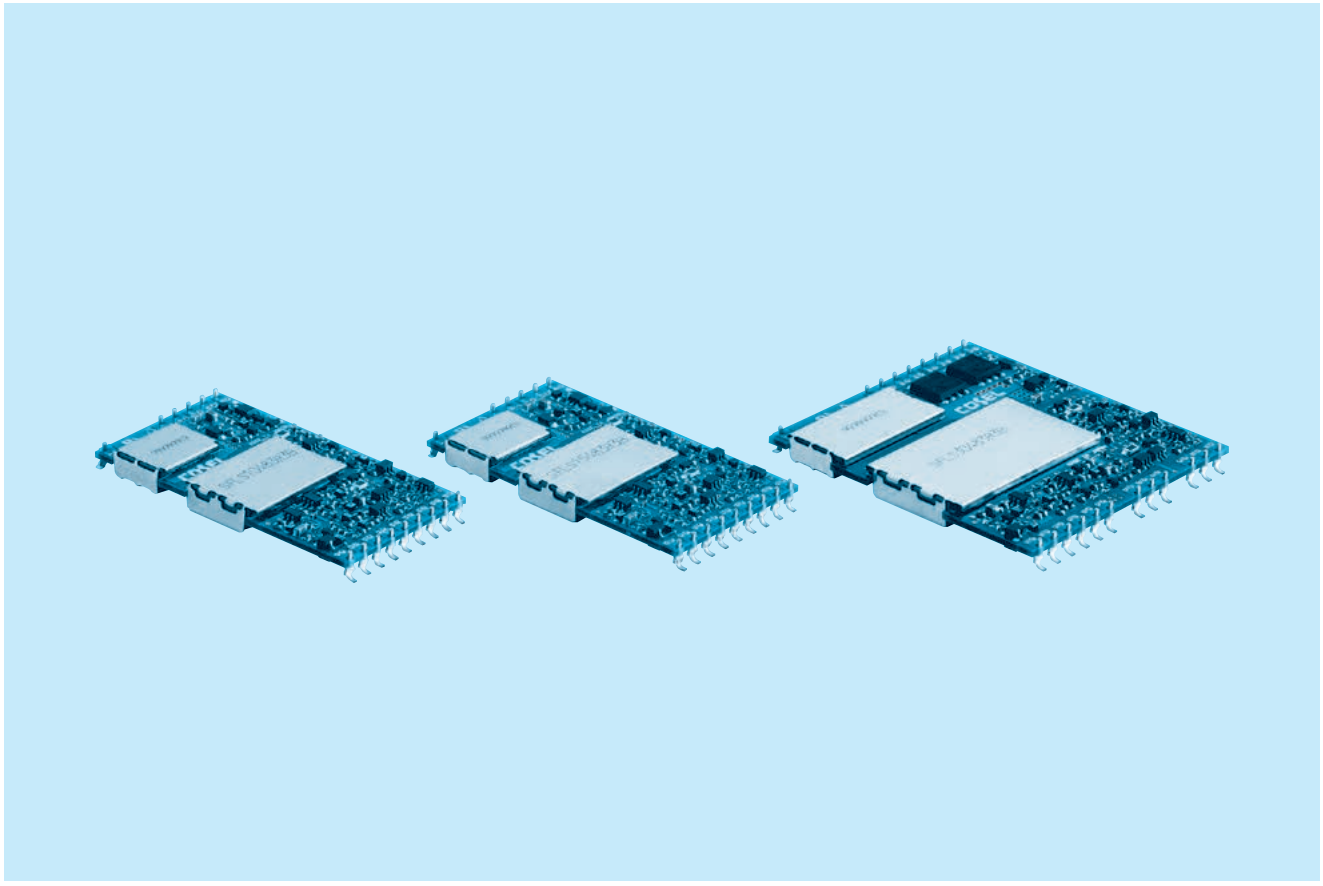
Low Profile | Isolated | Safety Approvals | OCP | OVP | Remote ON/OFF | Parallel Operation

SFLS-series



Feature

Low profile SMD mounting type
High efficiency (synchronous rectifier circuit)
Parallel operation is possible
Built-in overcurrent, overvoltage and lowvoltage circuits
Built-in remote ON/OFF, alarm
Built-in Power ready / Sequence control

CE marking

Low Voltage Directive
RoHS Directive

Safety agency approvals

UL60950-1, C-UL, EN60950-1

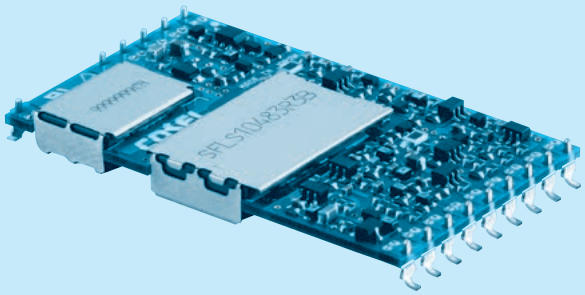
5-year warranty

COSEL DC-DC Converters PCB Mount Type

SFLS10

Ordering information

SFL	S	10	48	3R3	B
①	②	③	④	⑤	⑧



①Series name
②Single output
③Output wattage
④Input voltage
48:DC36 - 76V
⑤Output voltage
⑧Mounting type
B :SMD

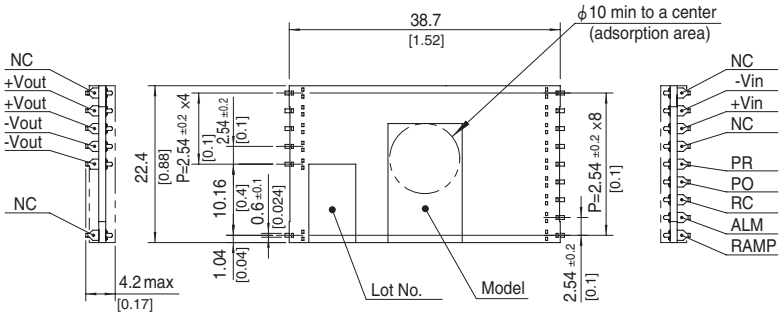
MODEL	SFLS10482R5	SFLS10483R3	SFLS104805
MAX OUTPUT WATTAGE[W]	7.5	9.9	10.0
DC OUTPUT	2.5V 3A	3.3V 3A	5V 2A

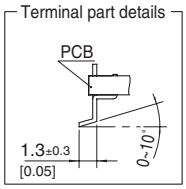
SPECIFICATIONS

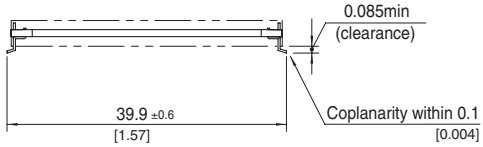
	MODEL	SFLS10482R5	SFLS10483R3	SFLS104805
INPUT	VOLTAGE[V]	DC36 - 76		
	CURRENT[A] *1	0.18typ	0.24typ	0.24typ
	EFFICIENCY[%] *1	86typ	87typ	88typ
	START-UP VOLTAGE[V]	DC32 - 36		
	HYSTERESIS VOLTAGE[V]	DC2 min		
OUTPUT	VOLTAGE[V]	2.5	3.3	5
	CURRENT[A]	3	3	2
	VOLTAGE ACCURACY[%]	+5, -3		
	RIPPLE[mVp-p]	25max		
	RIPPLE NOISE[mVp-p]	50max		
	START-UP TIME[ms]	20 - 100max (DCIN 48V, Io=100%)		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 103% of rating		
	OVERVOLTAGE PROTECTION	Works at 115 - 150% of rating		
	LOWVOLTAGE PROTECTION	Works at 93% max of rating		
	REMOTE ON/OFF	Provided(RC open : ON, short between RC and +Vin : OFF)		
ISOLATION	INPUT-OUTPUT	DC1,500V 1minute, DC500V 50MΩ min (20±15℃)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-40 to +85℃, 20 - 95%RH (Non condensing), 3,000m (10,000feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE	-40 to +100℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max (Refer to the Instruction Manual)		
	VIBRATION	10 - 55Hz, 49.0m/s^2 (5G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT	196.1m/s^2 (20G), 11ms, once each X, Y and Z axis		
SAFETY	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN60950-1		
OTHERS	CASE SIZE/WEIGHT	38.7×4.2×22.4mm [1.52×0.166×0.88 inches] (W×H×D) / 8g max		
	COOLING METHOD	Convection		

*1 At rated input(DC48V), rated load and 25℃

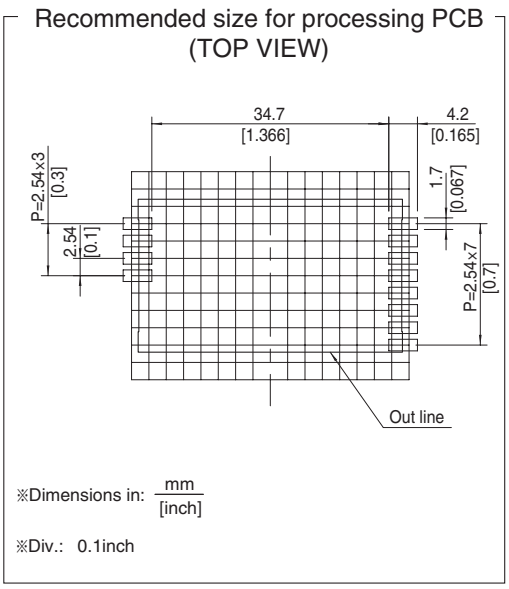
External view







※Dimensions in mm,[ ]= inches
※Tolerance ±0.5 [±0.02]
※Weight:8g max
※Terminal thickness:0.3±0.1 [0.012]
Terminal material:copper alloy
Plating treatment of terminal
:Sn with Ni barreir

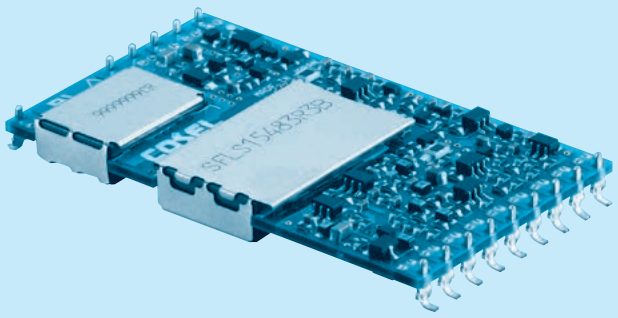


COSEL DC-DC Converters PCB Mount Type

SFLS15

Ordering information

SFL	S	15	48	3R3	B
①	②	③	④	⑤	⑧



①Series name
②Single output
③Output wattage
④Input voltage
48:DC36 - 76V
⑤Output voltage
⑧Mounting type
B :SMD

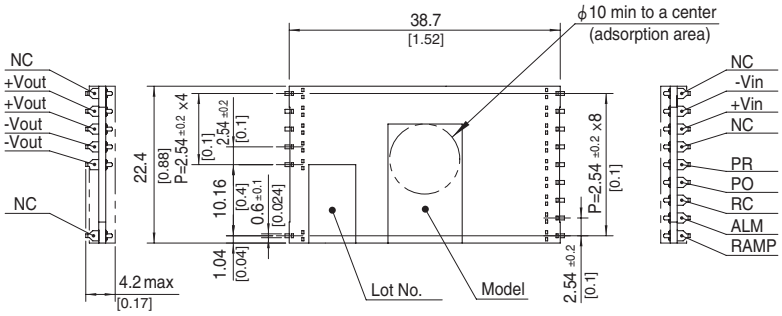
MODEL	SFLS15481R2	SFLS15481R5	SFLS15481R8	SFLS15482R5	SFLS15483R3	SFLS154805	SFLS15485R2	SFLS154812
MAX OUTPUT WATTAGE[W]	6.24	7.8	8.1	11.25	14.85	15.0	15.6	15.0
DC OUTPUT	1.2V 5.2A	1.5V 5.2A	1.8V 4.5A	2.5V 4.5A	3.3V 4.5A	5V 3A	5.2V 3A	12V 1.25A

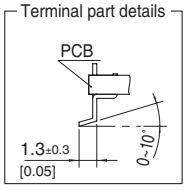
SPECIFICATIONS

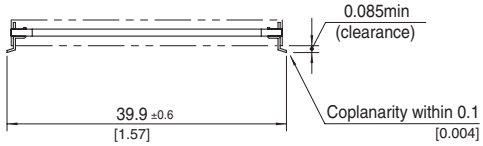
	MODEL	SFLS15481R2	SFLS15481R5	SFLS15481R8	SFLS15482R5	SFLS15483R3	SFLS154805	SFLS15485R2	SFLS154812
INPUT	VOLTAGE[V]	DC36 - 76							
	CURRENT[A] *1	0.16typ	0.20typ	0.20typ	0.27typ	0.35typ	0.35typ	0.37typ	0.35typ
	EFFICIENCY[%] *1	81typ	82typ	85typ	87typ	89typ	89typ	89typ	89typ
	START-UP VOLTAGE[V]	DC32 - 36							
	HYSTERESIS VOLTAGE[V]	DC2 min							
OUTPUT	VOLTAGE[V]	1.2	1.5	1.8	2.5	3.3	5	5.2	12
	CURRENT[A]	5.2	5.2	4.5	4.5	4.5	3	3	1.25
	VOLTAGE ACCURACY[%]	+5, -3							
	RIPPLE[mVp-p]	25max							120max
	RIPPLE NOISE[mVp-p]	50max							150max
	START-UP TIME[ms]	20 - 100max (DCIN 48V, Io=100%)							
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 103% of rating							
	OVERVOLTAGE PROTECTION	Works at 115 - 160% of rating			Works at 115 - 150% of rating				
	LOWVOLTAGE PROTECTION	Works at 93% max of rating							
	REMOTE ON/OFF	Provided(RC open : ON, short between RC and +Vin : OFF)							
ISOLATION	INPUT-OUTPUT	DC1,500V 1minute, DC500V 50MΩ min (20±15℃)							
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-40 to +85℃, 20 - 95%RH (Non condensing), 3,000m (10,000feet) max							
	STORAGE TEMP.,HUMID.AND ALTITUDE	-40 to +100℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max (Refer to the Instruction Manual)							
	VIBRATION	10 - 55Hz, 49.0m/s^2 (5G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT	196.1m/s^2 (20G), 11ms, once each X, Y and Z axis							
SAFETY	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN60950-1							
OTHERS	CASE SIZE/WEIGHT	38.7×4.2×22.4mm [1.52×0.166×0.88 inches] (W×H×D) / 8g max							
	COOLING METHOD	Convection							

*1 At rated input(DC48V), rated load and 25℃

External view

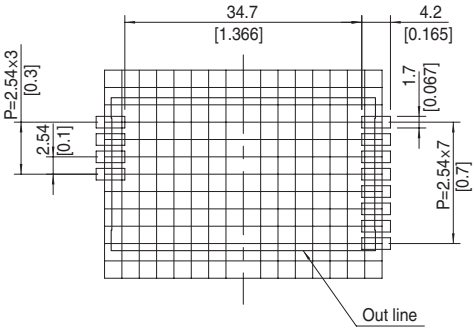






※Dimensions in mm,[ ]= inches
※Tolerance ±0.5 [±0.02]
※Weight:8g max
※Terminal thickness:0.3±0.1 [0.012]
Terminal material:copper alloy
Plating treatment of terminal
:Sn with Ni barreir

Recommended size for processing PCB
(TOP VIEW)



※Dimensions in: mm / [inch]

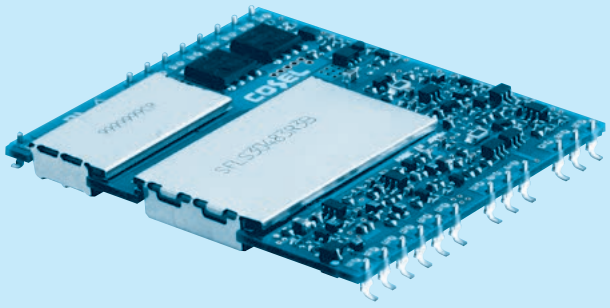
※Div.: 0.1inch

COSEL DC-DC Converters PCB Mount Type

SFLS30

Ordering information

SFL	S	30	48	3R3	B
①	②	③	④	⑤	⑧



①Series name
②Single output
③Output wattage
④Input voltage
48:DC36 - 76V
⑤Output voltage
⑧Mounting type
B :SMD

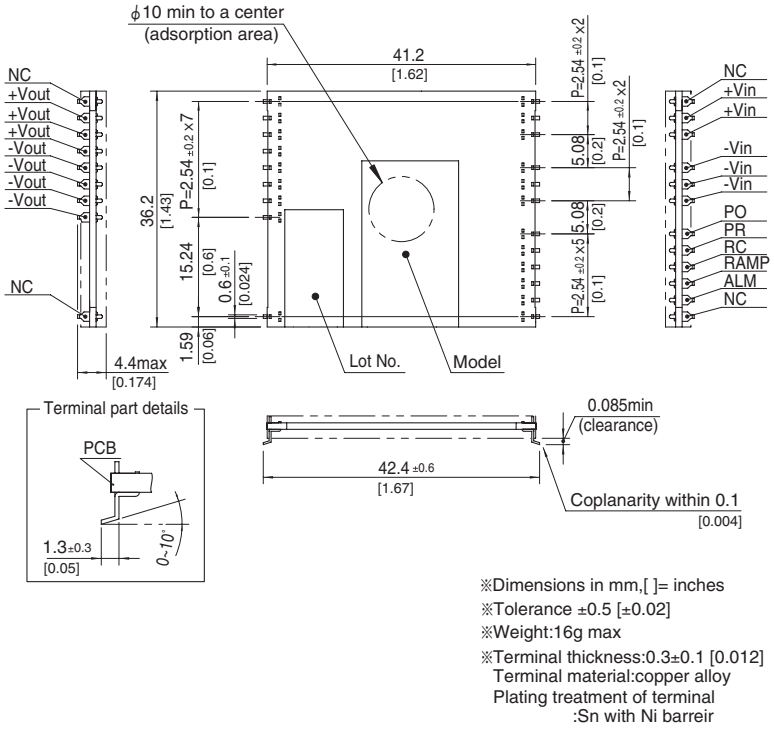
MODEL	SFLS30481R2	SFLS30481R5	SFLS30481R8	SFLS30482R5	SFLS30483R3	SFLS304805
MAX OUTPUT WATTAGE[W]	14.4	16.5	19.8	25.0	29.7	30.0
DC OUTPUT	1.2V 12A	1.5V 11A	1.8V 11A	2.5V 10A	3.3V 9A	5V 6A

SPECIFICATIONS

	MODEL	SFLS30481R2	SFLS30481R5	SFLS30481R8	SFLS30482R5	SFLS30483R3	SFLS304805
INPUT	VOLTAGE[V]	DC36 - 76					
	CURRENT[A] *1	0.36typ	0.40typ	0.47typ	0.58typ	0.68typ	0.69typ
	EFFICIENCY[%] *1	84typ	86typ	88typ	90typ	91typ	91typ
	START-UP VOLTAGE[V]	DC32 - 36					
	HYSTERESIS VOLTAGE[V]	DC2 min					
OUTPUT	VOLTAGE[V]	1.2	1.5	1.8	2.5	3.3	5
	CURRENT[A]	12	11	11	10	9	6
	VOLTAGE ACCURACY[%]	+5, -3					
	RIPPLE[mVp-p]	25max					
	RIPPLE NOISE[mVp-p]	50max					
	START-UP TIME[ms]	20 - 100max (DCIN 48V, Io=100%)					
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 103% of rating					
	OVERVOLTAGE PROTECTION	Works at 115 - 160% of rating		Works at 115 - 150% of rating			
	LOWVOLTAGE PROTECTION	Works at 93% max of rating					
	REMOTE ON/OFF	Provided(RC open : ON, short between RC and +Vin : OFF)					
ISOLATION	INPUT-OUTPUT	DC1,500V 1minute, DC500V 50MΩ min (20±15℃)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-40 to +85℃, 20 - 95%RH (Non condensing), 3,000m (10,000feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE	-40 to +100℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max (Refer to the Instruction Manual)					
	VIBRATION	10 - 55Hz, 49.0m/s^2 (5G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s^2 (20G), 11ms, once each X, Y and Z axis					
SAFETY	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN60950-1					
OTHERS	CASE SIZE/WEIGHT	41.2×4.4×36.2mm [1.62×0.174×1.43 inches] (W×H×D) / 16g max					
	COOLING METHOD	Convection					

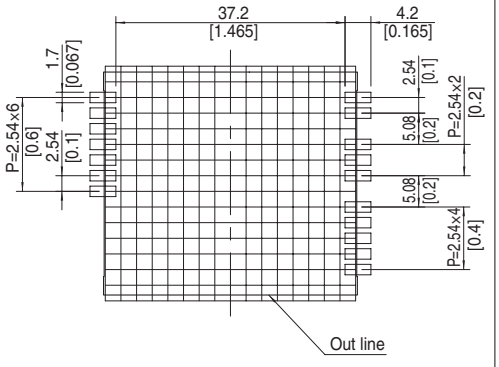
*1 At rated input(DC48V), rated load and 25℃

External view



※Dimensions in mm,[ ]= inches
※Tolerance ±0.5 [±0.02]
※Weight:16g max
※Terminal thickness:0.3±0.1 [0.012]
Terminal material:copper alloy
Plating treatment of terminal
:Sn with Ni barreir

Recommended size for processing PCB
(TOP VIEW)

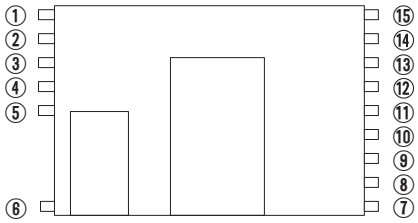


※Dimensions in: mm / [inch]

※Div.: 0.1inch

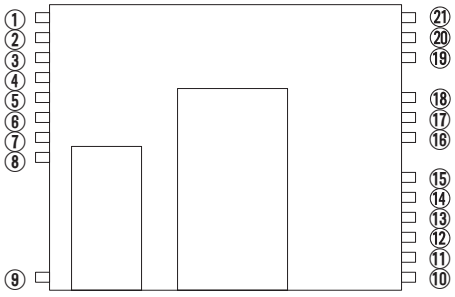
Pin Configuration

● SFLS10 / SFLS15



No.	Pin Name	Function
①	NC	Not connected / Adhesive dispensing
②,③	+Vout	+DC output
④,⑤	-Vout	-DC output
⑥	NC	Not connected / Adhesive dispensing
⑦	RAMP	Ramp-rate control
⑧	ALM	Alarm
⑨	RC	Remote ON/OFF
⑩	PO	Start in/out
⑪	PR	Power ready / Sequence control
⑫	NC	Not connected
⑬	+Vin	+DC input
⑭	-Vin	-DC input
⑮	NC	Not connected / Adhesive dispensing

● SFLS30



No.	Pin Name	Function
①	NC	Not connected / Adhesive dispensing
②,③,④	+Vout	+DC output
⑤,⑥,⑦,⑧	-Vout	-DC output
⑨,⑩	NC	Not connected / Adhesive dispensing
⑪	ALM	Alarm
⑫	RAMP	Ramp-rate control
⑬	RC	Remote ON/OFF
⑭	PR	Power ready / Sequence control
⑮	PO	Start in/out
⑯ , ⑰ , ⑱	-Vin	-DC input
⑲ , ⑳	+Vin	+DC input
㉑	NC	Not connected / Adhesive dispensing

Assembling and Installation Method

Automatic mounting

■SFLS series is designed to have a large flat area in the center of the top surface to serve as a pick up point for automated vacuum pick and place equipment.

■An excessively low bottom dead point of the suction nozzle imposes great force on the core during mounting, causing cracked core. So during mounting, take enough care.

Implementation · Mounting Method

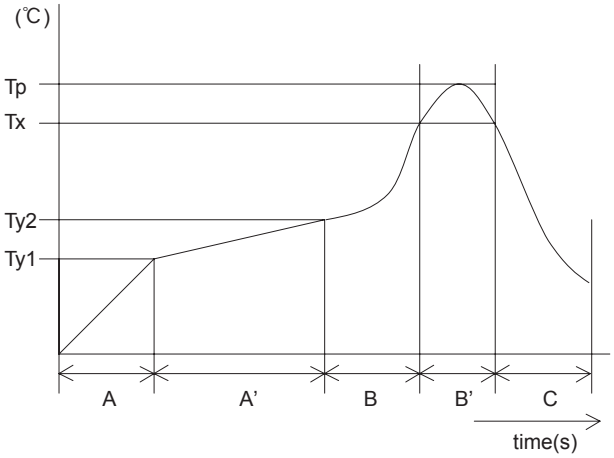
Soldering temperature

(1) Reflow soldering

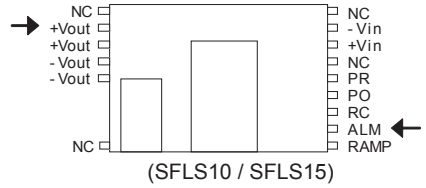
■Below and right figure show the conditions of reflow soldering.
Please verify the temperature of the ALM pin and +Vout pin satisfy to reflow condition.

■Improper reflow condition may degrade the reliability of the internal components.

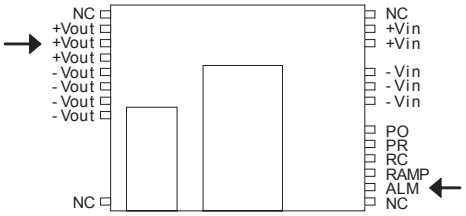
■While soldering, having vibration or impact on the unit should be avoided, because of solder melting.



A	1.0 - 5.0℃/ s
A'	Ty1 : 160±10℃ Ty2 : 180±10℃ Ty1 - Ty2 : 120s max
B	1.0 - 5.0℃/ s
B'	Tp : Max245℃ 10s max Tx : 220℃ or more : 70s max
C	1.0 - 5.0℃/ s



(SFLS10 / SFLS15)



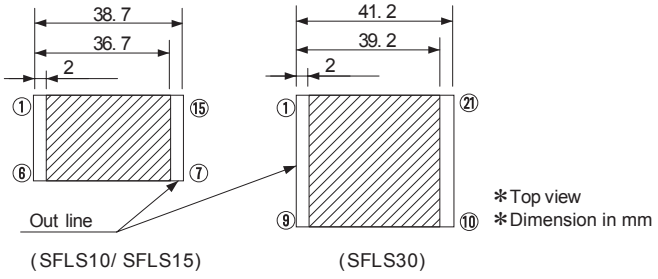
(SFLS30)

(2) Soldering iron

■340℃ to 360℃, less than 5 seconds.

Mounting method

■Avoid placing pattern layout in hatched area in right figure to insulate between pattern and power supply.



(SFLS10/ SFLS15) (SFLS30)

Stress to the product

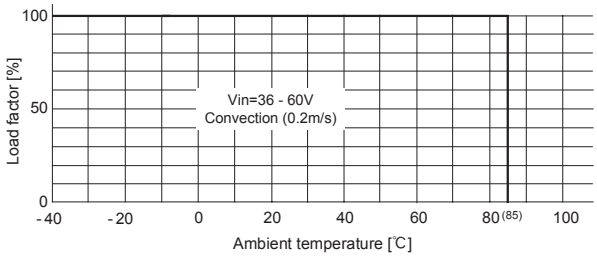
■SFLS series transformer core and choke coil core are attached by glue, and there is a cover over the core, which is attached by a clasp. There is a possibility that the core will be removed and power supply will be damaged when it took stress by the fall or some kind of stress.

Derating

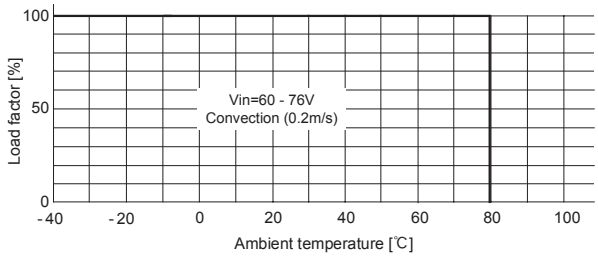
Ambient temperature derating curve

■It is necessary to note thermal fatigue life by power cycle. Please reduce the temperature fluctuation range as much as possible when the up and down of temperature are frequently generated.

① Vin=DC36V - 60V



② Vin=DC60V - 76V



Instruction Manuals

◆ Please see catalog and instructionmanual before you use.

Instruction Manuals	https://en.cosel.co.jp/product/powersupply/SFLS/
Before using our product	https://en.cosel.co.jp/technical/caution/index.html

SFLS

NOTICE

Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
SFLS10	Single ended forward converter	630 - 710	∗1	-	-	glass fabric base,epoxy resin		Multilayer	Yes	Yes
SFLS15	Single ended forward converter	630 - 710	∗1	-	-	glass fabric base,epoxy resin		Multilayer	Yes	Yes
SFLS30	Single ended forward converter	480 - 540	∗1	-	-	glass fabric base,epoxy resin		Multilayer	Yes	Yes

∗1 Refer to Specification.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Cosel:

SFLS10482R5B SFLS15485R2B SFLS30481R5B SFLS154805B SFLS15481R5B SFLS30481R2B SFLS15483R3B SFLS10481R8B SFLS154802B SFLS30483R3B SFLS104805B SFLS30482R5B SFLS15482R5B SFLS15481R2B SFLS10481R5B SFLS10483R3B SFLS304805B SFLS10481R2B SFLS154812B SFLS30481R8B SFLS15481R8B