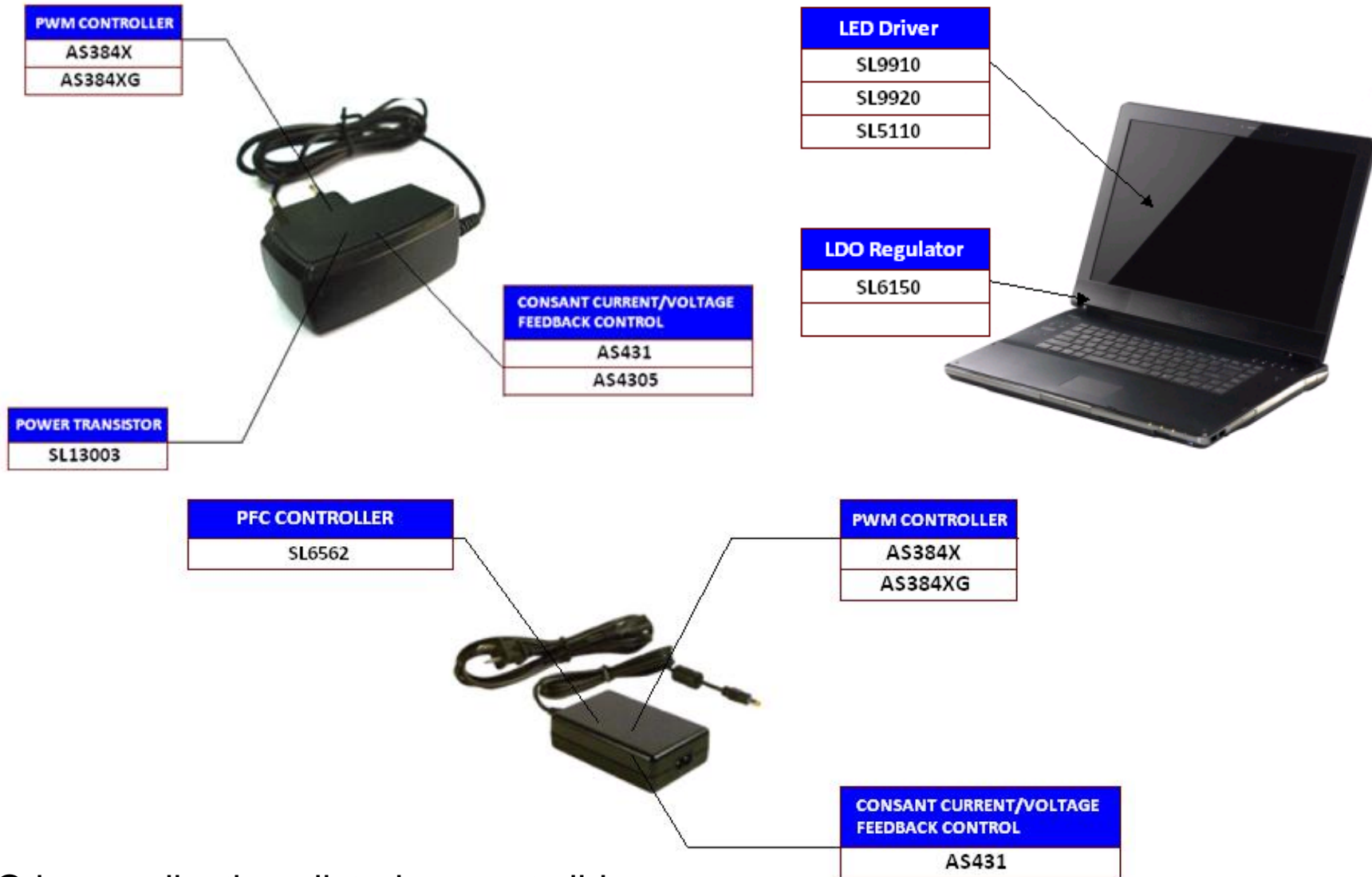






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# PRODUCT APPLICATIONS



Other applications listed on next slide



# OTHER CROSS REFERENCES

SILICON LINK

All our products are direct pin to pin drop in replacements with P/N below  
We can remove high priced competitor part, swap in ours, turn on board and it will work

Silicon Link	ST Microelectronics	Fairchild	On Semi	Texas Instruments	International Rectifier	National Semiconductor	Semtech	Vishay
SL6562	L6562							
SL78Lxx	L78Lxx							
SL79Lxx	L79Lxx							
SL3904		2N3904 MMBT3904	MMBT3904					
AS431	TL431			TL431		LM431	SC431	
AS1431	TL1431							
AS2431	TS3431							
AS432	ST432							TL432
AS2842	UC2842			UC2842				
AS2843	UC2843			UC2843				
AS2844	UC2844			UC2844				
AS2845	UC2845			UC2845				
AS3842		UC3842		UC3842				
AS3843		UC3843		UC3843				
AS3844		UC3844		UC3844				
AS3845	UC3845	UC3845		UC3845				
SL352								
SL2576			LM2576			LM2576		
SL1117		FAN1117	NCP1117		IRU1117	LM1117		
SL358		LM358		LM358		LM358		
SL339			LM339	LM339		LM339		
SL393	LM393	LM393		LM393		LM393		
SL324	LM324	LM324	LM324	LM324		LM324		
LP2950			LP2950	LP2950		LP2950		
SCR100			MCR100				MCR100	
MC34063		MC34063	MC43063	MC34063				



# KEY ADVANTAGES

To help our customers achieve their optimum operations, efficiency and JIT,  
We provide the following key advantages

- ☑ Internal Manufacturing
- ☑ Very Short L/T (2-4 weeks typical)
- ☑ Attractive Pricing
- ☑ ROHS Compliant
- ☑ Drop Ship

## WE LOOK FORWARD WORKING TOGETHER



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