BRIGHTEK

LED IC Driver

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SCT2001

3-Bit Constant Current LED Driver

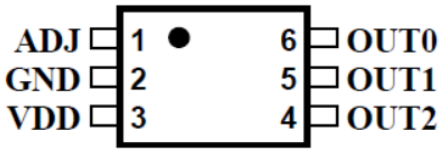
The SCT2001 is designed to drive multiple LEDs in series from a high input voltage rail. The SCT2001 contains 3 output channels which are regulated to sink constant current for driving LEDs of large range VF variations.

In the field of LEDs driving applications, users can simply adjust the output current from 10mA to 45mA through an external resistor RADJ to control the light intensity of LEDs. The SCT2001 guarantees to endure maximum DC 24V at each output port.

Part Number Table

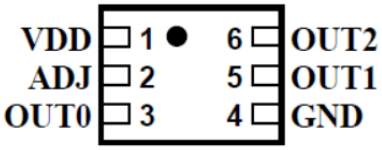
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2001 AS1G	3 Bits	SOT236	A	✓	Page 56
SCT2001 ADNG	3 Bits	DFN6	B	Contact us!	Page 48

Pin Configurations



A

Pin Configurations



B

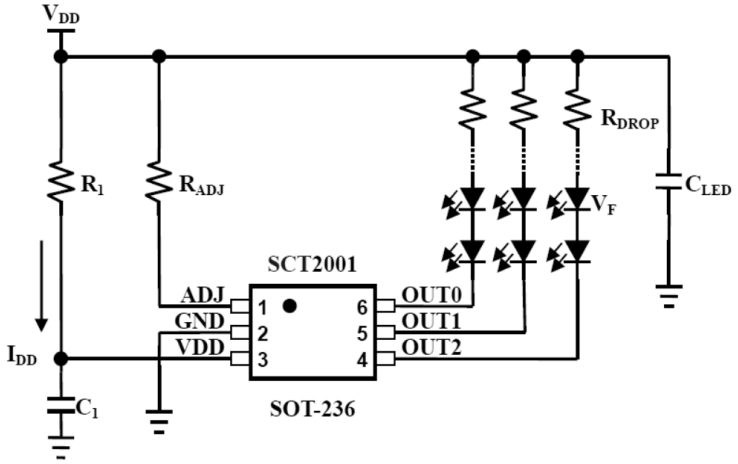
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	17	V
Input Voltage		V_{IN}	-0.4 to V_{DD}+0.4	V
Output Current		I_{OUT}	60	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	200	mA
Power Dissipation	SOT236	P_D	0.64	W
	DFN6		2.16	
Thermal Resistance	SOT236	$R_{TH(j-a)}$	195	°C/W
	DFN6		58	
Operating Temperature		T_{OPR}	-40~+85	°C

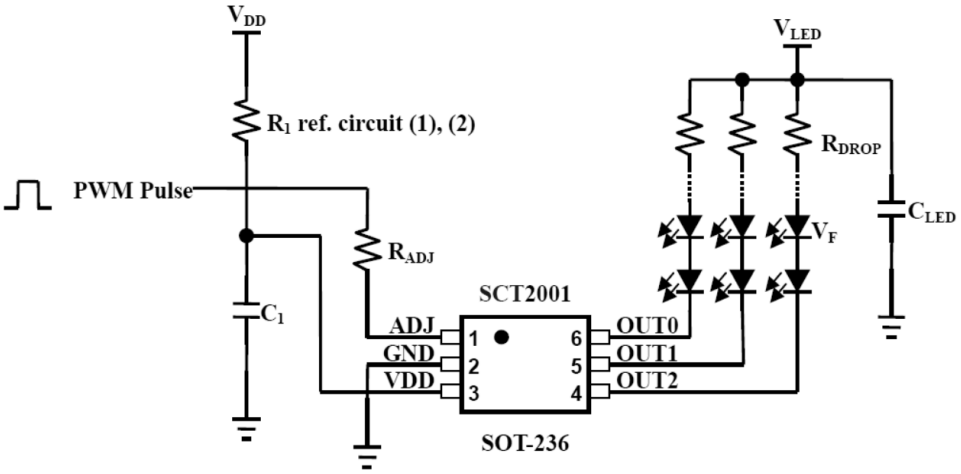
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	5	-	15	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	-	10	-	45	mA
Dimming Pulse Width	t_W	V_{DD}=5~15V	2	-	-	µS
Dimming Rise Time	t_R	V_{DD}=5~15V	-	-	1	µS
Dimming Fall Time	t_F	V_{DD}=5~15V	-	-	1	µS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2004

4-Bit Constant Current LED Driver

The SCT2004 is a four channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 80ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2004. The full scale current value of each output is set by an external resistor connected to REXT pin.

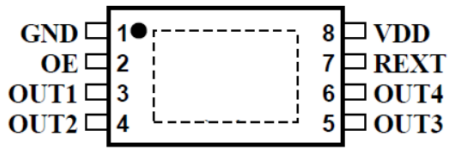
The SCT2004 guarantees to endure maximum DC 24V at each output port. Each output of SCT2004 can sink a constant current up to 320mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2004 easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2004 is equipped with negative temperature coefficient characteristics, thus the driver system and LEDs are protected from damage of thermal runaway or overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2004 CSOG	4 Bits	SOP8TP	C	✓	Page 54

Pin Configurations



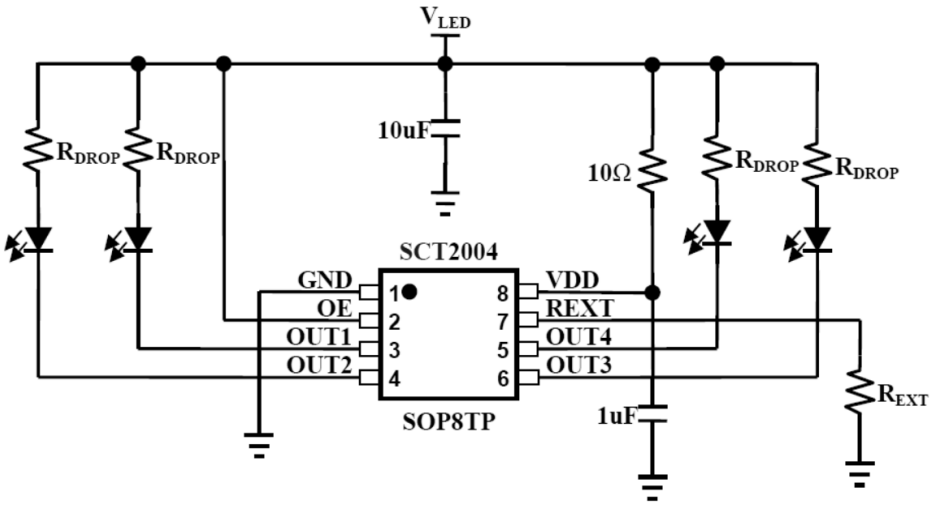
C

Maximum Ratings (T_A=25°C)

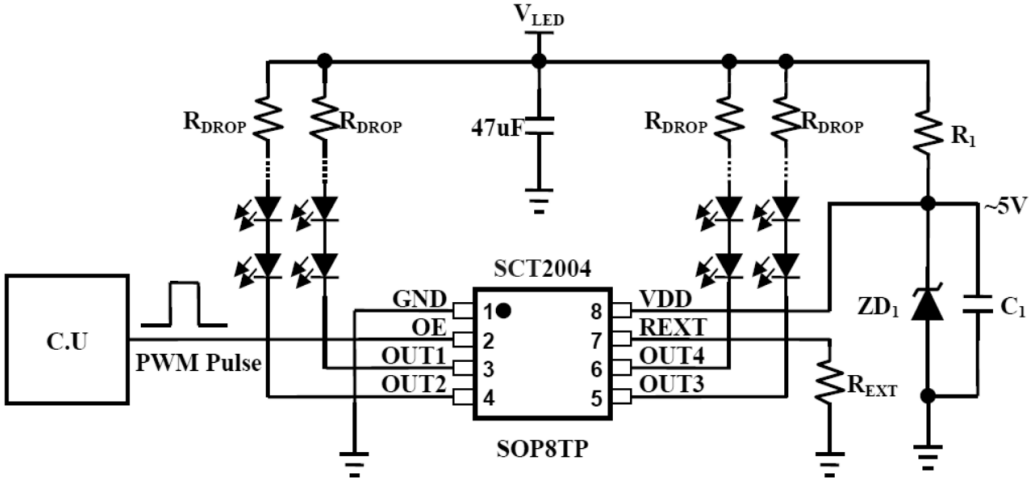
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	360	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	SOP8TP	P_D	2.08	W
Thermal Resistance	SOP8TP	$R_{TH(j-a)}$	60	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=5V	20	-	320	mA
Input Voltage	V_{IH}	-	2	-	V_{DD}	V
	V_{IL}	-	0	-	0.4	V
OE Pulse Width	t_W	V_{DD}=5V	80	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2004S

4-Bit Constant Current LED Driver

The SCT2004S is a four channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 200ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2004S. The full scale current value of each output is set by an external resistor connected to REXT pin.

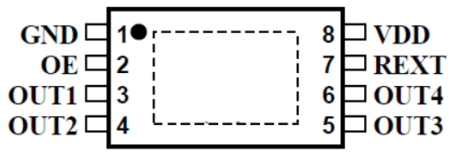
The SCT2004S guarantees to endure maximum DC 24V at each output port. Each output of SCT2004S can sink a constant current up to 180mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2004S easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2004S is equipped with over temperature protection. The four channels IC stops driving the output while junction temperature exceeds 160°C the high limit and the output will be reactivated while the junction temperature is below 110°C the low limit. In conclusion, the driver system is protected from damage of overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2004 SSOG	4 Bits	SOP8TP	C	✓	Page 54

Pin Configurations



C

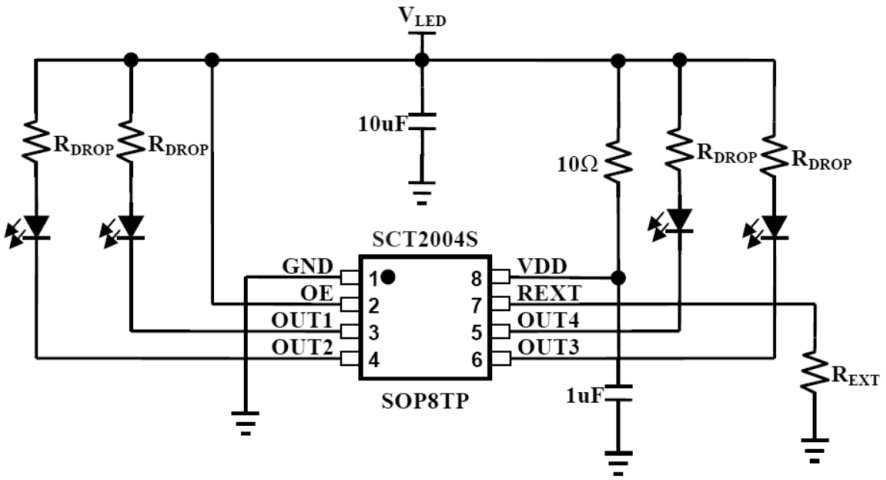
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	200	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	800	mA
Power Dissipation	SOP8TP	P_D	2.08	W
Thermal Resistance	SOP8TP	$R_{TH(j-a)}$	60	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

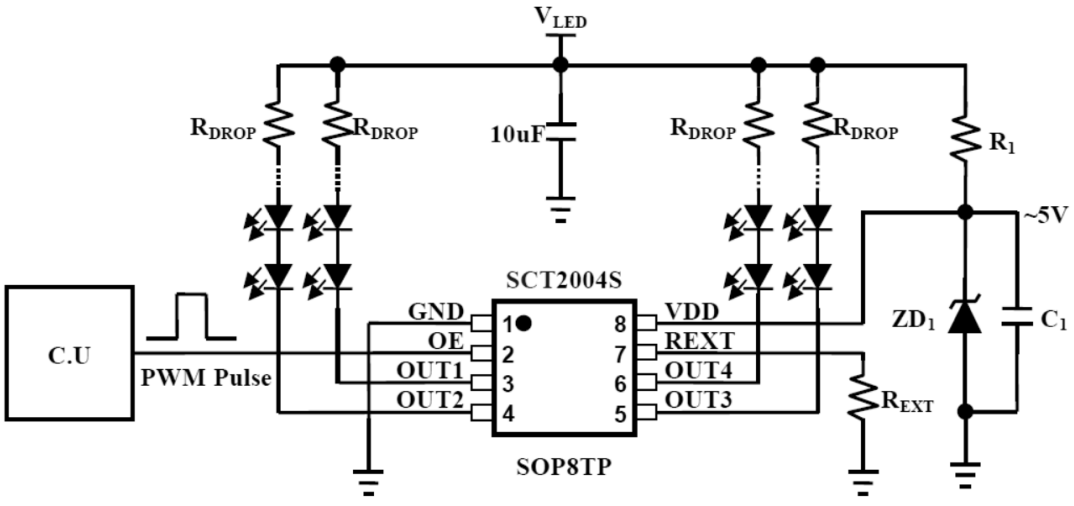
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3.0	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3/5V	20	-	120/180	mA
Input Voltage	V_{IH}	-	$0.7V_{DD}$	-	V_{DD}	V
	V_{IL}	-	0	-	$0.3V_{DD}$	V
OE Pulse Width	t_W	V_{DD}=3.3~5V	200	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2007

4-Bit Constant Current LED Driver

The SCT2007 is a 4-channel current-sink constant current driver incorporating patented PVVM circuit. In general, three channels for typical RGB LEDs cluster and one additional channel for another red LED (2R1G1B) to enrich colour saturation or lit up white LED (1R1G1B1VV) to increase display or backlight brightness. In applications, users can set the output currents OUT[0:3] from 5mA to 90mA by one resistor for concurrent or four resistors for individual current setting. The serial data are shifted into shift register by clock rising edge. Input data appear at the DO output clock cycles later to allow cascading of multiple SCT2007s.

For the wire/line cost sensitive application, the SCT2007 provides two signal wires only (clock and data) to transmit serial data for long-distance cascaded operation. It also embeds clock and data buffers to regenerate input signals at the same time improve transmission quality for long-distance transmission. The SCT2007 embeds PWM grey scale controller to provide 10-bit grey scale and 12-bit global brightness for each output. Each output has 10-bit grey scale (1024 grayscales), thus three outputs represent 30-bit colour. The minimum grey scale PVVM pulse width ~80ns provides faster response time and more exquisite colour presentation for RGB LED cluster application.

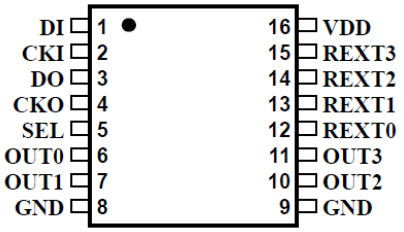
Since the high clock frequency can be reached up to 20MHz, the SCT2007 satisfies the system requirements of high volume data transmission to control the RGB LED for mix-colour display. The higher clock frequency provides higher data transfer rate and faster refresh rate when many driver le connect in cascade configuration. Furthermore, the SCT2007 also provides TTL interface (supply independent input threshold), thus it can recognize the output signals issued from the controller system which is feed with power supply input less than typical 5V.

The excellent current regulation capability allows SCT2007 easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant VF of LEDs and operating temperature. The SCT007 is equipped with over temperature protection. The four channels IC stops driving the output while sense its junction temperature exceeds the 160°C high limit and the output will be reactivated while the junction temperature is below the 110°C low limit. In conclusion, the driver system is protected from damage of overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2007 CSSG	4 Bits	SSOP16	U	✓	Page 59
SCT2007 TSSG	4 Bits	SSOP16	U	Contact us!	Page 59

Pin Configurations

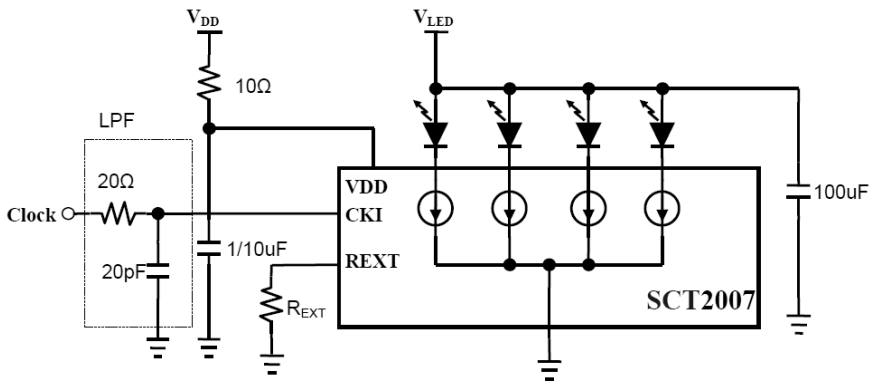


U

Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	90	mA/Channel
Output Voltage		V_{OUT}	-0.2 to 17	V
Total GND Terminals Current		I_{GND}	360	mA
Power Dissipation	SSOP16	P_D	1.08	W
Thermal Resistance	SSOP16	$R_{TH(j-a)}$	116	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	5.0	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=5V	5	-	90	mA
Input Voltage SCT2007C	V_{IH}	-	0.7V_{DD}	-	V_{DD}+0.1	V
	V_{IL}	-	-0.1	-	0.3V_{DD}	V
Clock Frequency	$f_{w(CKI)}$	-	-	-	-	nS
Clock Pulse Width	$t_{w(CKI)}$	-	20	-	-	nS
Setup Time	$t_{S(DI)}$	-	5	-	-	nS
Hold Time	$t_{H(DI)}$	-	10	-	-	nS

Decoupling Capacitor Circuit



SCT2008

8-Bit Constant Current LED Driver

The SCT2008 is an 8 channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 80ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2008. The full scale current value of each output is set by an external resistor connected to REXT pin.

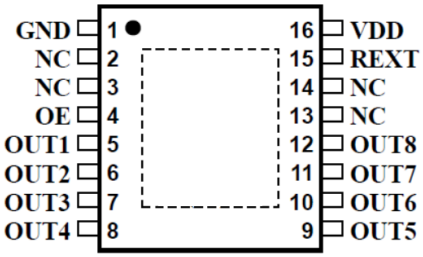
The SCT2008 guarantees to endure maximum DC 24V at each output port. Each output of SCT2008 can sink a constant current up to 160mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2008 easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2008 is equipped with negative temperature coefficient characteristics, thus the driver system and LEDs are protected from damage of thermal runaway or overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2008 CSSG	8 Bits	SSOP16TP	D	✓	Page 60

Pin Configurations



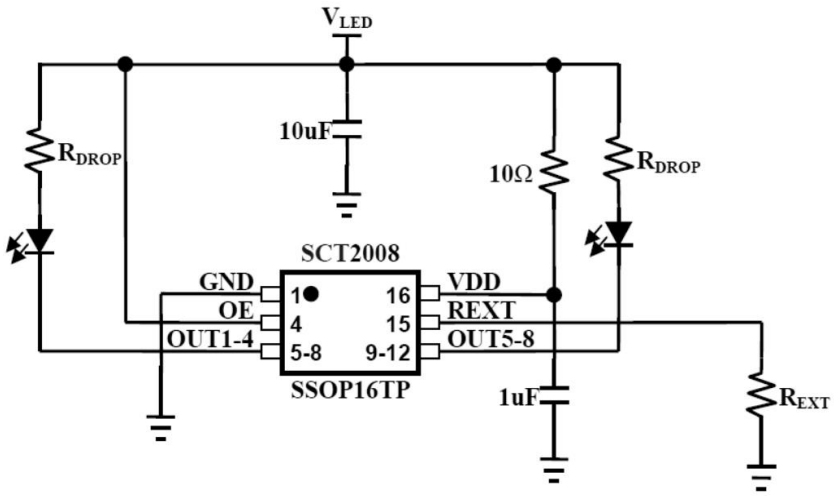
D

Maximum Ratings (T_A=25°C)

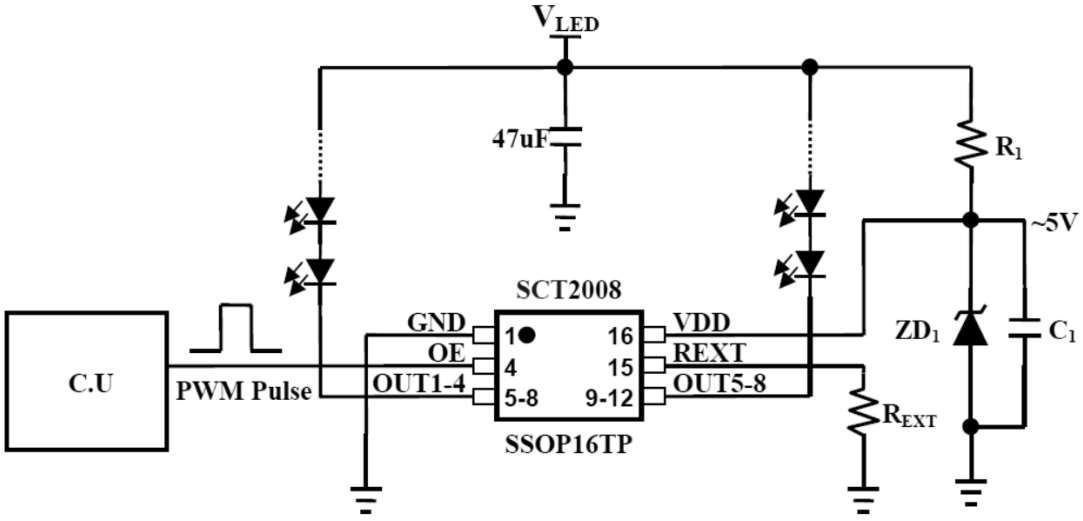
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	180	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	SSOP16TP	P_D	2.08	W
Thermal Resistance	SSOP16TP	$R_{TH(j-a)}$	60	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=5V	10	-	160	mA
Input Voltage	V_{IH}	-	2	-	V_{DD}	V
	V_{IL}	-	0	-	0.4	V
OE Pulse Width	t_W	V_{DD}=4.5~5.5V	80	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2008S

8-Bit Constant Current LED Driver

The SCT2008S is an 8 channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 200ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2008S. The full scale current value of each output is set by an external resistor connected to REXT pin.

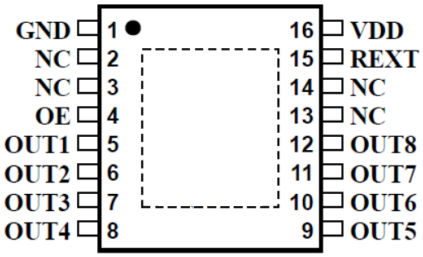
The SCT2008S guarantees to endure maximum DC 24V at each output port. Each output of SCT2008S can sink a constant current up to 90mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2008S easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2008S is equipped with over temperature protection. The 8 channels IC stops driving the output while junction temperature exceeds 160°C the high limit and the output will be reactivated while the junction temperature is below 110°C the low limit. In conclusion, the driver system is protected from damage of overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2008 SSSG	8 Bits	SSOP16TP	D	✓	Page 60

Pin Configurations



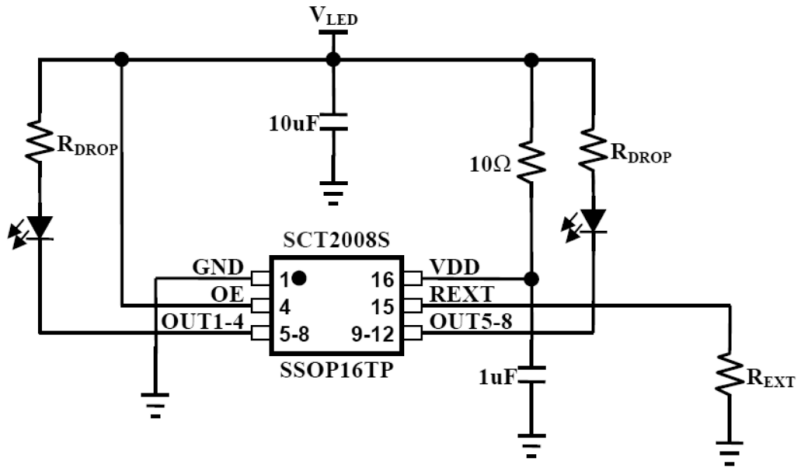
D

Maximum Ratings (T_A=25°C)

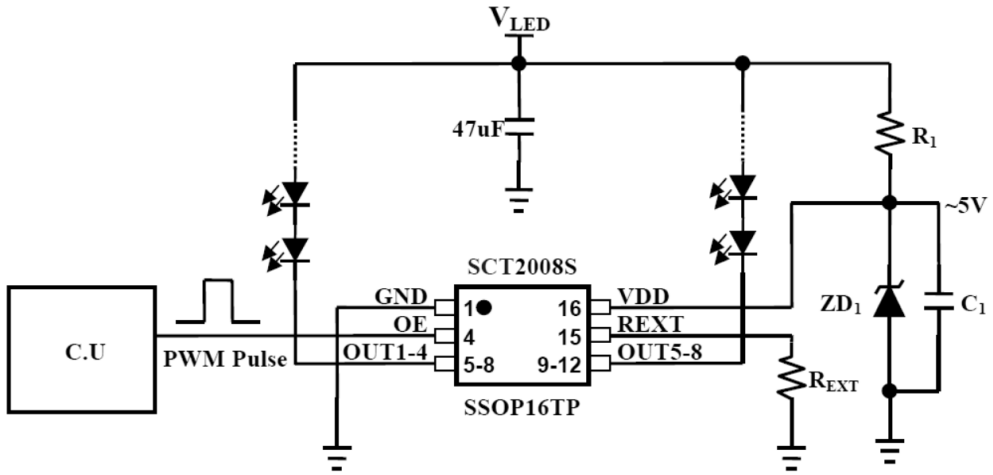
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	100	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	800	mA
Power Dissipation	SSOP16TP	P_D	2.08	W
Thermal Resistance	SSOP16TP	$R_{TH(j-a)}$	60	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3.0	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	-	10	-	60/90	mA
Input Voltage	V_{IH}	-	$0.7V_{DD}$	-	V_{DD}	V
	V_{IL}	-	0	-	$0.3V_{DD}$	V
OE Pulse Width	t_W	V_{DD}=3.3~5.0V	200	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2016

16-Bit Constant Current LED Driver

The SCT2016 is a 16 channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 200ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2016. The full scale current value of each output is set by an external resistor connected to REXT pin.

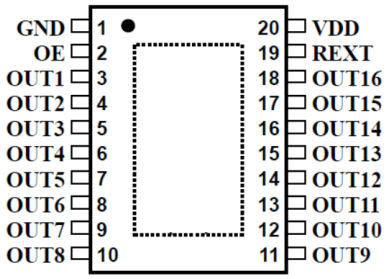
The SCT2016 guarantees to endure maximum DC 24V at each output port. Each output of SCT2016 can sink a constant current up to 80mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2016 easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2016 is equipped with over temperature protection. The 16 channels IC stops driving the output while junction temperature exceeds 160°C the high limit and the output will be reactivated while the junction temperature is below 110°C the low limit. In conclusion, the driver system is protected from damage of overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2016 CTSG	16 Bits	TSSOP20TP	E	✓	Page 66

Pin Configurations



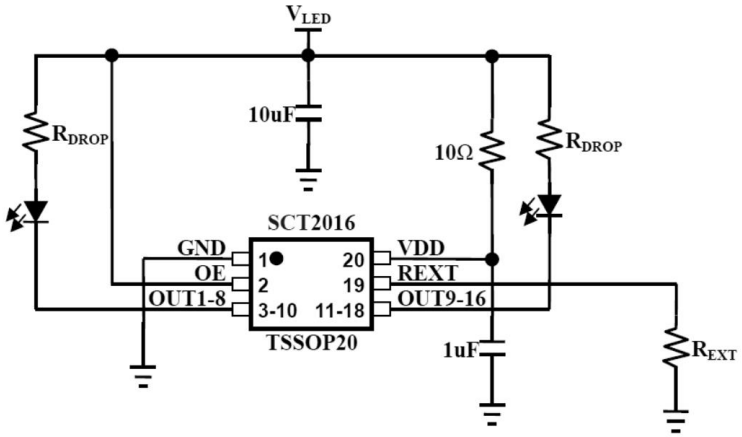
E

Maximum Ratings (T_A=25°C)

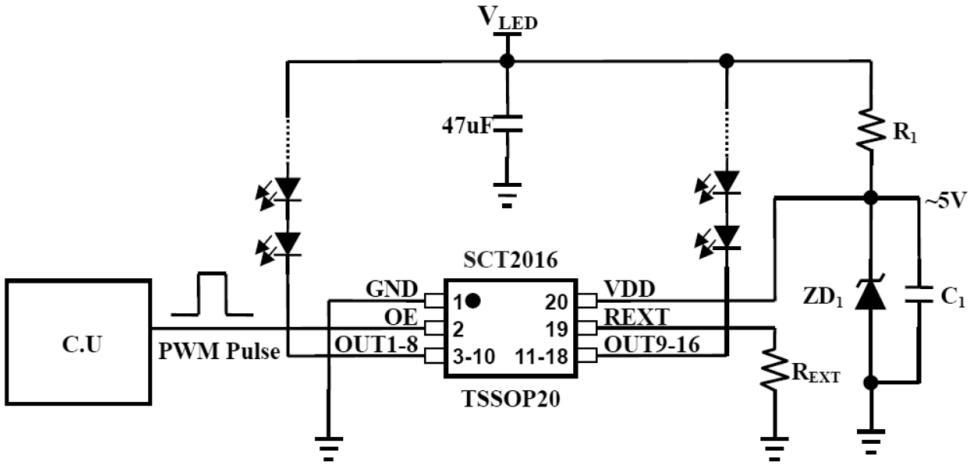
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	90	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	TSSOP20TP	P_D	1.39	W
Thermal Resistance	TSSOP20TP	$R_{TH(j-a)}$	90	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3.0	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	-	5	-	80	mA
Input Voltage	V_{IH}	-	$0.7V_{DD}$	-	V_{DD}	V
	V_{IL}	-	0	-	$0.3V_{DD}$	V
OE Pulse Width	t_W	V_{DD}=3.3~5.0V	200	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2016S

16-Bit Constant Current LED Driver

The SCT2016S is a 16 channels constant current driver best for LED lighting. It provides the PWM control effect by sinking constant current from LED clusters with minimum pulse width 200ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2016S. The full scale current value of each output is set by an external resistor connected to REXT pin.

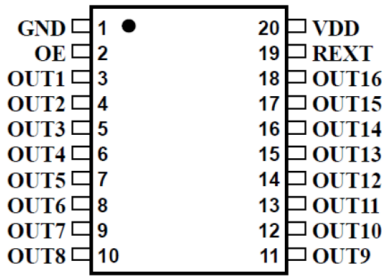
The SCT2016S guarantees to endure maximum DC 24V at each output port. Each output of SCT2016S can sink a constant current up to 45mA. Users can simply shunt the outputs to get higher current driver-ability, especially in the case of high power LED lighting.

The excellent current regulation capability allows SCT2016S easily drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2016S is equipped with over temperature protection. The 16 channels IC stops driving the output while junction temperature exceeds 160°C the high limit and the output will be reactivated while the junction temperature is below 110°C the low limit. In conclusion, the driver system is protected from damage of overheated. Furthermore, with wide operating range, the SCT2016S can be applied to lower input supply system

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2016 STSG	16 Bits	TSSOP20TP	E	✓	Page 66

Pin Configurations



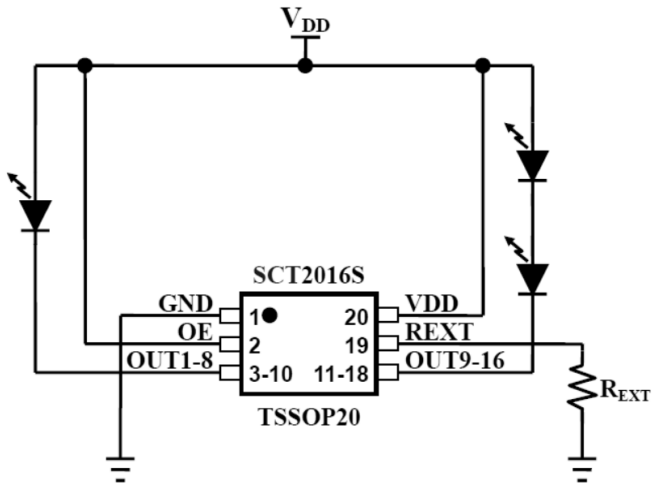
E

Maximum Ratings (T_A=25°C)

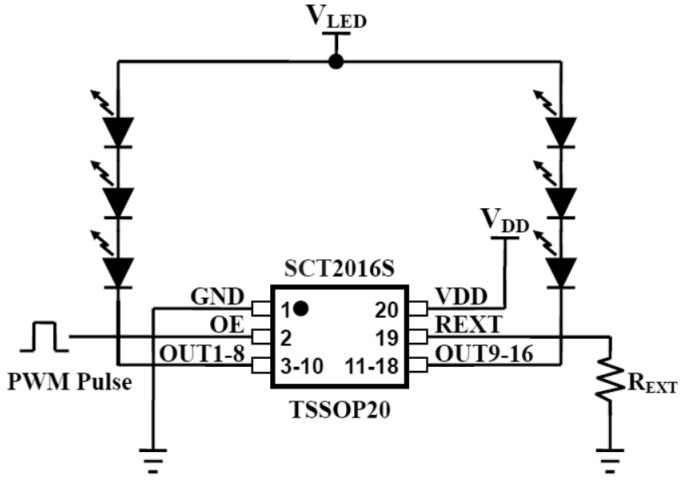
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7	V
Input Voltage		V_{IN}	-0.2 ~V_{DD}+0.2	V
Output Current		I_{OUT}	60	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	1000	mA
Power Dissipation	TSSOP20	P_D	1.39	W
Thermal Resistance	TSSOP20	$R_{TH(j-a)}$	90	°C/W
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3.0	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3V	5	-	30	mA
		V_{DD}=5.0V	5	-	45	
Input Voltage	V_{IH}	-	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	-	0	-	0.3V_{DD}	V
OE Pulse Width	t_W	-	200	-	-	nS

Typical Application Circuit



Lightning Application with Dimming Control



SCT2024

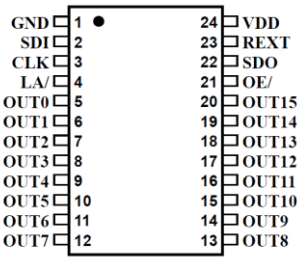
16-Bit Constant Current LED Driver

The SCT2024 serial-interfaced LED driver sinks 16 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 5mA up to 45mA. The SCT2024 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT2024 effective solution in driving LED display. The output enable function gates all 16 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT2024 will satisfy system which needs high volume data transmission to control the LED display. Furthermore, the SCT2024 provides excellent temperature regulation thus it can be applied to varied of operating temperature.

Part Number Table

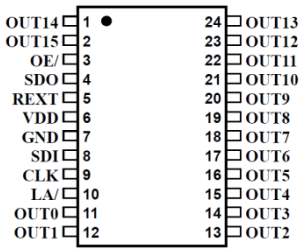
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2024 CSSG	16 Bits	SSOP24	F	✓	Page 61
SCT2024 CSTG	16 Bits	SSOP24-1	F	✓	Page 62
SCT2024 CSOG	16 Bits	SOP24	F	✓	Page 53
SCT2024 CSAG	16 Bits	SSOP24	G	Contact us!	Page 61
SCT2024 CQNG	16 Bits	TQFN24	H	✓	Page 47
SCT2024 AQNG	16 Bits	TQFN24	I	Contact us!	Page 46

Pin Configurations



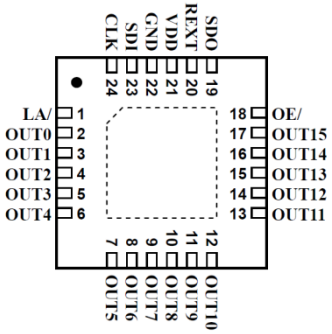
F

Pin Configurations



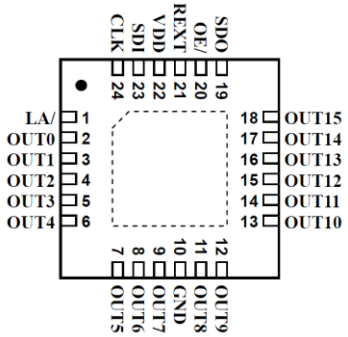
G

Pin Configurations



H

Pin Configurations

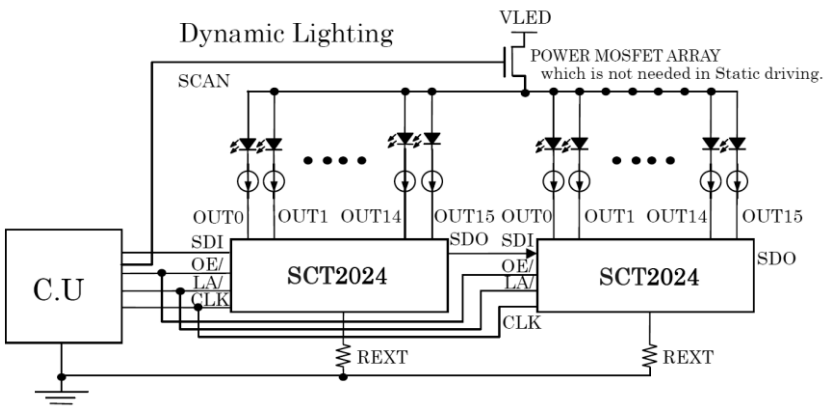


I

Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	60	mA/Channel
Output Voltage	SDO	V_{OUT}	-0.2 to V_{DD}+0.2	V
	OUT0~OUT15		-0.2 to 17	V
Total GND Terminals Current		I_{GND}	960	mA
Power Dissipation	SOP24	P_D	1.92	W
	SSOP24		1.42	
	SSOP24-1		1.74	
	TQFN		2.08	
Thermal Resistance	SOP24	$R_{TH(j-a)}$	65	°C/W
	SSOP24		88	
	SSOP24-1		72	
	TQFN		60	
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3V	5	-	30	mA
		V_{DD}=5.0V	5	-	45	
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=3.3V/5V	180	-	-	nS

Typical Application Circuit



SCT2026

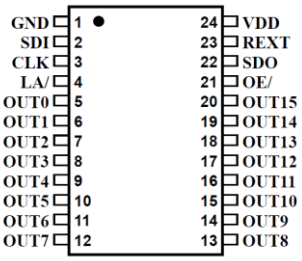
16-Bit Constant Current LED Driver

The SCT2026 serial-interfaced LED driver sinks 16 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 5mA up to 90mA. The SCT2026 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT2026 effective solution in driving LED display. The output enable function gates all 16 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT2026 will satisfy system which needs high volume data transmission to control the LED display.

Part Number Table

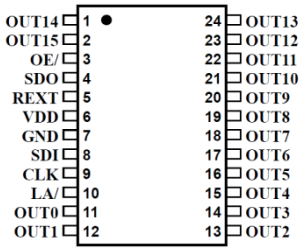
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2026 CSSG	16 Bits	SSOP24	F	✓	Page 61
SCT2026 CSTG	16 Bits	SSOP24-1	F	✓	Page 62
SCT2026 CSOG	16 Bits	SOP24	F	✓	Page 53
SCT2026 CSDG	16 Bits	SDIP24	F	Contact us!	Page 50
SCT2026 CSAG	16 Bits	SSOP24	G	Contact us!	Page 61

Pin Configurations



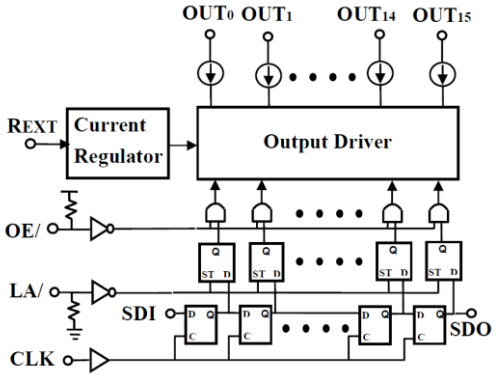
F

Pin Configurations



G

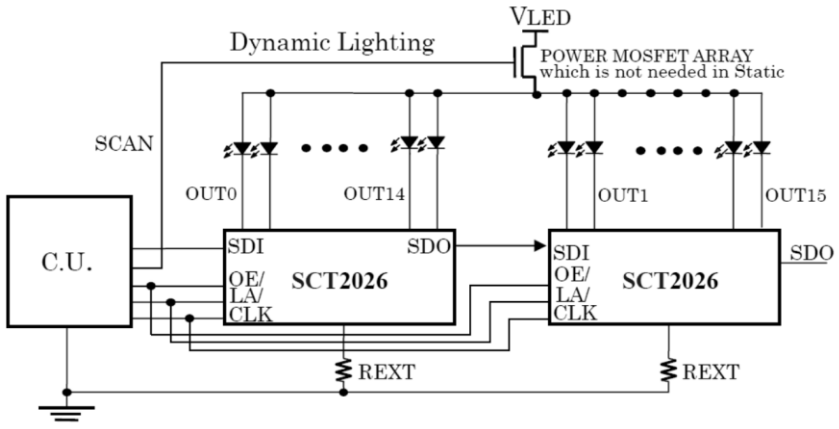
Block Diagram



Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	90	mA/Channel
Output Voltage		V_{OUT}	-0.2 to 17	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	SOP24	P_D	2.05	W
	SSOP24		1.49	
	SSOP24-1		1.84	
	SDIP24		2.08	
Thermal Resistance	SOP24	$R_{TH(j-a)}$	61	°C/W
	SSOP24		84	
	SSOP24-1		68	
	SDIP24		60	
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	1	-	4	
Output Current	I_{OUT}	V_{DD}=5.0V	5	-	60	mA
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=5V	120	-	-	nS

Typical Application Circuit



SCT2027 with Error Detection

16-Bit Constant Current LED Driver

The SCT2027 is a serial-interfaced 16-bit constant-current sinker with error detection designed for LED displays and LED lighting applications. In applications, an external resistor is used to adjust the full-scale output current from 5mA up to 90mA. The serial data are shifted into 16-bit shift register by clock signal. Input data appear at the SDO output 16 clock cycles later to allow cascading of multiple SCT2027s. The latch-enable input, LAI, loads the 16 bits data of shift register into a 16-bit latch to determine which LEDs are on and off. The output enable input, OE/ gates all 16 outputs on and off, and is fast enough to be used as PWM input for the LED intensity control.

The SCT2027 combines the SCT2024/6 with Modeless^{TM} technique to detect open-load and shorted-load errors while driving the LEDs without mode switching. With the pin-to-pin compatible design, all the LED display or lighting systems can be upgraded to perform the on-the-fly error-detection functions simply by replacing all the SCT2024/6s with SCT2027s directly. Also, by the Modeless^{TM} technique, the software and hardware works well without reworks between systems of the SCT2024/6 and SCT2027.

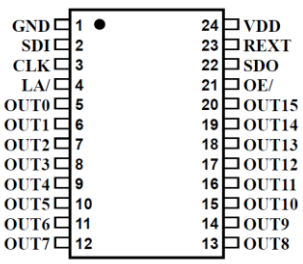
During operations, the SCT2027 takes only 20ons to generate error status codes after the rising edge of LA/. The error status codes saved in the shift register can be shifted out via SDO bit-by-bit along with CLK, at the same time the new serial data can be shifted into SCT2027 via SDI. By comparing the display data with error status codes, the system control unit can read the error status to determine whether or not the LEDs are properly lit. If the input display signals are inconsistent with the corresponding output status code, the corresponding LEDs are determined to have been stuck open or short.

Since the high clock frequency can reach up to 25MHz, the SCT2027 satisfies the system requirements of high volume data transmission to control the LED display. The SCT2027 also guarantees each output endures up to 7V voltage stress, thus each output can drive multiple LEDs. The Modeless^{TM} SCT2027 combines the error detection mechanism with display signals; hence the control unit does not need to switch between different modes, and therefore both the hardware costs and the control complexity can be reduced. In addition, the LED error status codes can be read in real time, and hence the fault status of the faulty LEDs can be discovered sooner.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2027 CSSG	16 Bits	SSOP24	F	✓	Page 61
SCT2027 CSTG	16 Bits	SSOP24-1	F	✓	Page 62
SCT2027 CSOG	16 Bits	SOP24	F	✓	Page 53

Pin Configurations



F

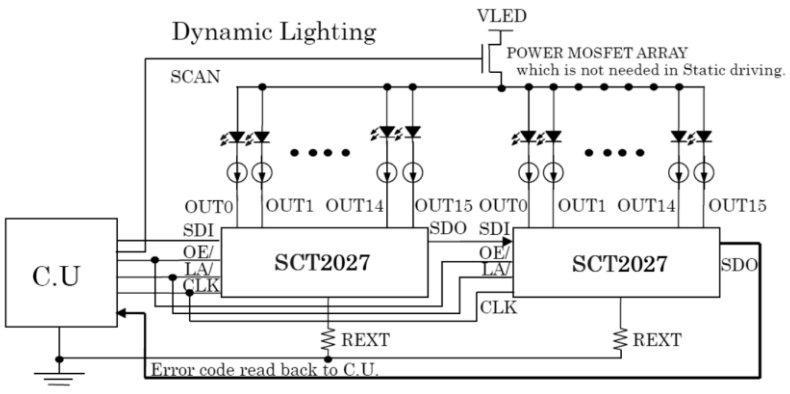
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	90	mA/Channel
Output Voltage	SDO	V_{OUT}	-0.2 to V_{DD}+0.2	V
	OUT0~OUT15		-0.2 to 7	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	SOP24	P_D	1.92	W
	SSOP24		1.42	
	SSOP24-1		1.74	
Thermal Resistance	SOP24	$R_{TH(j-a)}$	65	°C/W
	SSOP24		88	
	SSOP24-1		72	
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3.0	-	5.5	V
Output Voltage -error code neglected	V_{OUT}	Output OFF	-	-	7	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3V	5	-	40	mA
		V_{DD}=5.0V	5	-	60	
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=3.3V/5V	120	-	-	nS
LA/ Pulse Width	$t_{W(L),ED}$	Error detection	200	-	-	nS

Typical Application Circuit



SCT2167

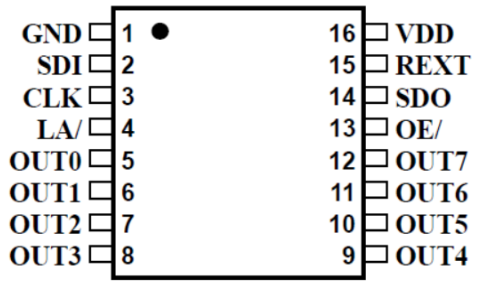
8-Bit Constant Current LED Driver

The SCT2167 serial-interfaced LED driver sinks 8 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 5mA up to 45mA. The SCT2167 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT2167 effective solution in driving LED display. The output enable function gates all 8 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT2167 will satisfy system which needs high volume data transmission to control the LED display.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2167 CSSG	8 Bits	SSOP16	J	✓	Page 59
SCT2167 CSOG	8 Bits	SOP16	J	✓	Page 51

Pin Configurations



J

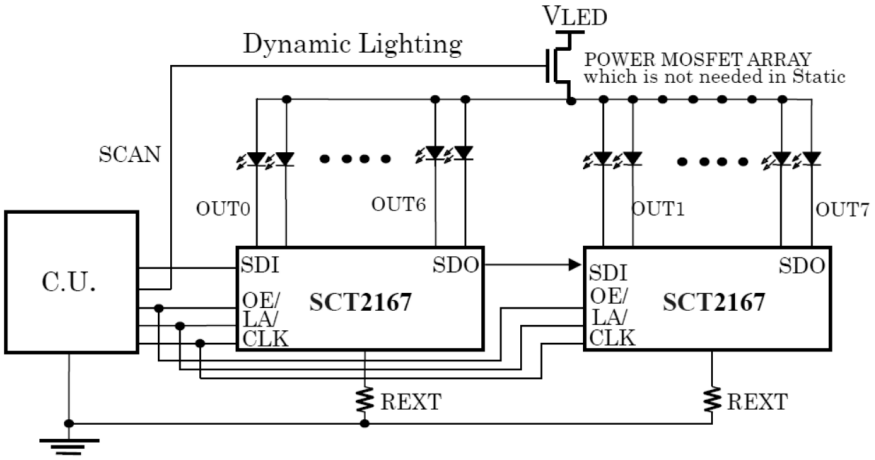
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	60	mA/Channel
Output Voltage		V_{OUT}	-0.2 to 17	V
Total GND Terminals Current		I_{GND}	480	mA
Power Dissipation	SSOP16	P_D	1.07	W
	SOP16		1.47	
Thermal Resistance	SSOP16	$R_{TH(j-a)}$	117	°C/W
	SOP16		85	
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

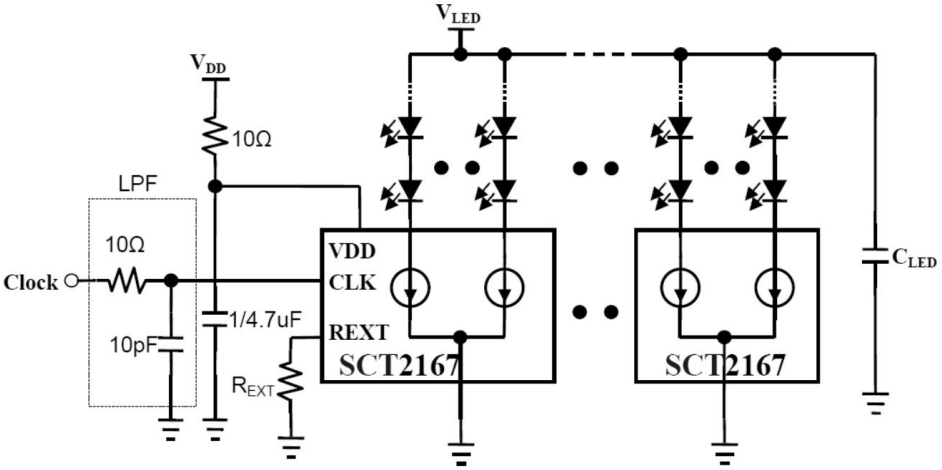
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3V	5	-	30	mA
		V_{DD}=5.0V	5	-	45	
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=3.3V/5V	180	-	-	nS

Typical Application Circuit



Decoupling Capacitor Circuit



SCT2168

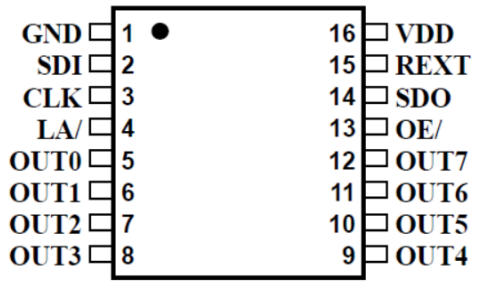
8-Bit Constant Current LED Driver

The SCT2168 serial-interfaced LED driver sinks 8 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 5mA up to 120mA. The SCT2168 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT2168 effective solution in driving LED display. The output enable function gates all 8 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT2168 will satisfy system which needs high volume data transmission to control the LED display.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2168 CSSG	8 Bits	SSOP16	J	✓	Page 59
SCT2168 CSOG	8 Bits	SOP16	J	✓	Page 51
SCT2168 CSWG	8 Bits	SOP16W	J	Contact us!	Page 52

Pin Configurations



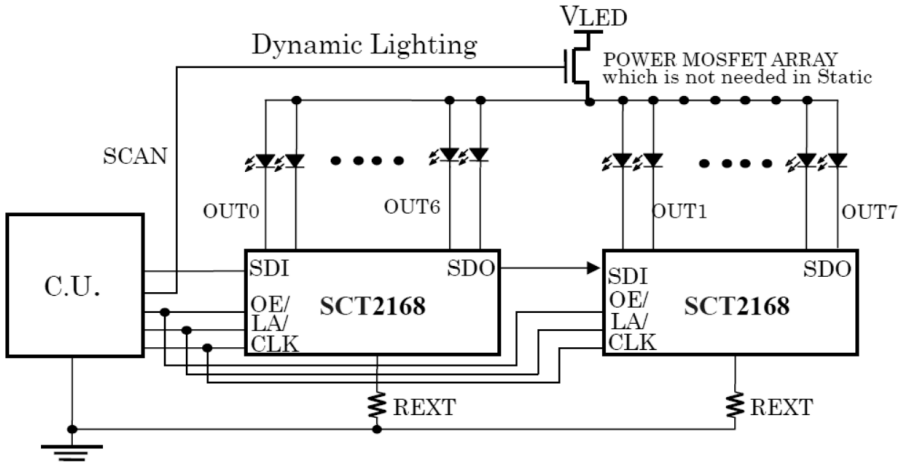
J

Maximum Ratings (T_A=25°C)

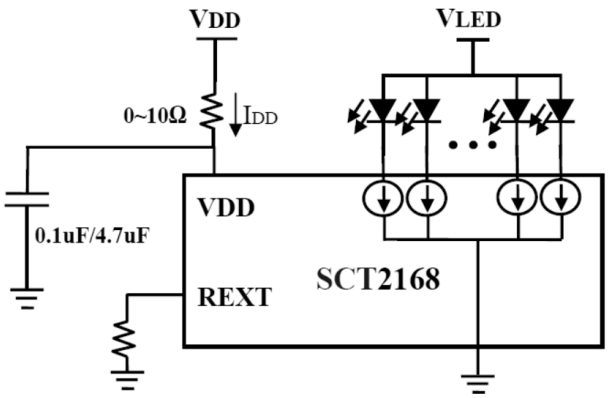
Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	120	mA/Channel
Output Voltage		V_{OUT}	-0.2 to 17	V
Total GND Terminals Current		I_{GND}	960	mA
Power Dissipation	SSOP16	P_D	1.47	W
	SOP16		1.79	
	SOP16W		1.07	
Thermal Resistance	SSOP16	$R_{TH(j-a)}$	85	°C/W
	SOP16		70	
	SOP16W		117	
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	1	-	4	
Output Current	I_{OUT}	V_{DD}=3.3V	5	-	60	mA
		V_{DD}=5.0V	5	-	90	
Input Voltage	V_{IH}	Input Signals	$0.7V_{DD}$	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	$0.3V_{DD}$	
OE/ Pulse Width	t_W	V_{DD}=3.3V/5V	120	-	-	nS

Typical Application Circuit



Decoupling Capacitor Circuit



SCT2180

8-Bit Constant Current LED Driver

The SCT2180 is designed to be a simple but effective solution for display and lighting LED. It drives up to 8 LED clusters with regulate constant current for uniform intensity.

In applications, an external resistor is used to set the full-scale LED current from 5mA to 100mA. The SCT2180 guarantees each output can endure maximum 7V DC voltage stress. The on/off state of outputs are controlled by each input data bit (IN0~IN7), signals of latch (LA/) and output enable (OE/). Combing schemes of parallel data inputs and the finest output current pulse, the SCT2180 can easily realize high quality LED displays which are used to display true colour motion pictures.

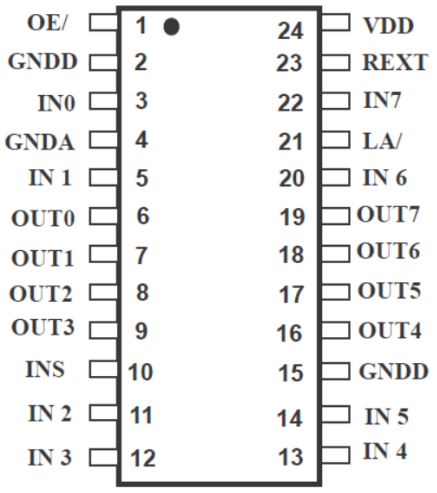
Excellent output current matching:

Current Skew		Conditions
Bit Skew	Chip Skew	
<±3%	<±6%	OE/ pulse width > 100nS 30mA < I_{OUT} < 100mA
<±4%	<±8%	OE/ pulse width > 80nS 5mA < I_{OUT} < 30mA

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2180 ASOG	8 Bits	SOP24	K	✓	Page 53
SCT2180 ASSG	8 Bits	SSOP24	K	Contact us!	Page 61

Pin Configurations

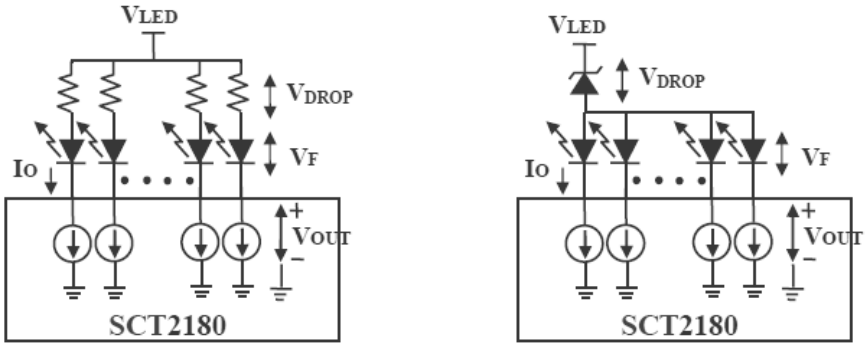


K

Maximum Ratings (T_A=25°C)			
Characteristic	**Symbol**	**Rating**	**Unit**
Supply Voltage	V_{DD}	4.0~7.0	V
Input Voltage	V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current	I_{OUT}	120	mA/Channel
Output Voltage	V_{OUT}	0.8 to 7.0	V
Data Switching Rate	F_{IN}	8	MHz
Total GND Terminals Current	I_{GND}	1000	mA
Operating Temperature	T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	5.0	5.5	V
Output Voltage	V_{OUT}	OUT0~OUT15	1.0	-	V_{DD}	V
Output Current	I_{OUT}	-	5	-	100	mA
Input Voltage	V_{IH}	INS=L	$0.8V_{DD}$	-	V_{DD}	V
	V_{IL}	INS=L	0	-	$0.2V_{DD}$	
Input Voltage	V_{IH}	INS=H	2.0	-	V_{DD}	V
	V_{IL}	INS=H	0	-	0.4	
OE/ Pulse Width	t_W	V_{DD}=4.5~5.5V	80	-	-	ns
Data Rate	F_{IN}	-	-	-	5	MHz

Load Supply Voltage Diagram



SCT2210

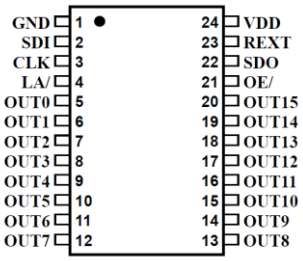
16-Bit Constant Current LED Driver

The SCT2210 serial-interfaced LED driver sinks 16 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 5mA up to 90mA. The SCT2210 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT2210 effective solution in driving LED display. The output enable function gates all 16 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT2210 will satisfy system which needs high volume data transmission to control the LED display.

Part Number Table

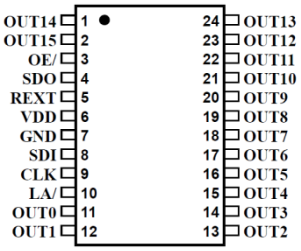
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2210 CSSG	16 Bits	SSOP24	F	✓	Page 61
SCT2210 CSTG	16 Bits	SSOP24-1	F	✓	Page 62
SCT2210 CSOG	16 Bits	SOP24	F	✓	Page 53
SCT2210 CSDG	16 Bits	SDIP24	F	Contact us!	Page 50
SCT2210 CSAG	16 Bits	SSOP24	G	Contact us!	Page 61

Pin Configurations



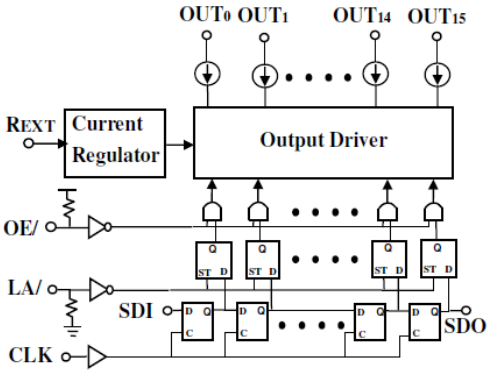
F

Pin Configurations



G

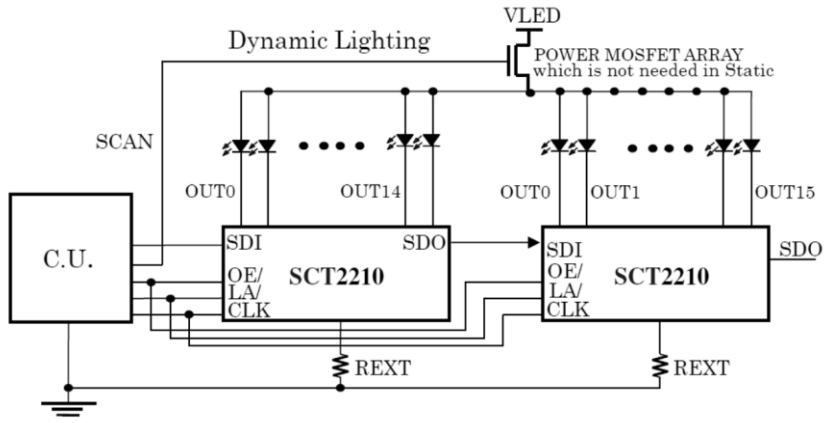
Block Diagram



Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	120	mA/Channel
Output Voltage		V_{OUT}	-0.2 to 17.0	V
Total GND Terminals Current		I_{GND}	1200	mA
Power Dissipation	SOP24	P_D	2.05	W
	SSOP24		1.49	
	SSOP24-1		1.84	
	SDIP24		2.08	
Thermal Resistance	SOP24	$R_{TH(j-a)}$	61	°C/W
	SSOP24		84	
	SSOP24-1		68	
	SDIP24		60	
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	1	-	4	
Output Current	I_{OUT}	V_{DD}=5.0V	5	-	90	mA
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=3.3V/5V	50	-	-	nS

Typical Application Circuit



SCT2280

16-Bit Constant Current LED Driver

The SCT2280 is designed to be a simple but effective solution for lighting LED. It drives up to sixteen LED clusters with regulated constant current for uniform intensity.

In applications, an external resistor is used to set the full-scale LED current from 5mA to 60mA. The SCT2280 guarantees each output can endure maximum 7V DC voltage stress. The on/off state of outputs are controlled directly by signals of input data bit (D_{IN0}~D_{IN15}), signals of latch (LA/), and output enable (OE/). Combing schemes of parallel data inputs and the finest output current pulse, the SCT2280 can easily realize high quality LED displays which are used to display true colour motion pictures.

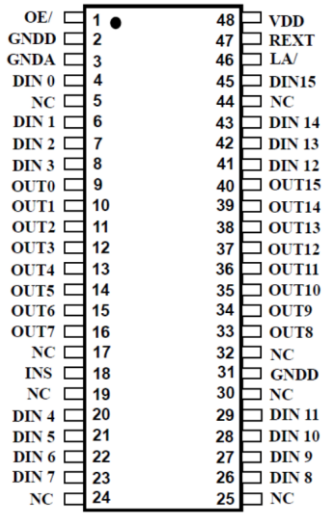
Excellent output current matching:

Current Skew		Conditions
Bit Skew	Chip Skew	
<±3%	<±6%	Output pulse width > 80nS 10mA < I_{OUT} < 60mA
<±4%	<±8%	Output pulse width > 80nS 5mA < I_{OUT} < 10mA

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2280 ASSG	16 Bits	SSOP48	L	✓	Page 63

Pin Configurations

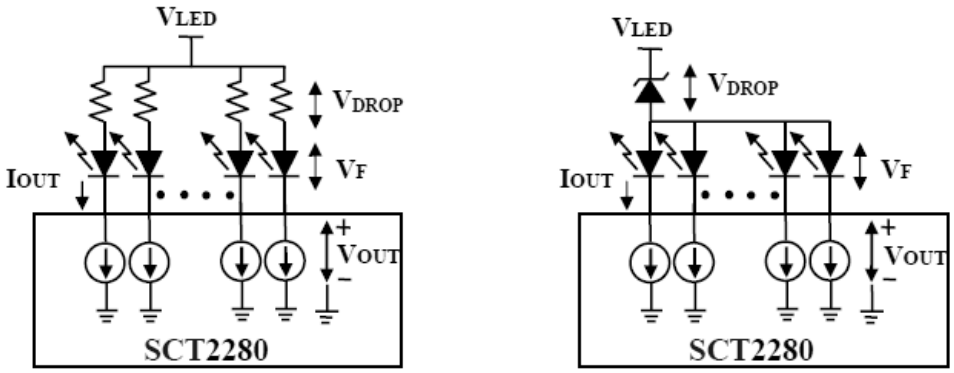


L

Maximum Ratings (T_A=25°C)			
Characteristic	**Symbol**	**Rating**	**Unit**
Supply Voltage	V_{DD}	4.0~7.0	V
Input Voltage	V_{IN}	-0.4 to V_{DD}+0.4	V
Output Current	I_{OUT}	80	mA/Channel
Output Voltage	V_{OUT}	0.8~7.0	V
Data Switching Rate	F_{DIN}	8	MHz
Total GND Terminals Current	I_{GND}	1400	mA
Operating Temperature	T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	4.5	5.0	5.5	V
Output Voltage	V_{OUT}	OUT0~OUT15	1.0	-	V_{DD}	V
Output Current	I_{OUT}	V_{DD}=5.0V	5	-	60	mA
Input Voltage	V_{IH}	INS='L'	$0.8V_{DD}$	-	V_{DD}	V
	V_{IL}	INS='L'	0	-	$0.2V_{DD}$	
Input Voltage	V_{IH}	INS='H'	2.0	-	V_{DD}	V
	V_{IL}	INS='H'	0	-	0.4	
OE/ Pulse Width	t_{W2}	-	80	-	-	nS

Load Supply Voltage Diagram



SCT2301

1-Bit Constant Current LED Driver

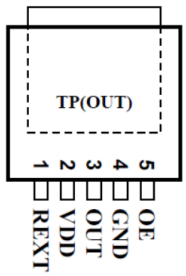
The SCT2301 is a single channel constant current driver best for the high power LED lighting and lamp application. It provides the PWM control effect by sinking constant current from high power LED clusters with minimum pulse width 200ns. The PWM control is performed by connecting the PWM signal from system control unit to OE pin of the SCT2301. The full scale current value of output is set by an external resistor connected to REXT pin. The SCT2301 guarantees to endure maximum DC 24V at output port. The output of SCT2301 can sink a constant current up to 720mA.

The excellent current regulation capability allows SCT2301 easily to drive each output current to a constant stable output nearly without affected by power supply of LED, loading due to variant V_F of LEDs and operating temperature. The SCT2301 is equipped with over temperature protection. The single channel IC stops driving the output while sensing its junction temperature exceeding 160°C the higher limit and the output will be reactivated while the junction temperature is below 110°C. The exposed pad on IC provides significant power dissipation. This provides lower thermal impedance from the IC to the ambient air, thus IC can be operated more safely. In conclusion, the driver system is protected from damage of overheated.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2301 AT4G	1 Bit	TO252-5L	M	✓	Page 65

Pin Configurations



M

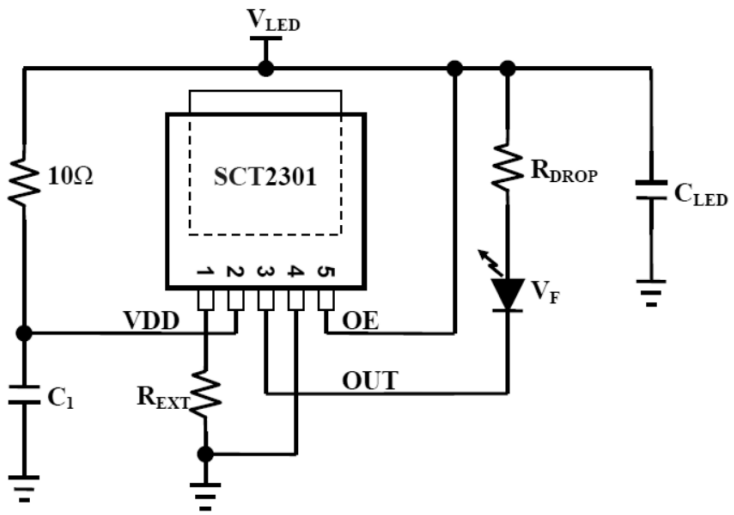
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	750	mA/Channel
Output Voltage		V_{OUT}	24	V
Total GND Terminals Current		I_{GND}	800	mA
Power Dissipation	TO252	P_D	2.5	W
Thermal Resistance	TO252	$R_{TH(j-a)}$	50	°C/W
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

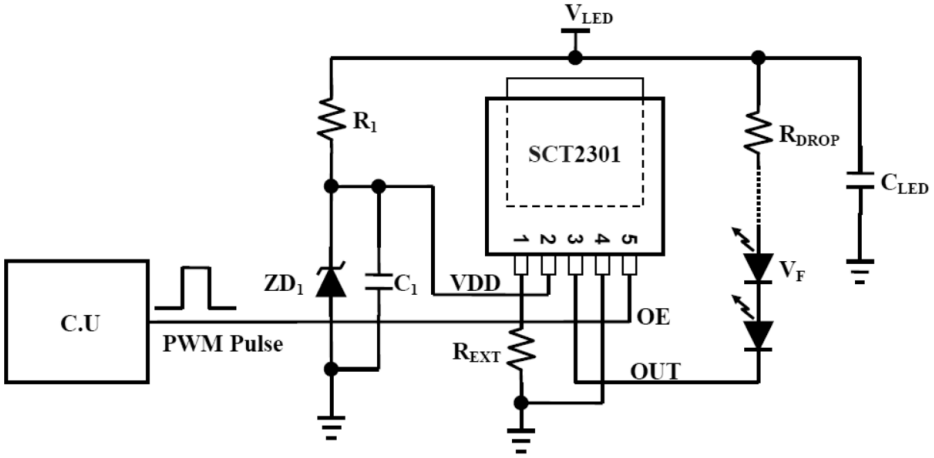
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		I_{OUT}=360/720mA, V_{DD}=5V	-	0.8/1.2	2/4	
Output Current	I_{OUT}	V_{DD}=3.3V	80	-	480	mA
		V_{DD}=5V	80	-	720	
Input Voltage	V_{IH}	-	$0.7V_{DD}$	-	V_{DD}	V
	V_{IL}	-	0	-	$0.3V_{DD}$	
OE Pulse Width	t_W	V_{DD}=3.3V to 5V	200	-	-	nS

Typical Application Circuit



Lighting Application with Dimming Control



SCT2514

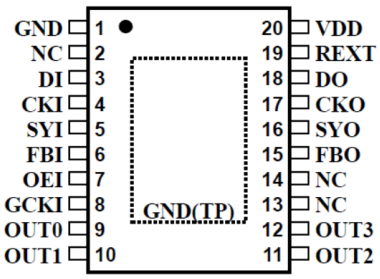
8-Bit Constant Current LED Driver

The SCT2514 is a patented SPI+™ interface design for simplicity of backlight local dimming control. It's an 8-bit constant current sink driver incorporating shift registers and data latches for SPI interface. When the dimming data bytes are written into the SCT2514 in sequence, the patented design initiates a new PWM dimming signal for the output as soon as its luminance data is updated. The maximum current value of all 4 outputs is determined by an external resistor and is adjustable with the OEI signal. Each output also has individual 8-bit PWM dimming control. The SCT2514 provides patented logical feedback to automatically regulate the LED supply voltage and hence minimizes the system power consumption.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2514 CTSG	8 Bits	TSSOP20TP	N	✓	Page 66

Pin Configurations



N

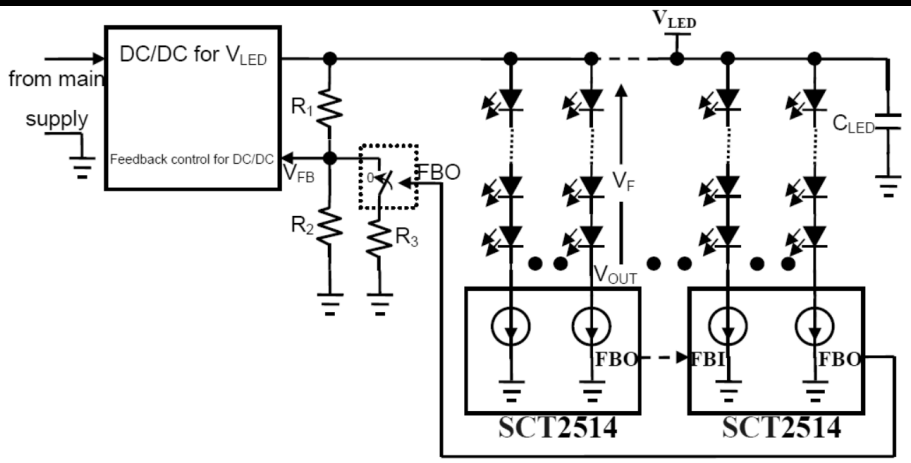
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	300	mA/Channel
Output Voltage	Outputs	V_{OUT}	-0.2 to V_{DD}+0.2	V
	OUT0~OUT3		-0.2~24	V
Total GND Terminals Current		I_{GND}	1000	mA
Power Dissipation	TSSOP20	P_D	1.39	W
Thermal Resistance	TSSOP20	$R_{TH(j-a)}$	90	°C/W
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

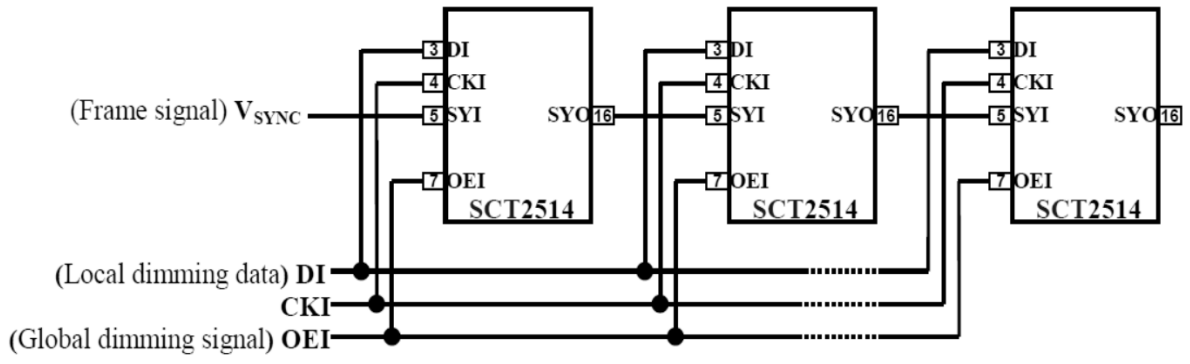
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	0.8	-	4	
Output Current	I_{OUT}	V_{DD}=3.3/5V, V_{OUT}=0.8V	60	-	180/240	mA
		V_{DD}=3.3/5V, V_{OUT}=1V	60	-	180/280	
Input Voltage	V_{IH}	FBI Input Signal	0.7V_{DD}	-	V_{DD}	V
	V_{IL}		0	-	0.3V_{DD}	
	V_{IH}	DI/CKI/SYI/OEI/GCKI Input Signals	2.3	-	V_{DD}	V
	V_{IL}		0	-	0.7	
GCKI Pulse Width	$t_{W(GCKI)}$	V_{DD}=3.3V/5V	2	-	-	µS
OEI Pulse Width	$t_{W(OEI)}$	V_{DD}=3.3V/5V GCKI NC	20	-	-	µS
		V_{DD}=3.3V/5V with GCKI	$t_{W(GCKI)}$	-	-	µS

Typical Application Circuit



Dimming with Internal PWM Clock



SCT2518

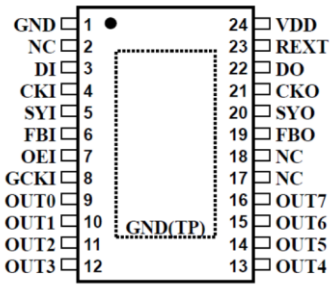
8-Bit Constant Current LED Driver

The SCT2518 is a patented SPI+™ interface design for simplicity of backlight local dimming control. It's an 8-bit constant current sink driver incorporating shift registers and data latches for SPI interface. When the dimming data bytes are written into the SCT2518 in sequence, the patented design initiates a new PWM dimming signal for the output as soon as its luminance data is updated. The maximum current value of all 8 outputs is determined by an external resistor and is adjustable with the OEI signal. Each output also has individual 8-bit PWM dimming control. The SCT2518 provides patented logical feedback to automatically regulate the LED supply voltage and hence minimizes the system power consumption.

Part Number Table

Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2518 CTSG	8 Bits	TSSOP24TP	O	✓	Page 67

Pin Configurations



O

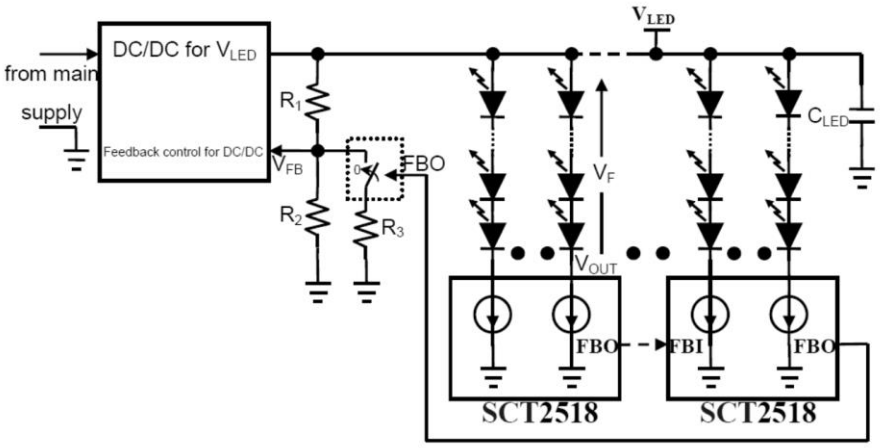
Maximum Ratings (T_A=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	150	mA/Channel
Output Voltage	Outputs	V_{OUT}	-0.2 to V_{DD}+0.2	V
	OUT0~OUT7		-0.2~24	V
Total GND Terminals Current		I_{GND}	1000	mA
Power Dissipation	TSSOP24	P_D	1.56	W
Thermal Resistance	TSSOP24	$R_{TH(j-a)}$	80	°C/W
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

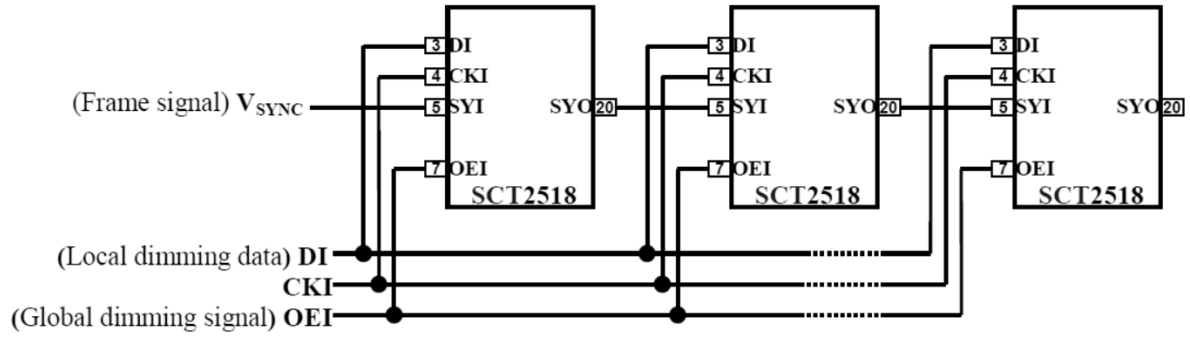
Recommended Operating Condition

Characteristic	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	24	V
		Output ON	1	-	4	
Output Current	I_{OUT}	V_{DD}=3.3/5V, V_{OUT}=0.8V	20	-	90/120	mA
		V_{DD}=3.3/5V, V_{OUT}=1V	20	-	90/140	
Input Voltage	V_{IH}	FBI Input Signal	0.7V_{DD}	-	V_{DD}	V
	V_{IL}		0	-	0.3V_{DD}	
	V_{IH}	DI/CKI/SYI/OEI/GCKI Input Signals	2.3	-	V_{DD}	V
	V_{IL}		0	-	0.7	
GCKI Pulse Width	$t_{W(GCKI)}$	V_{DD}=3.3V/5V	2	-	-	µS
OEI Pulse Width	$t_{W(OEI)}$	V_{DD}=3.3V/5V GCKI NC	20	-	-	µS
		V_{DD}=3.3V/5V with GCKI	$t_{W(GCKI)}$	-	-	µS

Typical Application Circuit



Dimming with Internal PWM Clock



SCT2932

1-Bit Constant Current LED Driver

SCT2932 is a high efficiency, constant current, continuous mode inductive step-down converter, designed for driving constant current to high power (single or multiple) LED with only 4 external components. SCT2932 operates from input supply between 5V and 33V and provides an externally adjustable output current of up to 1.5A.

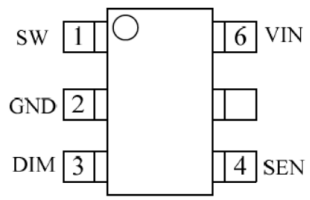
The SCT2932 is specifically designed with PFM control to enhance the efficiency up to 97%. The output current can be modified by an external resister, and can be adjusted by applying an external control signal to the DIM pin, the DIM pin will accept a PWM waveform.

Additionally, to ensure the system reliability, SCT2932 is built-in with over temperature protection, and LED open-circuit short-circuit protection to protect system from being damaged.

Part Number Table

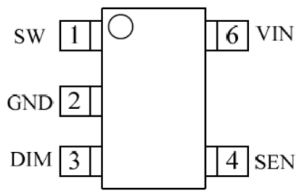
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT2932 B	1 Bit	SOT23-6	P	✓	Page 57
SCT2932 C	1 Bit	TO252-5	R	✓	Page 64
SCT2932 D	1 Bit	MSOP8TP	S	Contact us!	Page 49
SCT2932 E	1 Bit	SOP8TP	S	✓	Page 54
SCT2932 F	1 Bit	SOT89-5	T	✓	Page 58
SCT2932 J	1 Bit	SOT23-5	Q	✓	Page 55

Pin Configurations



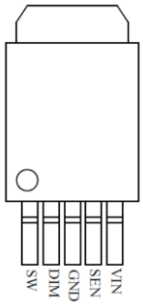
P

Pin Configurations



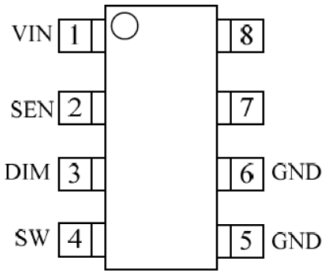
Q

Pin Configurations



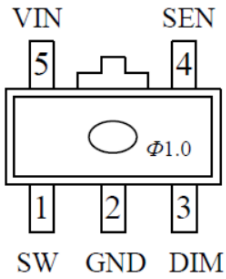
R

Pin Configurations



S

Pin Configurations

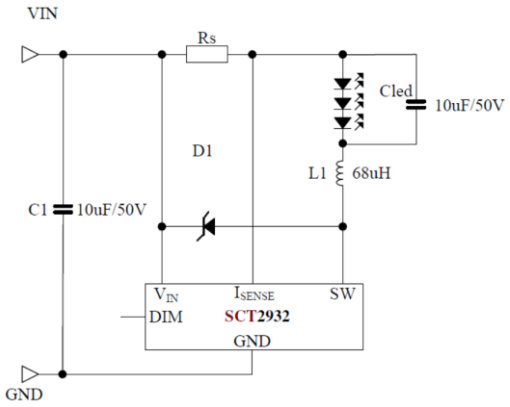


T

Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{IN}	0~33	V
Output Current		I_{OUT}	1.875	A
Sustaining Voltage at SW Pin		V_{SW}	-0.5~33	V
Power Dissipation	SOP8TP	P_D	1.4	W
	MSOP8TP		1.45	
	TO252		2.8	
	SOT23-6		1.2	
	SOT23-5		1.2	
	SOT89-5		1.45	
Thermal Resistance	SOP8TP	$R_{TH(j-a)}$	89.3	°C/W
	MSOP8TP		86.2	
	TO252		44.6	
	SOT23-6		104.2	
	SOT23-5		104.2	
	SOT89-5		86.2	
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Operating Voltage	V_{IN}	-	5	-	33	V
Operating Current	I_{IN}	V_{IN}=5~33V	-	1	2	mA
Output Current	I_{OUT}	-	-	-	1.5	A
Input Voltage	V_{IH}	-	3.5	-	5	V
	V_{IL}	-	0	-	0.5	
Operating Frequency	Freq	-	40	-	1000	KHz

Typical Application Circuit



SCT5020

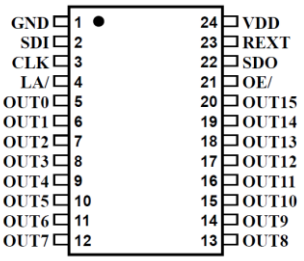
16-Bit Constant Current LED Driver

The SCT5020 serial-interfaced LED driver sinks 16 LED clusters with constant current to keep the uniform intensity of LED displays. In applications, an external resistor is used to set the full-scale constant output current from 1mA up to 45mA. The SCT5020 guarantees each output can endure maximum 17V DC voltage stress. The built-in shift registers and data latches making the SCT5020 effective solution in driving LED display. The output enable function gates all 16 outputs on and off, and is fast enough to be used as PWM input for LED intensity control. Since the serial data input rate can be reached up to 25MHz, the SCT5020 will satisfy system which needs high volume data transmission to control the LED display. Furthermore, the SCT5020 provides excellent temperature regulation thus it can be applied to varied of operating temperature. The SCT5020 built-in output pre-charge function which improves the picture quality of LED display.

Part Number Table

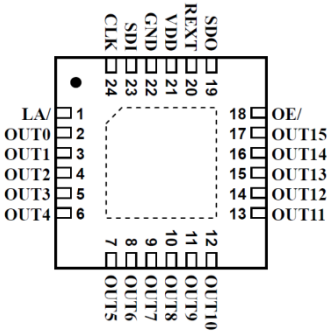
Part Number	Bit	Package	Pin Configurations	Production Status	Package Reference
SCT5020 CSSG	16 Bits	SSOP24	F	✓	Page 61
SCT5020 CSTG	16 Bits	SSOP24-1	F	✓	Page 62
SCT5020 CSOG	16 Bits	SOP24	F	Contact us!	Page 53
SCT5020 CQNG	16 Bits	TQFN24	H	Contact us!	Page 47
SCT5020 AQNG	16 Bits	TQFN24	I	Contact us!	Page 46

Pin Configurations



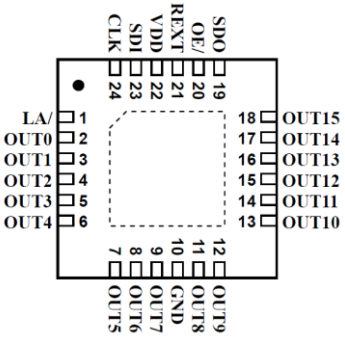
F

Pin Configurations



H

Pin Configurations

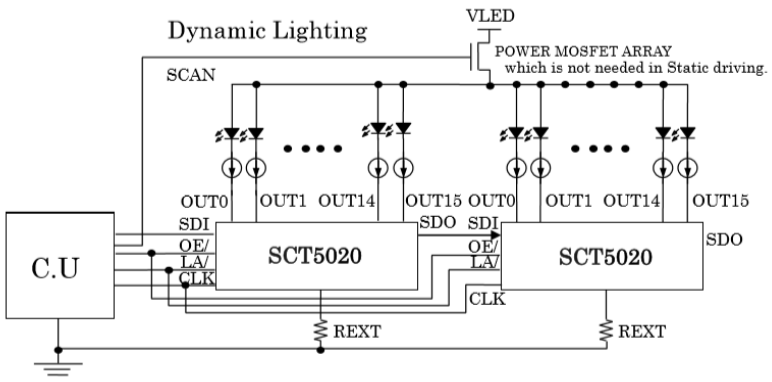


I

Maximum Ratings (T_A=25°C)				
Characteristic		**Symbol**	**Rating**	**Unit**
Supply Voltage		V_{DD}	7.0	V
Input Voltage		V_{IN}	-0.2 to V_{DD}+0.2	V
Output Current		I_{OUT}	60	mA/Channel
Output Voltage	SDO	V_{OUT}	-0.2 to V_{DD}+0.2	V
	OUT0~OUT15		-0.2 to 17	V
Total GND Terminals Current		I_{GND}	960	mA
Power Dissipation	SOP24	P_D	1.92	W
	SSOP24		1.42	
	SSOP24-1		1.74	
	TQFN		2.08	
Thermal Resistance	SOP24	$R_{TH(j-a)}$	65	°C/W
	SSOP24		88	
	SSOP24-1		72	
	TQFN		60	
Operating Junction Temperature		$T_{J(max)}$	150	°C
Operating Temperature		T_{OPR}	-40~+85	°C

Recommended Operating Condition						
Characteristic	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage	V_{DD}	-	3	-	5.5	V
Output Voltage	V_{OUT}	Output OFF	-	-	17	V
		Output ON	-	1	4	
Output Current	I_{OUT}	V_{DD}=3.3V	2	-	30	mA
		V_{DD}=5.0V	2	-	45	
Input Voltage	V_{IH}	Input Signals	0.7V_{DD}	-	V_{DD}	V
	V_{IL}	Input Signals	0	-	0.3V_{DD}	
OE/ Pulse Width	$t_{W(OE)}$	V_{DD}=3.3V/5V	40	-	-	nS

Typical Application Circuit

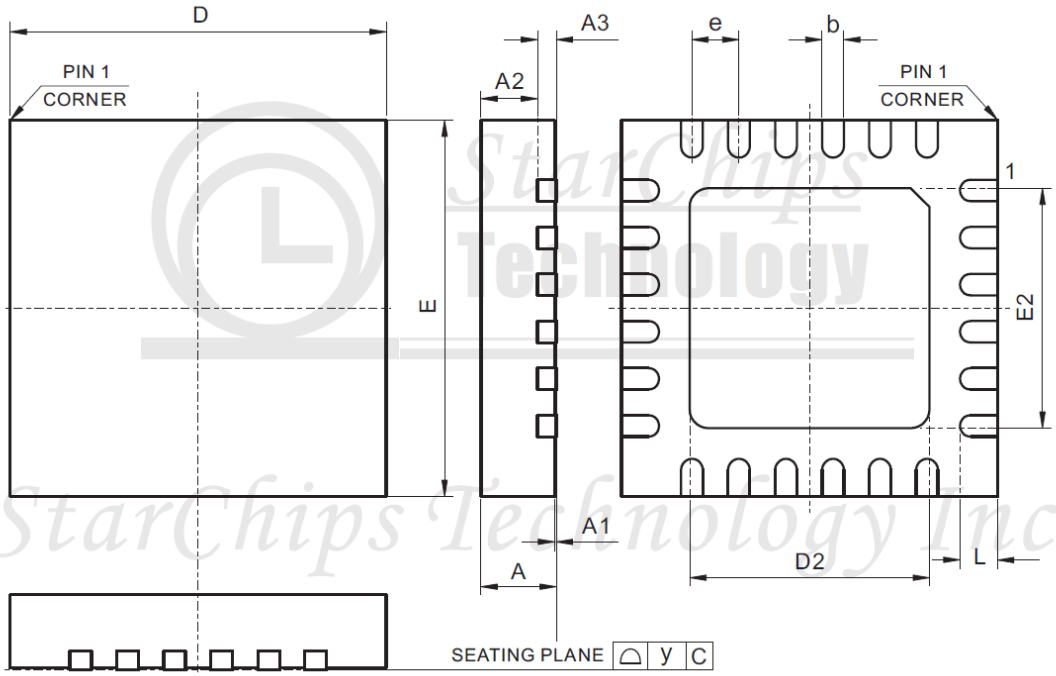


Package Dimension

Package Dimension

AQNG (TQFN24-4x4)

Package Dimensions (mm)

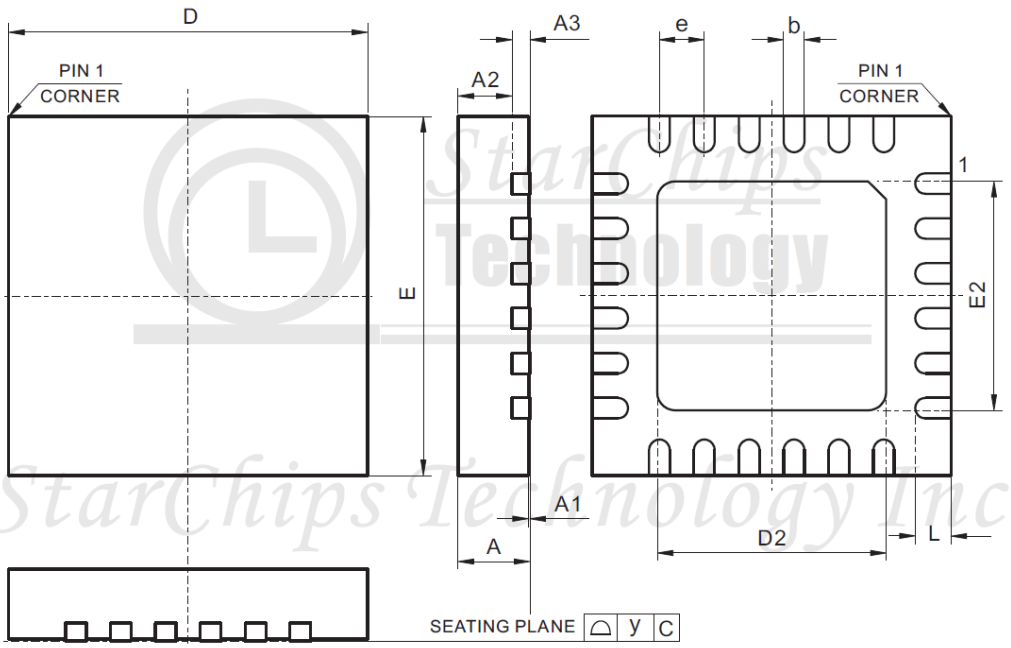


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.70	0.75	0.80	27.6	29.5	31.5
A1	0.00	0.035	0.05	0.0	1.4	2.0
A2	-	0.55	0.57	-	21.7	22.4
A3		0.203 REF			8.0 REF	
b	0.20	0.25	0.30	7.9	9.8	11.8
D		4.00 BSC			157.0 BSC	
D2	2.40	2.50	2.60	94.5	98.4	102.4
E		4.00 BSC			157.0 BSC	
E2	2.40	2.50	2.60	94.5	98.4	102.4
e		0.50 BSC			19.7 BSC	
L	0.35	0.40	0.45	13.8	15.7	17.7
y	-	0.08	-	-	3.1	-

Package Dimension

CQNG (TQFN24-4x4)

Package Dimensions (mm)

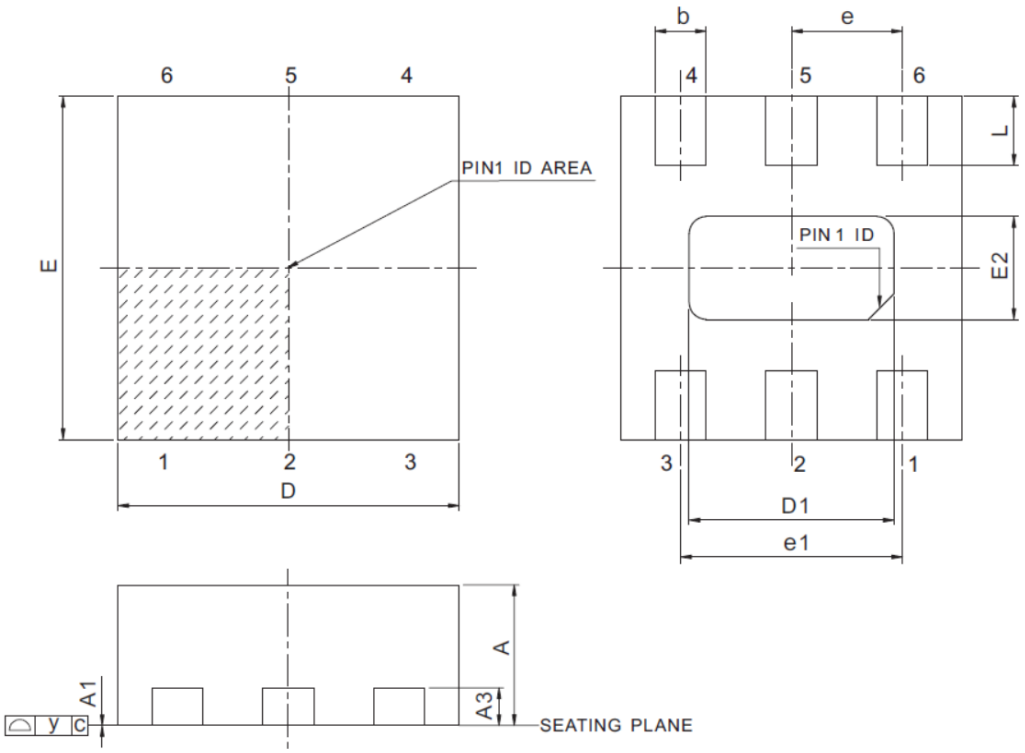


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.76	0.80	0.84	30.0	31.0	33.0
A1	0.00	0.02	0.04	0.0	0.8	1.5
A2	0.57	0.60	0.63	22.0	24.0	25.0
A3	0.20 REF			8.0 REF		
b	0.18	0.25	0.30	7.1	9.8	11.8
D	3.90	4.00	4.10	154.0	157.0	161.0
D2	2.50	2.55	2.60	98.4	100.4	102.4
E	3.90	4.00	4.10	154.0	157.0	161.0
E2	2.50	2.55	2.60	98.4	100.4	102.4
e	0.50 BSC			19.7 BSC		
L	0.35	0.40	0.45	13.8	15.7	17.7
y	-	0.08	-	-	3.1	-

Package Dimension

DFN6-2x2

Package Dimensions (mm)

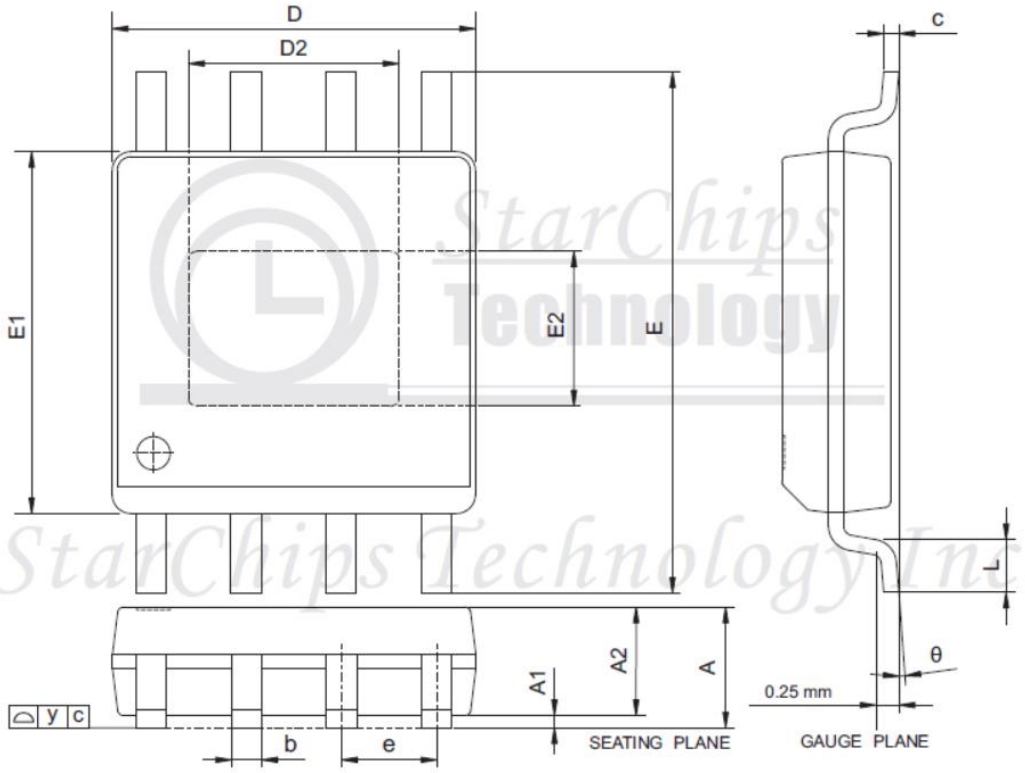


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.70	0.75	0.80	27.6	29.5	31.5
A1	0.00	0.02	0.05	0.0	0.8	2.0
A3	0.20 REF			7.9 REF		
b	0.20	0.30	0.40	7.9	11.8	15.7
D	1.90	2.00	2.10	74.8	78.7	82.7
D1	0.00	1.20	1.25	0.0	47.2	49.2
E	1.90	2.00	2.10	74.8	78.7	82.7
E2	0.00	0.60	0.65	0.0	23.6	25.6
e	0.65 BSC			25.6 BSC		
e1	13.0 BSC			51.2 BSC		
L	0.40 REF			15.7 REF		
y	-	-	0.08	-	-	3.1

Package Dimension

MSOP8TP with thermal pad

Package Dimensions (mm)

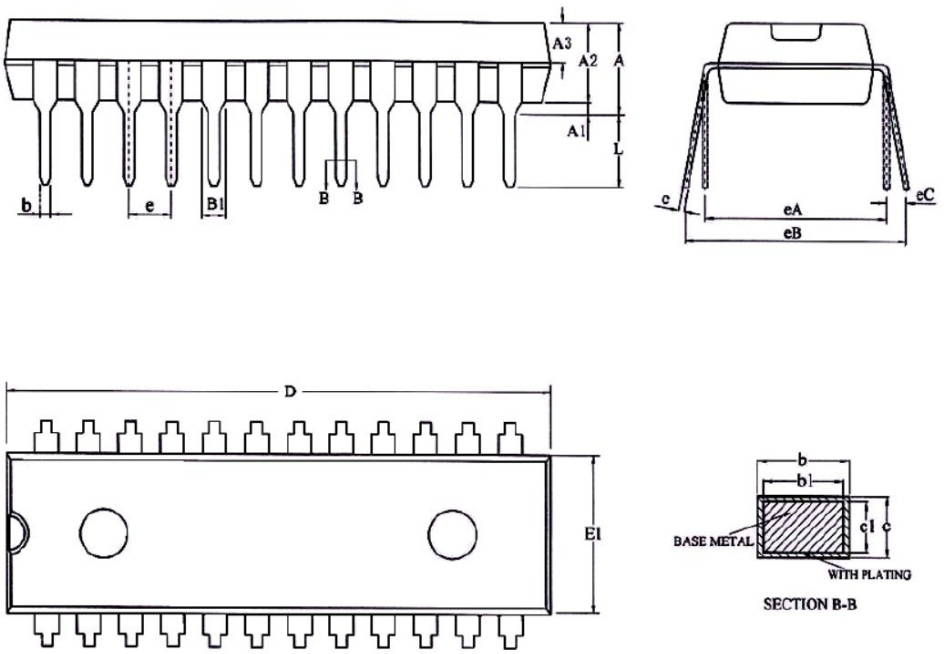


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.81	1.02	1.10	32.0	40.0	43.0
A1	0.05	-	0.15	2.0	-	6.0
A2	076	0.86	0.95	30.0	34.0	37.0
b	0.28	0.30	0.38	11.0	12.0	15.0
c	0.13	0.15	0.23	5.0	6.0	9.0
D	2.90	3.00	3.10	114.0	118.0	122.0
E	4.75	6.00	6.20	187.0	193.0	199.0
E1	2.90	3.00	3.10	114.0	118.0	12.0
e	0.65 BSC			26.0 BSC		
L	0.40	0.55	0.70	16.0	22.0	28.0
y	-	-	0.10	-	-	3.6
Θ	0°	3°	6°	0°	3°	6°

Package Dimension

SDIP24

Package Dimensions (mm)

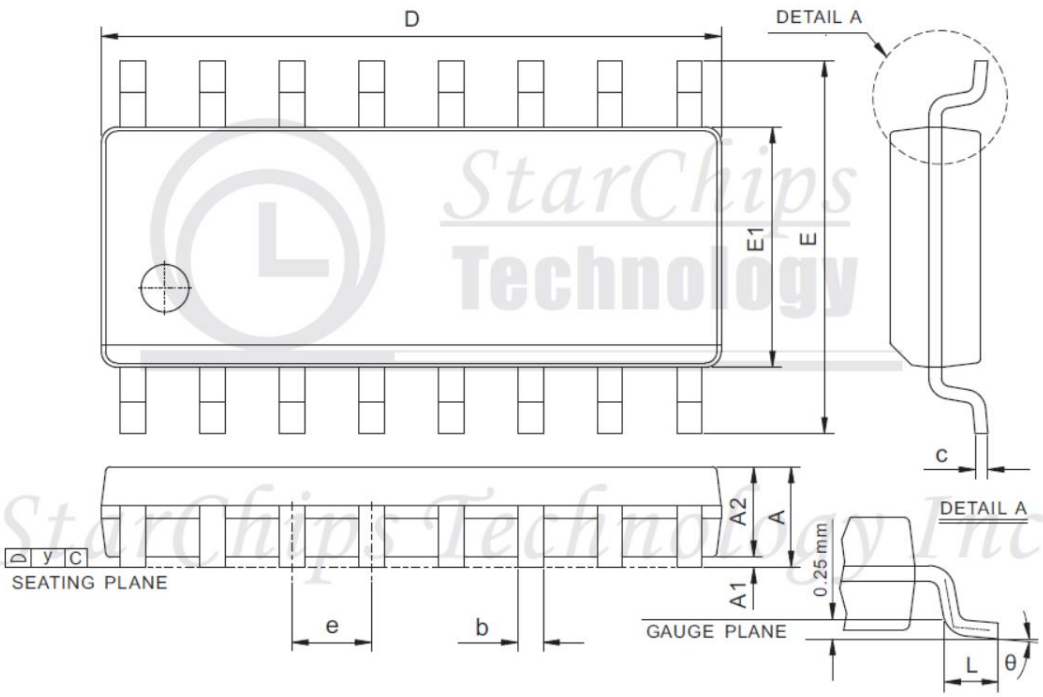


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	3.60	3.80	4.00	142	150	157
A1	0.30	-	-	12	-	-
A2	3.10	3.30	3.50	122	130	138
A3	1.42	1.52	1.62	56	60	64
b	0.44	-	0.53	17	-	21
b1	0.43	0.46	0.48	17	18	19
B1	1.00 BSC			39 BSC		
c	0.25	-	0.31	10	-	12
c1	0.24	0.25	0.26	9	10	11
D	22.70	22.90	23.10	894	902	909
E1	6.40	6.60	6.80	252	260	268
e	1.778 BSC			70 BSC		
eA	7.62 BSC			300 BSC		
eB	7.62	-	9.51	300	-	374
eC	0	-	0.94	0	-	37
L	3.00	-	-	118	-	-

Package Dimension

SOP16

Package Dimensions (mm)

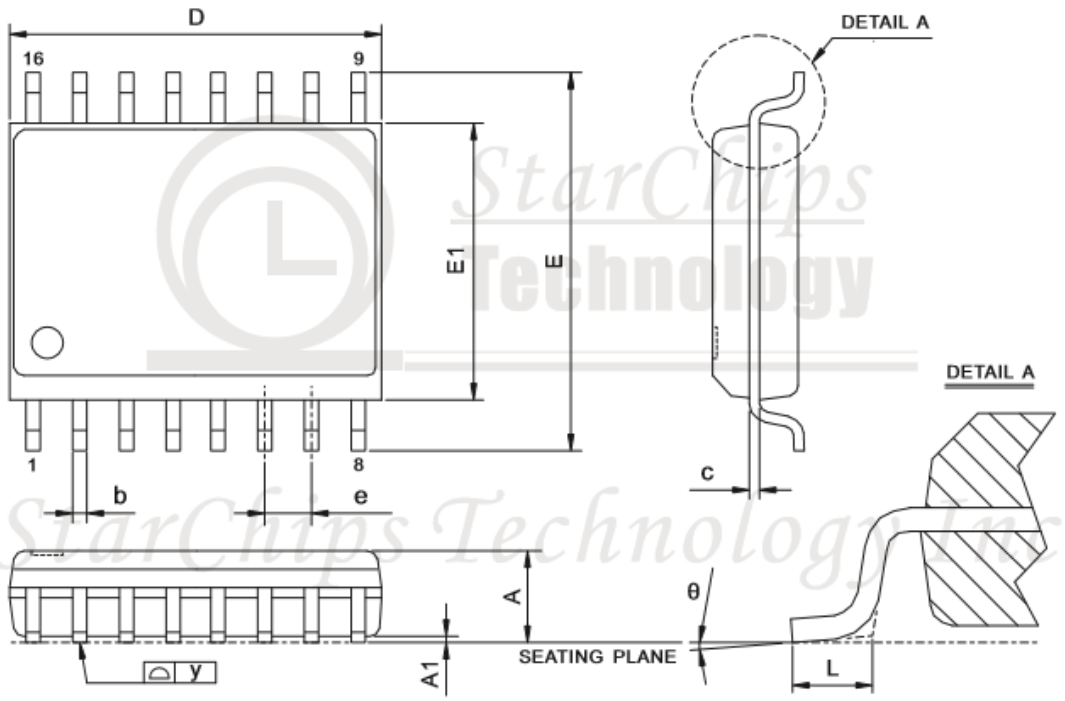


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.35	-	1.75	53.1	-	68.9
A1	0.10	-	0.25	3.9	-	9.8
A2	1.10	-	1.65	43.3	-	65.0
b	0.33	-	0.51	13.0	-	20.1
c	0.19	-	0.25	7.5	-	9.8
D	9.80	-	10.00	385.8	-	393.7
E	5.80	-	6.20	228.3	-	244.1
E1	3.80	-	4.00	149.6	-	157.5
e	1.27 BSC			50.0 BSC		
L	0.40	-	1.27	15.7	-	50.0
y	-	-	0.10	-	-	3.9
Θ	0°	-	8°	0°	-	8°

Package Dimension

SOP16W

Package Dimensions (mm)

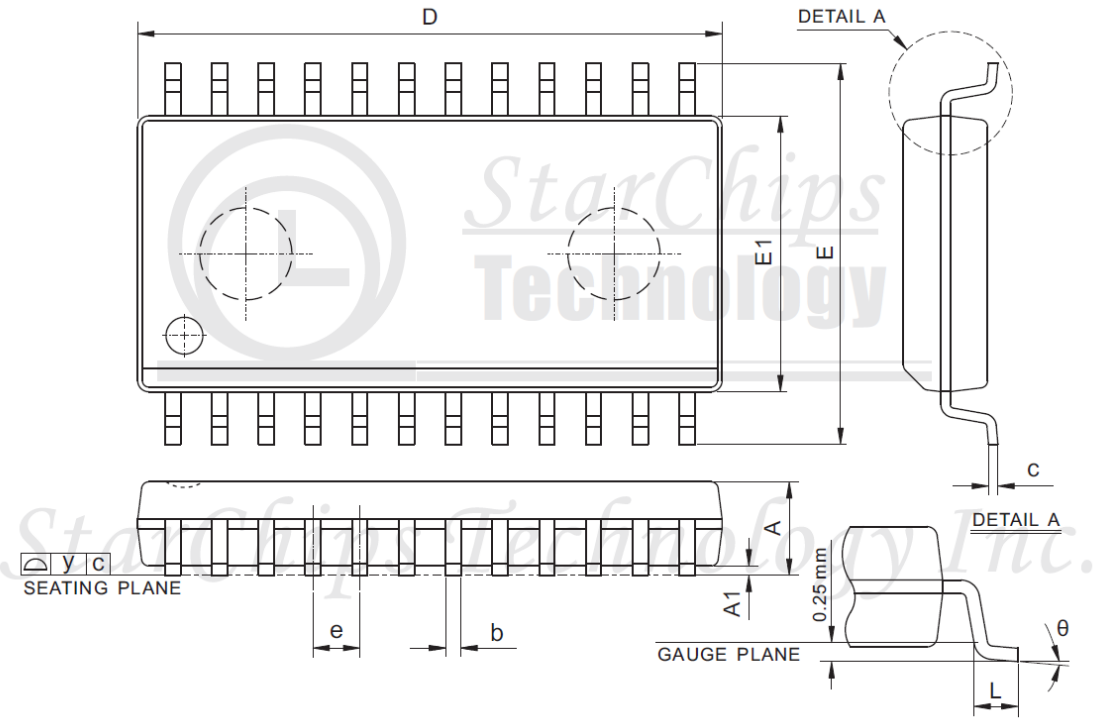


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.36	-	2.64	93.0	-	104.0
A1	0.10	-	0.30	4.0	-	12.0
b	-	0.41	-	-	16.0	-
c	-	0.20	-	-	8.0	-
D	10.12	-	10.49	398.0	-	413.0
E	10.01	-	10.64	394.0	-	419.0
E1	7.39	-	7.59	291.0	-	299.0
e	-	1.27	-	-	50.0	-
L	0.41	-	1.27	16.0	-	50.0
y	-	-	0.10	-	-	4.0
Θ	0°	-	8°	0°	-	8°

Package Dimension

SOP24

Package Dimensions (mm)

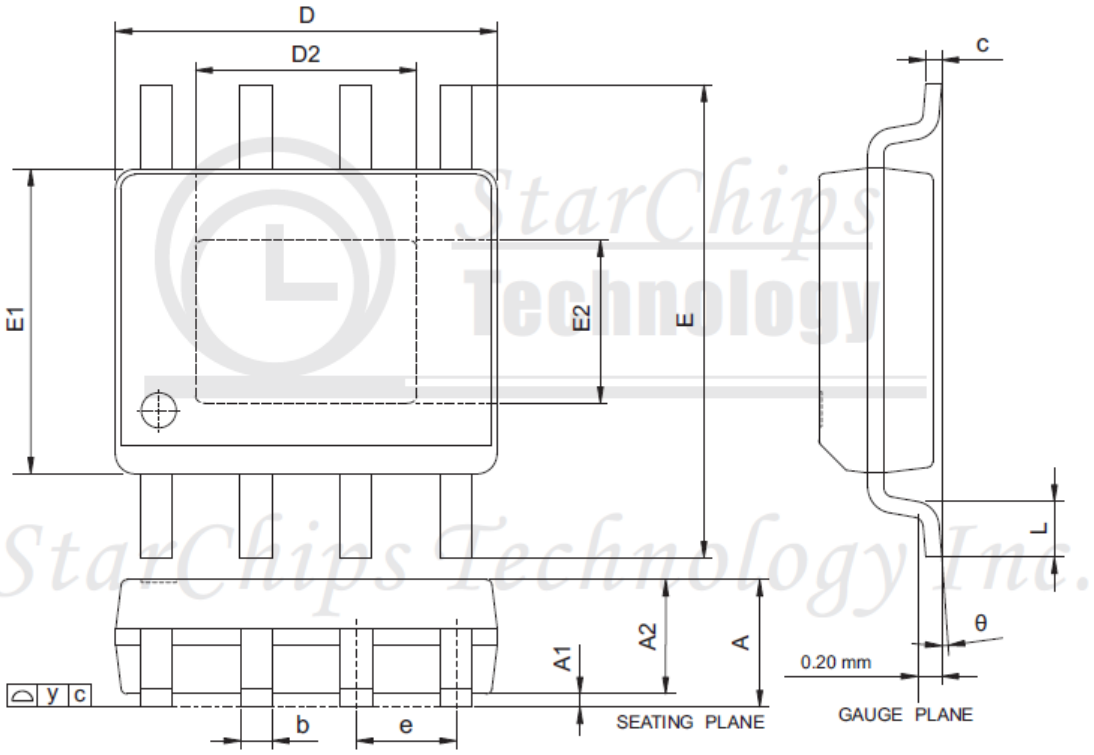


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.35	-	2.65	92.5	-	104.3
A1	0.10	-	0.30	3.9	-	11.8
b	0.33	-	0.51	13.0	-	20.1
c	0.23	-	0.32	9.1	-	12.6
D	15.20	-	15.60	598.4	-	614.2
E	10.00	-	10.65	393.7	-	419.3
E1	7.40	-	7.60	291.3	-	299.2
e	1.27 BSC			50.0 BSC		
L	0.40	-	1.27	15.7	-	50.0
y	-	-	0.10	-	-	3.9
θ	0°	-	8°	0°	-	8°

Package Dimension

SOP8TP with thermal pad

Package Dimensions (mm)

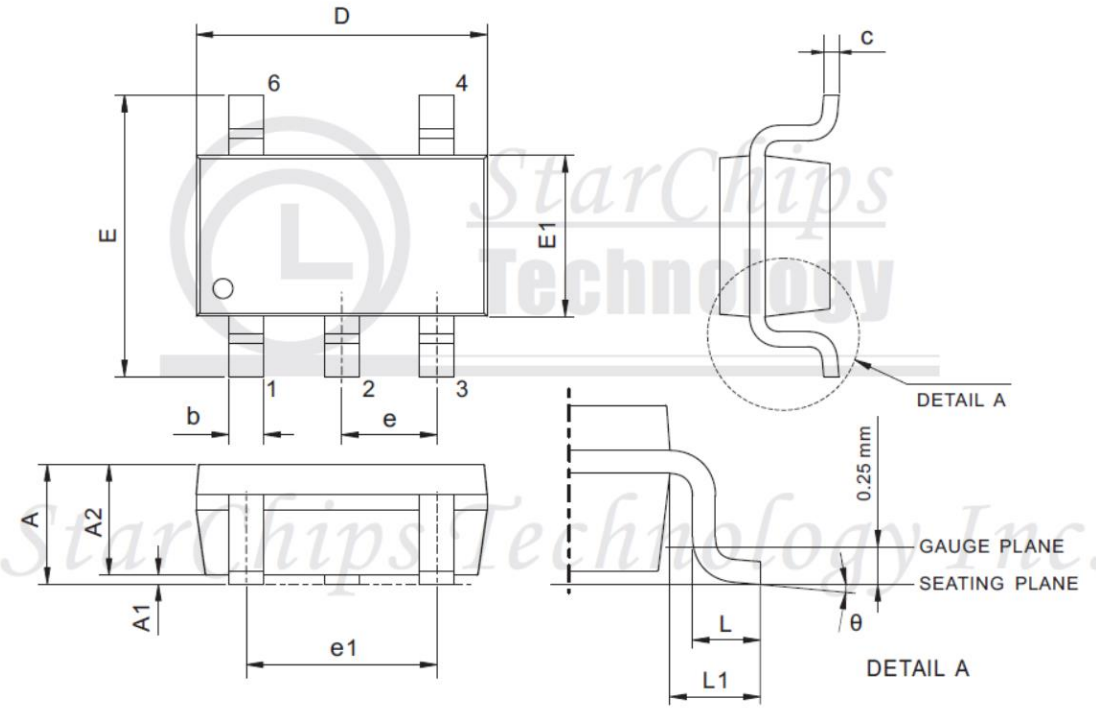


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40	1.50	1.60	55.1	59.1	63.0
A1	0.00	-	0.10	0.0	-	3.9
A2	-	1.45	-	-	57.1	-
b	0.33	-	1.51	13.0	-	20.1
c	0.19	-	0.25	7.5	-	9.8
D	4.80	-	5.00	189.0	-	196.9
E	5.80	6.00	6.20	228.3	236.2	244.1
E1	3.80	3.90	4.00	149.6	153.5	157.5
e	-	1.27	-	-	50.0	-
L	0.40	-	1.27	15.7	-	50.0
y	-	-	0.10	-	-	3.9
θ	0°	-	8°	0°	-	8°

Package Dimension

SOT23-5

Package Dimensions (mm)

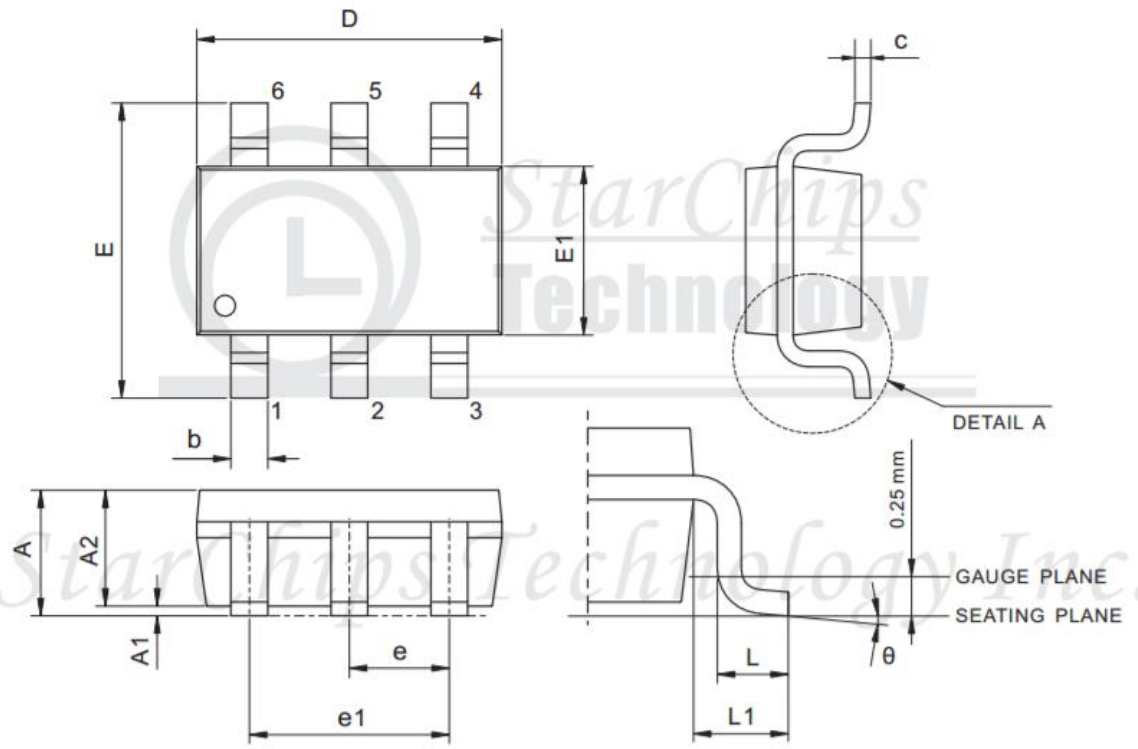


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.00	-	-	39.3
A1	0.01	-	0.10	0.3	-	3.9
A2	0.84	-	0.90	33.0	-	35.4
b	0.30	-	0.45	11.8	-	17.7
c	0.12	-	0.20	4.7	-	7.8
D	2.90 BSC			114.0 BSC		
E	2.80 BSC			110.0 BSC		
E1	1.60 BSC			62.0 BSC		
e	0.95 BSC			37.4 BSC		
e1	1.90 BSC			74.8 BSC		
L	0.30	-	0.50	11.8	-	19.6
L1	-			-		
Θ	4°	-	12°	4°	-	12°

Package Dimension

SOT236

Package Dimensions (mm)

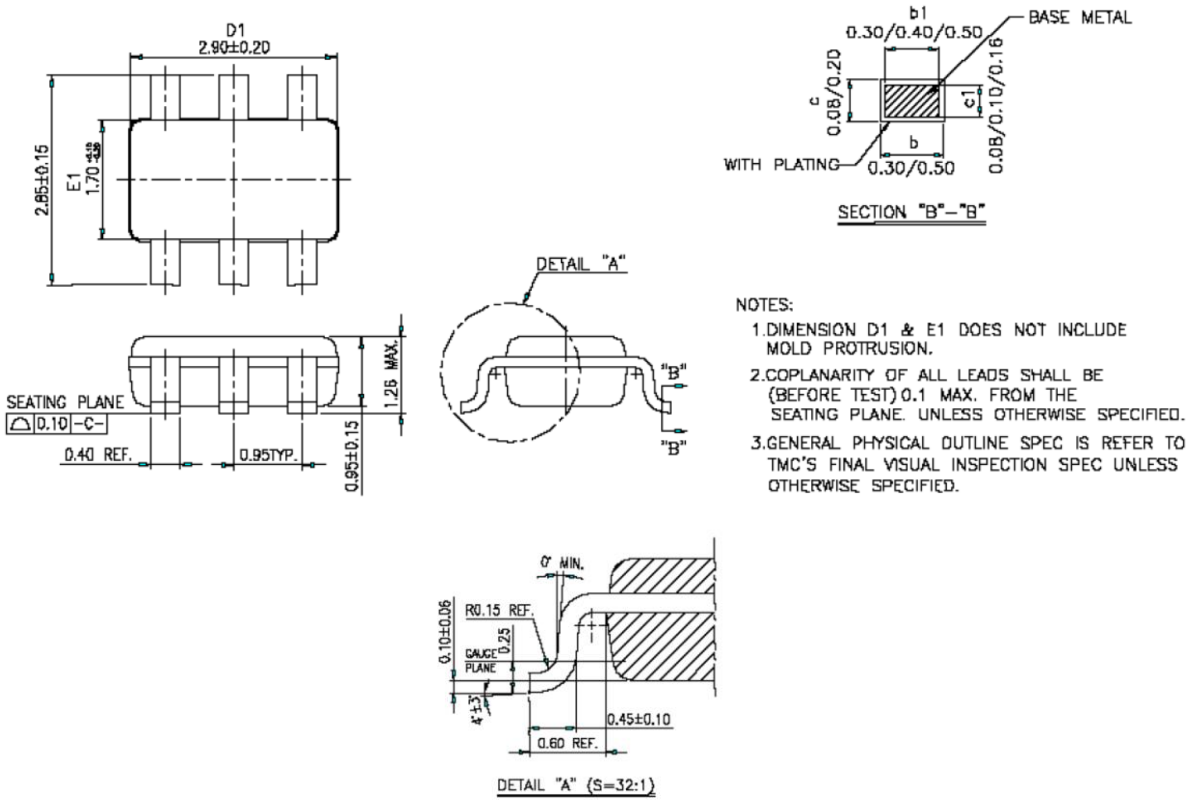


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.45	-	-	57.1
A1	0.00	-	0.15	0.0	-	5.9
A2	0.90	1.15	1.30	35.4	45.3	51.2
b	0.30	-	0.50	11.8	-	19.7
c	0.08	-	0.22	3.2	-	8.7
D	2.90 BSC			114.2 BSC		
E	2.80 BSC			1102 BSC		
E1	1.60 BSC			63.0 BSC		
e	0.95 BSC			37.4 BSC		
e1	1.90 BSC			74.8 BSC		
L	0.30	0.45	0.60	11.8	17.7	23.6
L1	0.60 REF			23.6 REF		
Θ	0°	4°	8°	0°	4°	8°

Package Dimension

SOT23-6

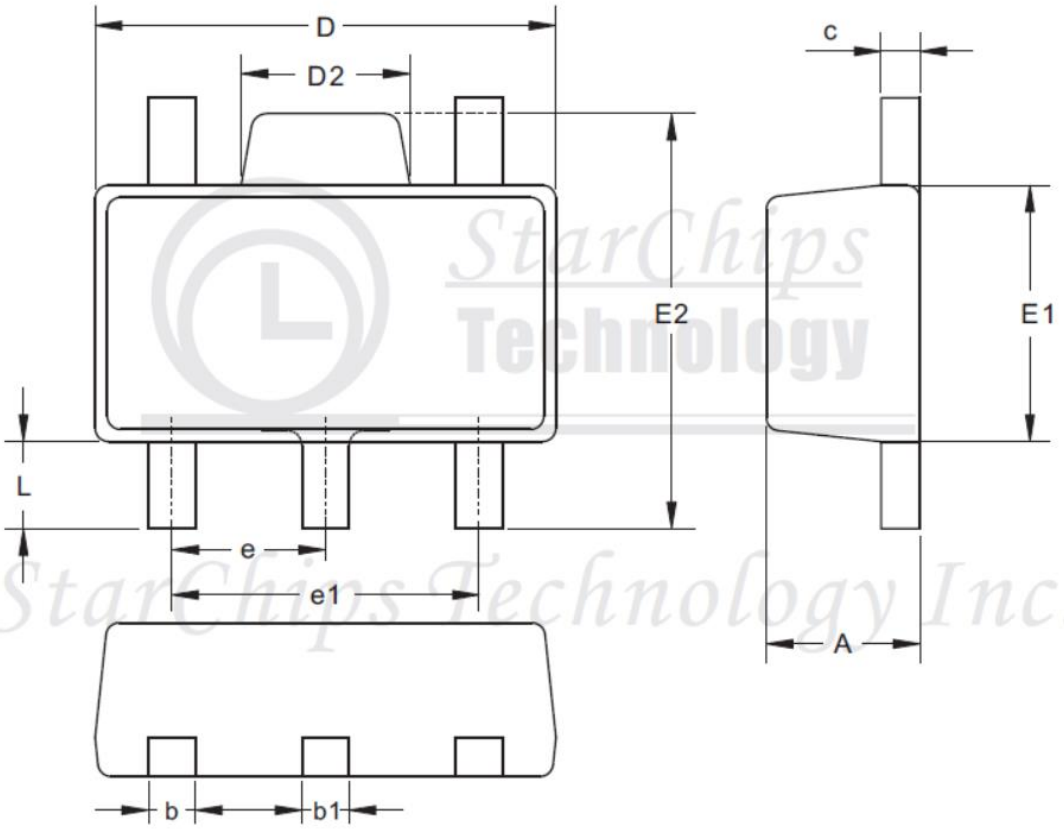
Package Dimensions (mm)



Package Dimension

SOT89-5

Package Dimensions (mm)

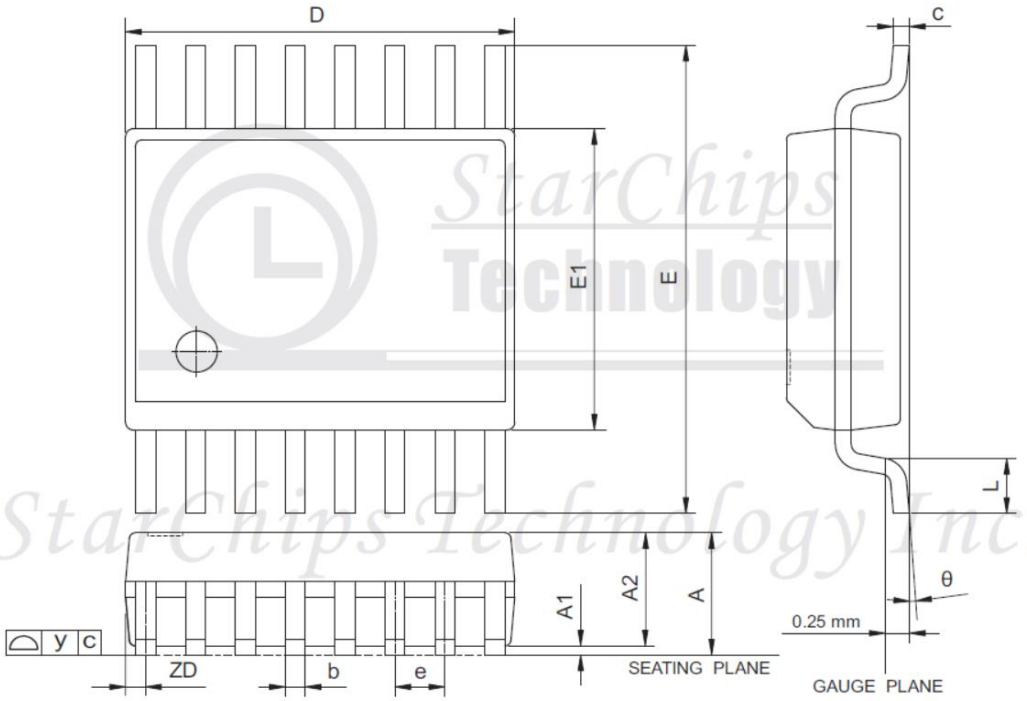


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40	-	1.60	55.0	-	63.0
b	0.32	-	0.52	13.0	-	20.0
b1	0.36	-	0.56	14.0	-	22.0
c	0.35	-	0.44	14.0	-	17.0
D	4.40	-	4.60	173.0	-	181.0
E1	2.30	-	2.60	91.0	-	102.0
D2	1.40	-	1.80	55.0	-	71.0
E2	3.94	-	4.25	155.0	-	167.0
e	1.50TYP			60.0 TYP		
e1	2.90	-	3.10	114.0	-	122.0
L	0.90	-	1.10	35.0	-	43.0

Package Dimension

SSOP16

Package Dimensions (mm)

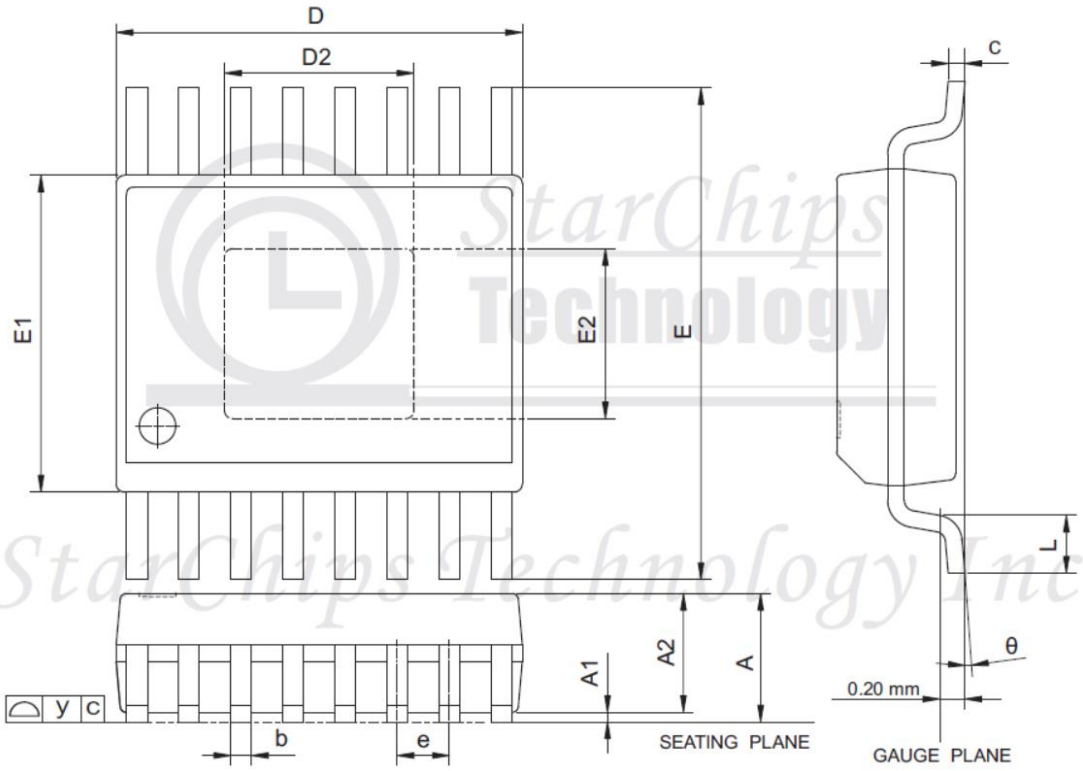


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.35	1.63	1.75	53.1	64.2	68.9
A1	0.10	0.15	0.25	3.9	5.9	9.8
A2	-	-	1.50	-	-	59.1
b	0.20	-	0.30	7.9	-	11.8
c	0.18	-	0.25	7.1	-	9.8
D	4.80	4.90	5.00	189.0	192.9	196.9
E	5.79	5.99	6.20	228.0	235.8	244.1
E1	3.81	3.91	3.99	150.0	153.9	157.1
e	0.64 BSC			25.0 BSC		
L	0.41	0.64	1.27	16.1	25.0	50.0
y	-	-	0.10	-	-	3.9
ZD	0.23 REF			9.0 REF		
θ	0°	-	8°	0°	-	8°

Package Dimension

SSOP16TP with thermal pad

Package Dimensions (mm)

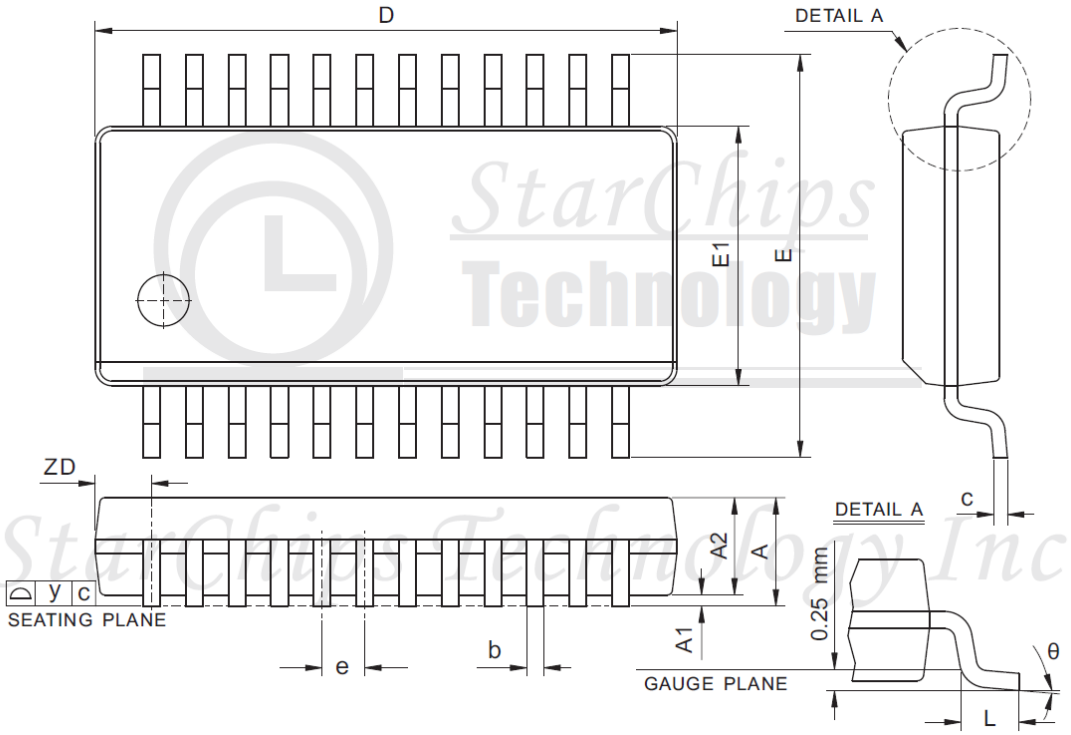


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.35	1.50	1.65	53.1	59.1	65.0
A1	0.00	-	0.10	0.0	-	3.9
A2	-	1.45	-	-	57.1	-
b	0.20	0.25	0.30	7.9	9.8	11.8
c	0.19	-	0.25	7.5	-	9.8
D	4.80	-	5.00	189.0	-	196.9
E	5.80	6.00	6.20	228.3	236.2	244.1
E1	3.80	3.90	4.00	149.6	153.5	157.5
e	-	0.64	-	-	25.2	-
L	-0.40	-0.64	1.27	15.7	-	50.0
y	-	-	0.10	-	-	3.9
Θ	0°	-	8°	0°	-	8°

Package Dimension

SSOP24

Package Dimensions (mm)

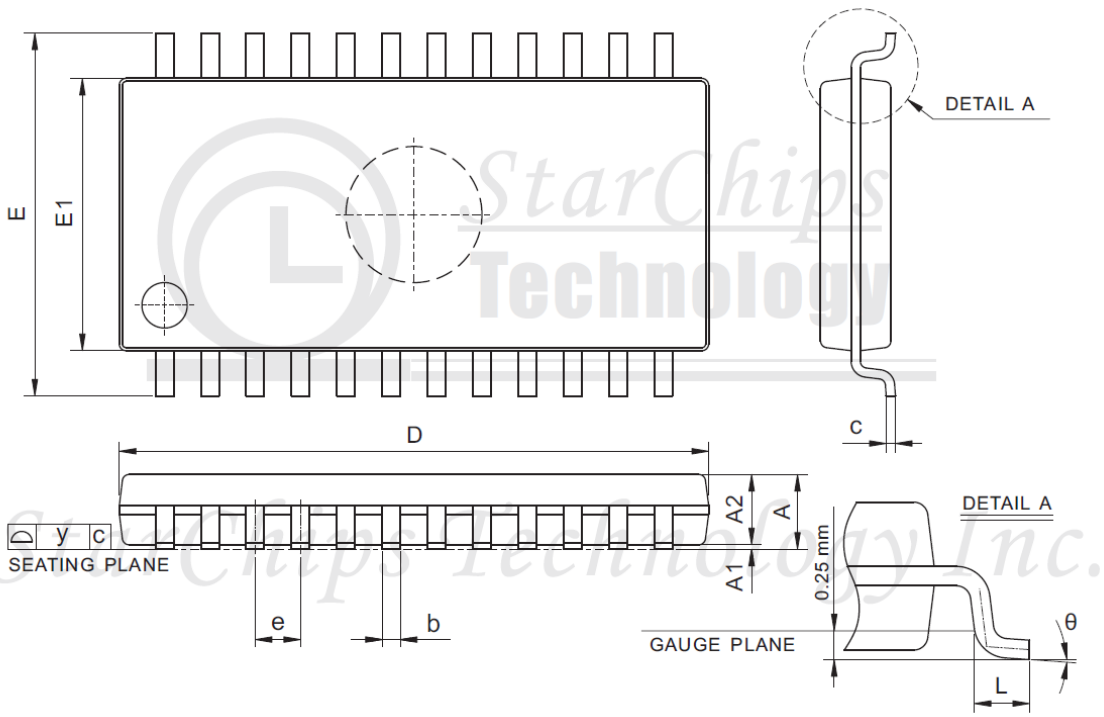


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.35	1.63	1.75	53.1	64.2	68.9
A1	0.10	0.15	0.25	3.9	5.9	9.8
A2	-	-	1.50	-	-	59.1
b	0.20	-	0.30	7.9	-	11.8
c	0.18	-	0.25	7.1	-	9.8
D	8.56	8.66	8.74	337.0	340.9	344.1
E	5.79	5.99	6.20	228.0	235.8	244.1
E1	3.81	3.91	3.99	150.0	153.9	157.1
e	0.64 BSC			25.0 BSC		
L	0.41	0.64	1.27	16.1	25.0	50.0
y	-	-	0.10	-	-	3.9
ZD	0.84 REF			33.0 REF		
θ	0°	-	8°	0°	-	8°

Package Dimension

SSOP24-1

Package Dimensions (mm)

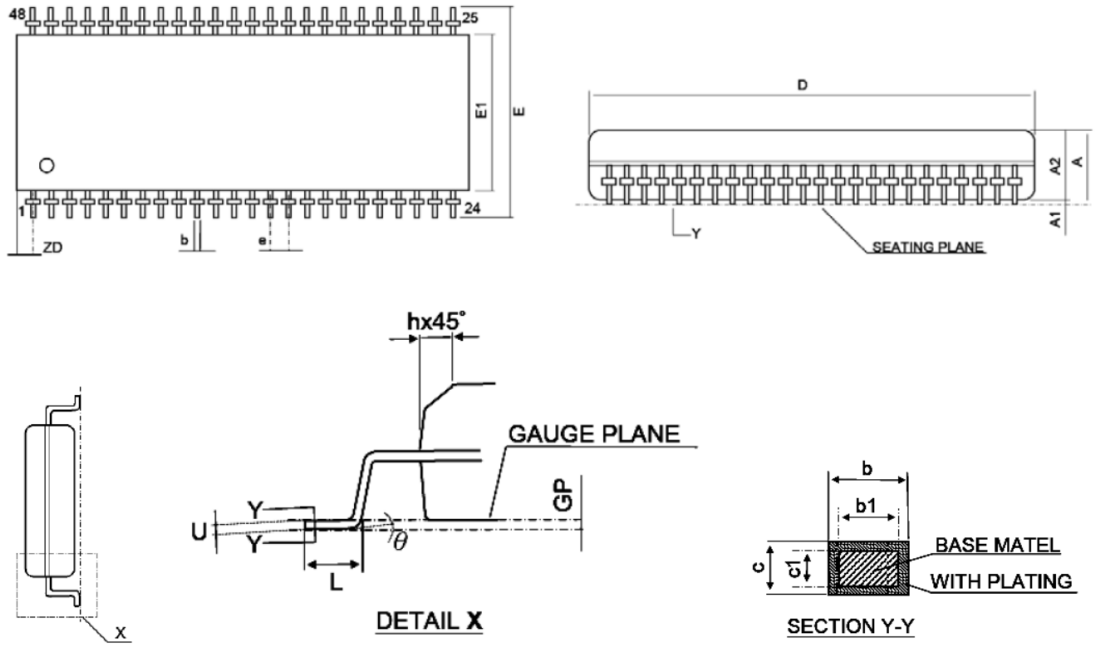


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.90	-	-	74.8
A1	0.05	0.10	0.15	2.0	3.9	5.9
A2	1.30	1.50	1.70	51.2	59.1	66.9
b	0.30	0.40	0.52	11.8	15.7	20.5
c	0.10	0.15	0.27	3.9	5.9	10.6
D	12.80	13.00	13.20	503.9	511.8	519.7
E	7.70	8.00	8.30	303.1	315.0	326.8
E1	5.80	6.00	6.20	228.3	236.2	244.1
e	1.00 BSC			39.4 BSC		
L	0.25	0.45	0.65	9.8	17.7	25.6
y	-	-	0.10	-	-	3.9
θ	0°	-	10°	0°	-	10°

Package Dimension

SSOP48

Package Dimensions (mm)

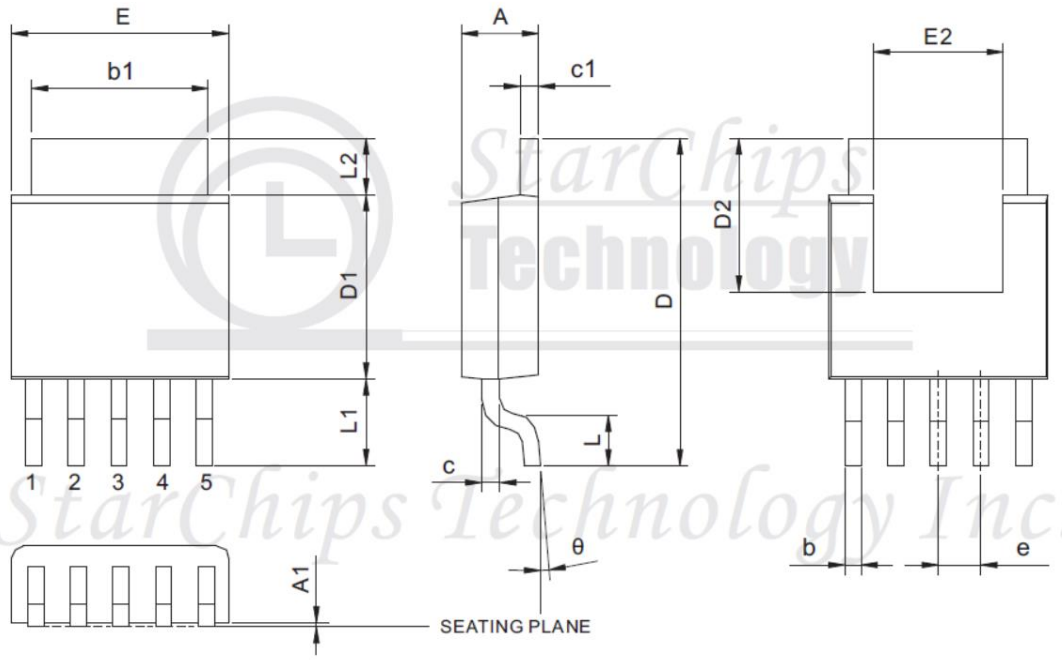


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.413	2.591	2.794	95	102	110
A1	0.203	0.305	0.406	8	12	16
A2	2.235	2.286	2.337	88	90	92
b	0.203	-	0.343	8	-	13.5
b1	0.203	0.254	0.305	8	10	12
c	0.127	-	0.254	5	-	10
c1	0.127	0.203	0.216	5	8	8.5
D	15.748	15.875	16.002	620	625	630
E	10.033	10.312	10.668	395	406	420
E1	7.391	7.493	7.595	291	295	299
e	0.635 BSC			25 BSC		
GP	0.254 BASIC			10 BASIC		
ZD	0.635 REF			25 REF		
h	0.381	0.508	0.635	15	20	25
L	0.508	0.76	1.016	20	30	40
Y	-	-	0.102	-	-	4
θ	0°	4°	8°	0°	4°	8°

Package Dimension

TO252-5

Package Dimensions (mm)

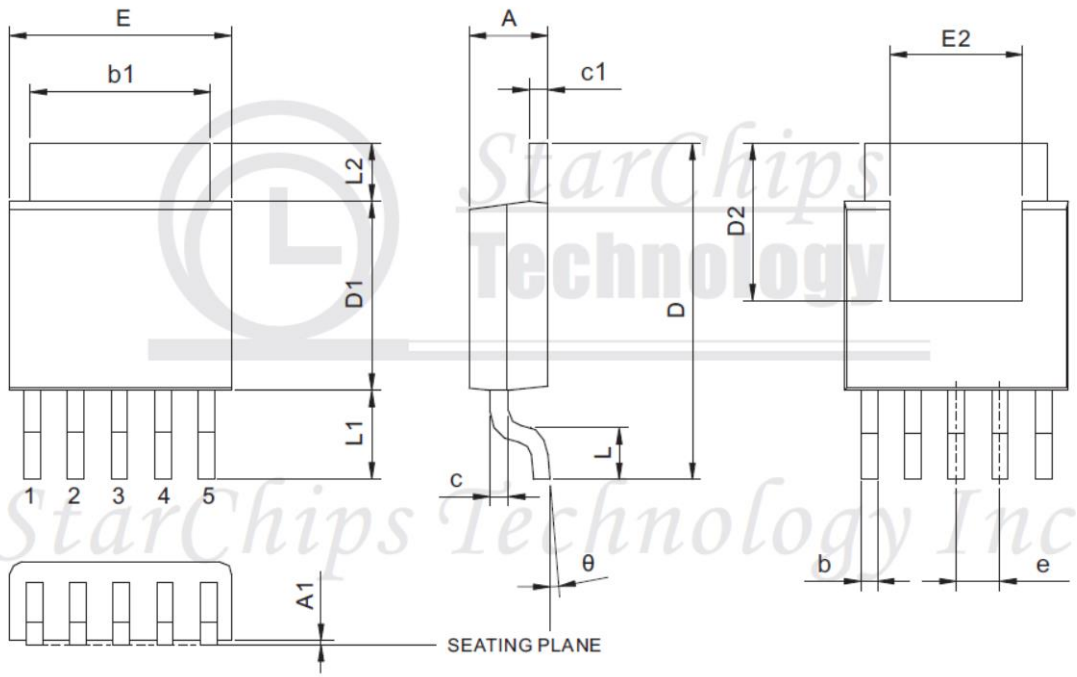


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10	2.30	2.50	82.7	90.6	98.4
A1	0.00	0.20	0.30	0.0	7.9	11.8
b		-			-	
b1	4.80	5.00	5.20	189.0	196.9	204.7
c	-	-	-	-	-	-
c1	0.40	0.50	0.60	15.7	19.7	23.6
D	-	-	-	-	-	-
D1	-	5.50	-	-	216.5	-
D2	-	-	-	-	-	-
E	-	-	6.70	-	-	263.8
E2	-	-	-	-	-	-
e		1.30 BSC			51.2 BSC	
L	0.90	1.20	1.50	35.4	47.2	59.1
L1	-	2.50	-	-	98.4	-
L2	1.20	1.50	1.80	47.2	59.1	70.9
Θ	-	-	-	-	-	-

Package Dimension

TO252-5L

Package Dimensions (mm)

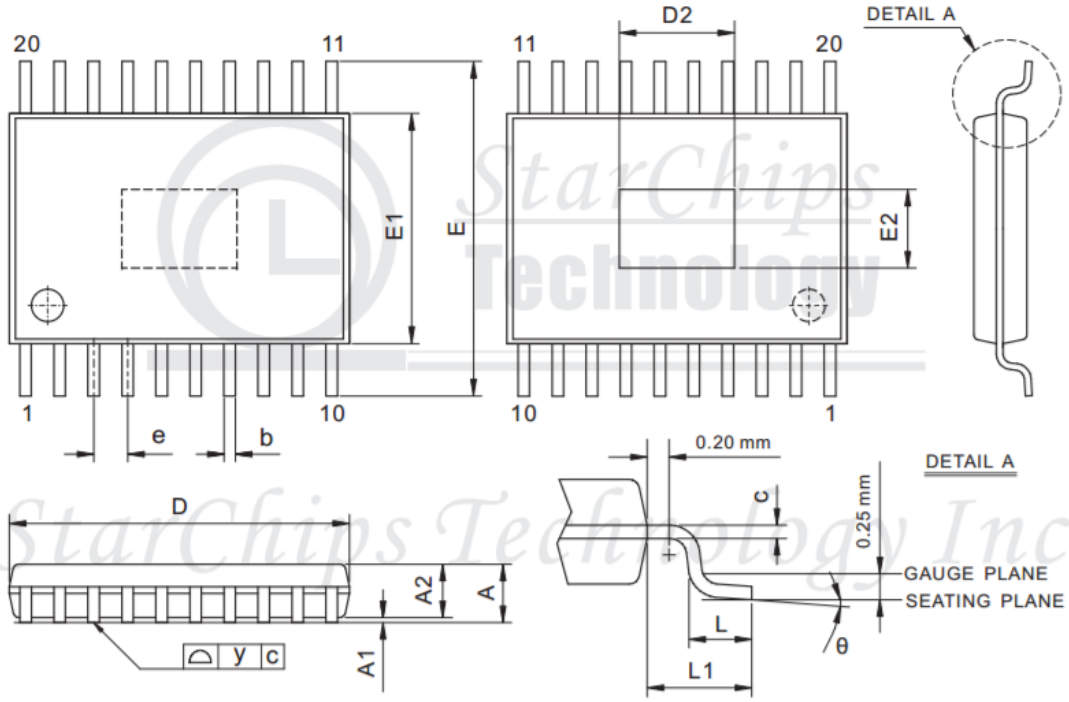


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.18	-	2.39	86.0	-	94.0
A1	0.00	-	0.13	0.0	-	5.0
b	0.51 TYP			20.0 TYP		
b1	5.21	-	5.46	205.0	-	215.0
c	0.46	-	0.58	18.0	-	23.0
c1	0.46	-	0.58	18.0	-	23.0
D	9.40	-	10.41	370.0	-	410.0
D1	5.33	-	5.59	210.0	-	220.0
D2	4.57	-	-	180.0	-	-
E	6.35	-	6.73	250.0	-	265.0
E2	3.81	-	-	150.0	-	-
e	1.27 BSC			50.0 BSC		
L	1.40	-	1.78	55.0	-	70.0
L1	2.67 REF			105.0 REF		
L2	1.52	-	2.03	60.0	-	80.0
Θ	0°	-	4°	0°	-	4°

Package Dimension

TSSOP20TP with thermal pad

Package Dimensions (mm)

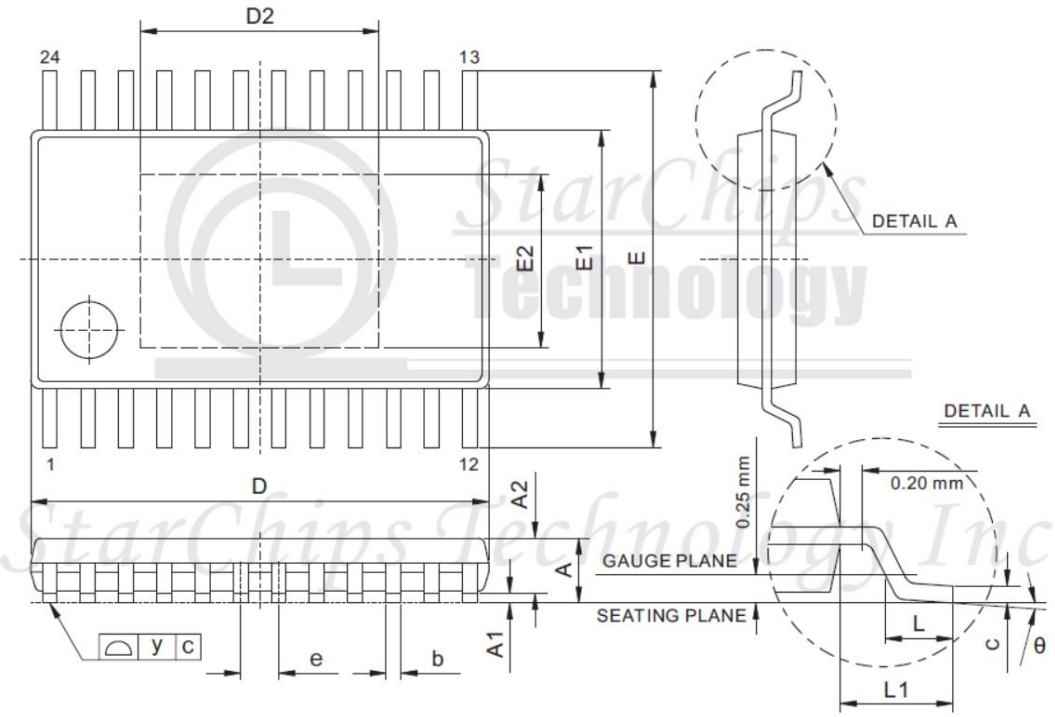


Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.20	-	-	47.2
A1	0.05	-	0.15	2.0	-	6.0
A2	0.80	0.90	1.05	31.0	35.0	41.0
b	0.19	-	0.30	7.0	-	12.0
c	0.09	-	0.20	4.0	-	8.0
D	6.40	6.50	6.60	252.0	255.9	259.8
E1	4.30	4.40	4.50	169.0	173.0	177.0
E	6.40 BSC			252.0 BSC		
e	0.65 BSC			26.0 BSC		
L1	1.00 REF			39.0 REF		
L	0.45	0.60	0.75	18.0	24.0	30.0
y	-	-	0.10	-	-	4.0
D2	-	3.81	-	-	150.0	-
E2	-	3.00	-	-	118.1	-
θ	0°	-	8°	0°	-	8°

Package Dimension

TSSOP24TP with thermal pad

Package Dimensions (mm)



Symbol	Dimension (mm)			Dimension (mil)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	-	1.20	-	-	47.0
A1	0.05	-	0.15	2.0	-	6.0
A2	0.80	0.90	1.05	31.0	35.0	41.0
b	0.19	-	0.30	7.0	-	12.0
c	0.09	-	0.20	4.0	-	8.0
D	7.70	7.80	7.90	303.1	307.1	311.0
E1	4.30	4.40	4.50	169.0	173.0	177.0
E	6.40 BSC			252.0 BSC		
e	0.65 BSC			26.0 BSC		
L1	1.00 REF			39.0 REF		
L	0.45	0.60	0.75	18.0	24.0	30.0
y	-	-	0.10	-	-	4.0
D2	-	4.57	-	-	180.0	-
E2	-	3.00	-	-	118.0	-
Θ	0°	-	8°	0°	-	8°

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