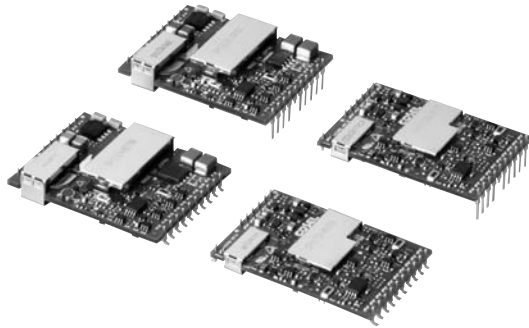


SFS/SFLS Series



- SMD & Through-hole Mounting Options
- High Efficiency - Up to 92%
- High Reliability
- Remote On/Off
- Parallel Operation
- Overcurrent & Overvoltage Protection
- Low Voltage Protection

Specification

Input

Input Voltage Range	• See tables
Input Current	• See tables
Start Up Voltage	• 16-18 V (18-36 V input range) 32-36 V (36-76 V input range)

Output

Output Voltage	• See tables
Minimum Load	• No minimum load required
Line Regulation	• 1%
Load Regulation	• 1%
Setpoint Accuracy	• $\pm 1\%$
Turn-on Time	• 20-200 ms (nom. V_{in} , max load)
Ripple & Noise	• 50 mV pk-pk ≤ 5 V, 150 mV pk-pk > 5 V
Overvoltage Protection	• 120-140% of V_{out} nom recycle input to reset
Overcurrent Protection	• 103% minimum of I_{out} nom. Recycle input to reset.
Short Circuit Protection	• Recycle input to reset
Low Voltage Protection	• ALM Pin will fall low if output drops to 90% of V_{nom} for 200 ms
Remote On/Off	• Short $+V_{in}$ to RC to switch module off.
Current Share	• Connect PO and ALM pins, up to 10 converters can be paralleled
Recommended Capacitive Load	• 1.2-5 V_{out} : 22-4700 μF , 10-15 V_{out} : 22-2200 μF

General

Efficiency	• See tables
Isolation	• SFS/SFLS models: 500 VDC Input to Output SFCs models: 500 VDC Input to Output, 500 VDC Input to Case, 500 VDC Output to Case
Switching Frequency	• SF(C)S 10-20 W : 570 - 670 kHz SF(C)S 30 W : 440 - 530 kHz SFLS 10-15 W : 630 - 710 kHz SFLS 30 W : 480 - 540 kHz
DC OK	• PR pin for SFLS only, open collector, TTL high - DC OK, can sink max 3 mA at 15 V
Alarm	• ALM pin, to monitor the normal/abnormal operation, if OVP/Low Voltage Protection are activated the ALM pin is connected to $-V_{in}$
Ramp-rate Control	• RAMP pin for SFLSXX only, by connecting external capacitor to $-V_{in}$ the ramp-rate of V_{out} can be controlled/reduced. Contact sales for details.
MTBF	• 600 kHrs per EIAJ RCR-9102

Environmental

Operating Temperature	• -40 °C to $+85$ °C for derating curves for convection cooling and forced air cooling, contact sales.
Cooling	• Convection-cooled
Operating Humidity	• 20-95% RH, non-condensing
Storage Temperature	• -40 °C to $+100$ °C
Storage Humidity	• 20-95% RH, non-condensing
Operating Altitude	• 3000 m
Shock	• 20 g 11ms once along each axis
Vibration	• 10-55 Hz, 5 g 3 minute period, 60 minutes along each axis

EMC & Safety

Emissions	• EN55022 level A conducted & radiated*
ESD Immunity	• EN61000-4-2, level 4 Perf Criteria A*
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A*
EFT/Burst	• EN61000-4-4, level 4 Perf Criteria A*
Surge	• EN61000-4-5, level 3 Perf Criteria A*
Safety Approvals	• EN60950-1, UL60950-1, C-UL (CSA60950-1)

* Additional filter required, contact sales for details.

Models and Ratings - 10 Watt

Input Voltage	Max Power	Output Voltage	Output Current	Input Current ⁽¹⁾	Efficiency ⁽¹⁾	Model Number ⁽⁴⁾
36-76 VDC	4.20 W	1.2 V	3500 mA	110 mA	80%	SFS10481R2B ⁽³⁾
	5.25 W	1.5 V	3500 mA	130 mA	82%	SFS10481R5B ⁽³⁾
	5.40 W	1.8 V	3000 mA	130 mA	84%	SFS10481R8B ⁽³⁾
	6.00 W	2.0 V	3000 mA	150 mA	85%	SFS104802B
	7.50 W	2.5 V	3000 mA	180 mA	86%	SFS10482R5B ⁽³⁾
	9.90 W	3.3 V	3000 mA	230 mA	88%	SFS10483R3B ⁽³⁾
	10.00 W	5.0 V	2000 mA	230 mA	89%	SFS104805B ⁽³⁾
	10.80 W	12.0 V	900 mA	260 mA	88%	SFS104812B
	10.50 W	15.0 V	700 mA	250 mA	88%	SFS104815B

Models and Ratings - 15 Watt

Input Voltage	Max Power	Output Voltage	Output Current	Input Current ⁽¹⁾	Efficiency ⁽¹⁾	Model Number ⁽⁴⁾
18-36 VDC	7.80 W	1.5 V	5200 mA	390 mA	83%	SFS15241R5B
	8.10 W	1.8 V	4500 mA	400 mA	85%	SFS15241R8B
	11.25 W	2.5 V	4500 mA	540 mA	87%	SFS15242R5B
	14.85 W	3.3 V	4500 mA	700 mA	89%	SFS15243R3B ⁽²⁾
	15.00 W	5.0 V	3000 mA	690 mA	90%	SFS152405B ⁽²⁾
	15.00 W	12.0 V	1250 mA	700 mA	89%	SFS152412B ⁽²⁾
	15.00 W	15.0 V	1000 mA	700 mA	89%	SFS152415B ⁽²⁾
36-76 VDC	6.24 W	1.2 V	5200 mA	160 mA	82%	SFS15481R2B ⁽³⁾
	7.80 W	1.5 V	5200 mA	200 mA	83%	SFS15481R5B ⁽³⁾
	8.10 W	1.8 V	4500 mA	200 mA	85%	SFS15481R8B ⁽³⁾
	9.00 W	2.0 V	4500 mA	220 mA	86%	SFS154802B ⁽³⁾
	11.25 W	2.5 V	4500 mA	270 mA	87%	SFS15482R5B ⁽³⁾
	14.85 W	3.3 V	4500 mA	350 mA	89%	SFS15483R3B ^(2,3)
	15.00 W	5.0 V	3000 mA	350 mA	90%	SFS154805B ^(2,3)
	15.60 W	5.2 V	3000 mA	370 mA	89%	SFLS15485R2 ⁽⁵⁾
	15.00 W	12.0 V	1250 mA	350 mA	89%	SFS154812B ^(2,3)
	15.00 W	15.0 V	1000 mA	350 mA	89%	SFS154815B ⁽²⁾

Models and Ratings - 20 Watt

Input Voltage	Max Power	Output Voltage	Output Current	Input Current ⁽¹⁾	Efficiency ⁽¹⁾	Model Number ⁽⁴⁾
36-76 VDC	13.50 W	1.5 V	9000 mA	330 mA	86%	SFS20481R5B
	14.40 W	1.8 V	8000 mA	350 mA	85%	SFS20481R8B
	17.50 W	2.5 V	7000 mA	410 mA	88%	SFS20482R5B
	19.80 W	3.3 V	6000 mA	460 mA	90%	SFS20483R3B
	20.00 W	5.0 V	4000 mA	460 mA	90%	SFS204805B

Models and Ratings - 30 Watt

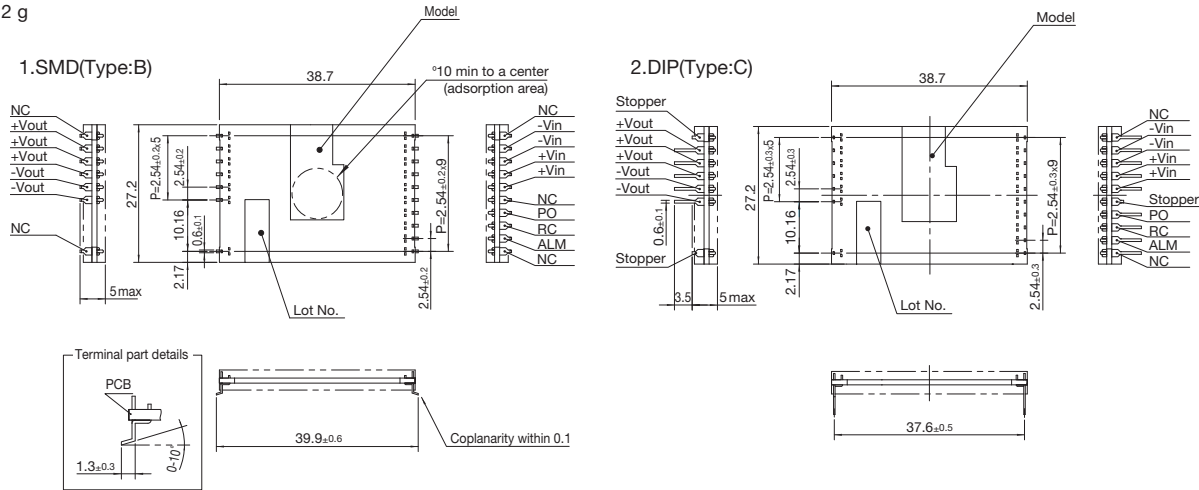
Input Voltage	Max Power	Output Voltage	Output Current	Input Current ⁽¹⁾	Efficiency ⁽¹⁾	Model Number ⁽⁴⁾
18-36 VDC	12.48 W	1.2 V	10400 mA	600 mA	86.5%	SFS30241R2B
	15.60 W	1.5 V	10400 mA	740 mA	87.5%	SFS30241R5B
	16.20 W	1.8 V	9000 mA	760 mA	89.0%	SFS30241R8B
	22.50 W	2.5 V	9000 mA	1040 mA	90.0%	SFS30242R5B
	29.70 W	3.3 V	9000 mA	1360 mA	91.0%	SFS30243R3B ⁽²⁾
	30.00 W	5.0 V	6000 mA	1360 mA	92.0%	SFS302405B ⁽²⁾
	30.00 W	12.0 V	2000 mA	1360 mA	92.0%	SFS302412B ⁽²⁾
36-76 VDC	30.00 W	15.0 V	2000 mA	1390 mA	90.0%	SFS302415B ⁽²⁾
	12.48 W	1.2 V	10400 mA	300 mA	86.0%	SFS30481R2B ⁽³⁾
	15.60 W	1.5 V	10400 mA	370 mA	87.5%	SFS30481R5B ⁽³⁾
	16.20 W	1.8 V	9000 mA	380 mA	89.0%	SFS30481R8B ⁽³⁾
	18.00 W	2.0 V	9000 mA	420 mA	89.0%	SFS304802B
	22.50 W	2.5 V	9000 mA	520 mA	91.0%	SFS30482R5B ⁽³⁾
	29.70 W	3.3 V	9000 mA	670 mA	92.0%	SFS30483R3B ^(2,3)
	30.00 W	5.0 V	6000 mA	680 mA	92.5%	SFS304805B ^(2,3)
	30.00 W	10.0 V	3000 mA	690 mA	91.0%	SFS304810B
	30.00 W	12.0 V	2500 mA	680 mA	92.0%	SFS304812B ⁽²⁾
30.00 W	15.0 V	2000 mA	680 mA	92.0%	SFS304815B ⁽²⁾	

Notes

- At rated input and full load.
- For covered version, insert 'C' in the model number e.g SFC15241R5.
- For low profile version with power ready and ramp-rate control, insert an 'L' in the model number e.g SFLS10481R5. (Not available with covered version).
- For DIP version, replace suffix 'B' with suffix 'C' in the part number e.g. SFS15241R5C. Not available for low profile models.
- Only available in low profile version.

Mechanical Details

SFS10/20
Weight: <12 g

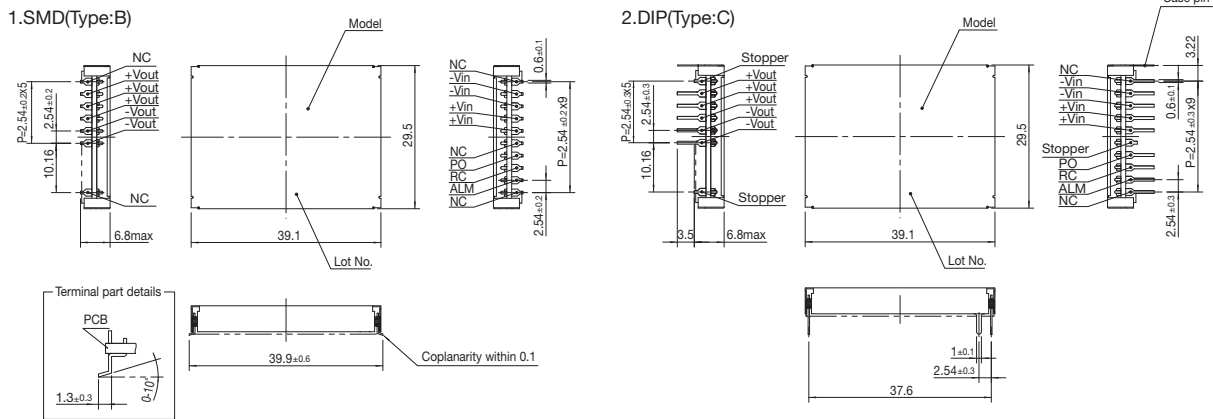


Notes

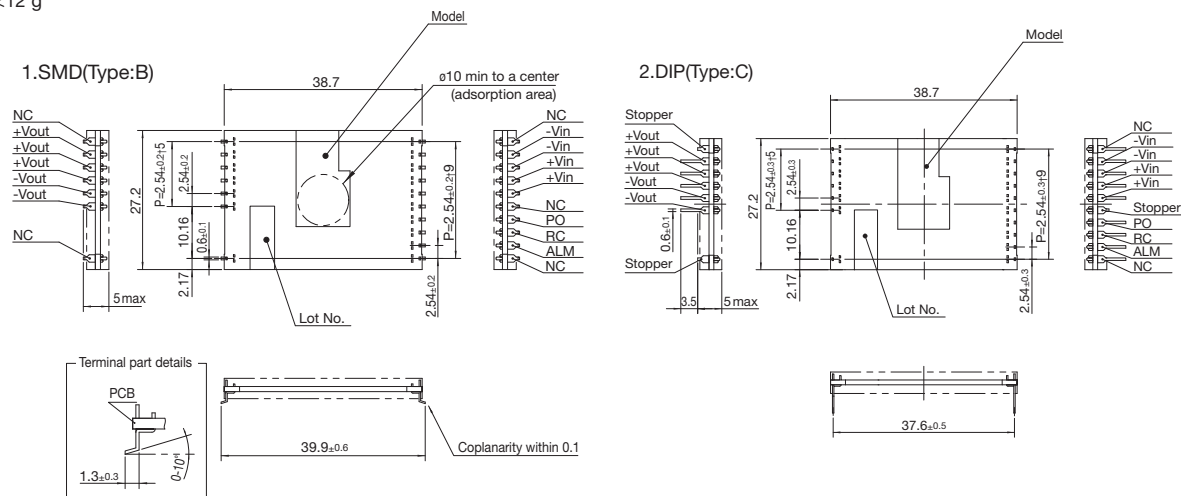
1. All measurements are in mm. Tolerance: ±0.5 mm

2. For SFLS10/15 mechanical details, contact sales.

SFCS15
Weight: <16 g



SFS15
Weight: <12 g



Notes

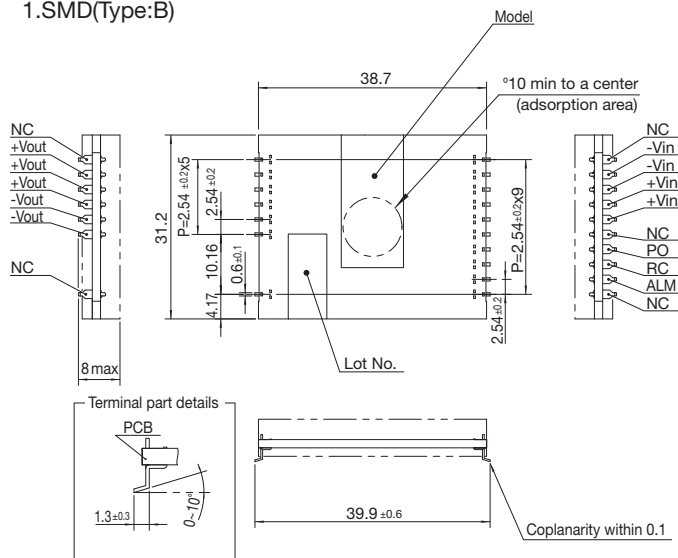
1. All measurements are in mm. Tolerance: ±0.5 mm
2. Terminal thickness: 0.6 ±0.1 mm

3. Case material: Brass

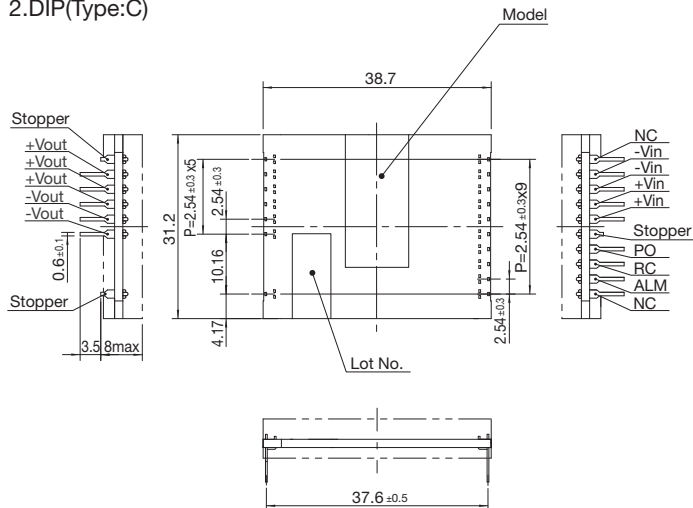
SFS30

Weight: <20 g

1.SMD(Type:B)



2.DIP(Type:C)



Notes

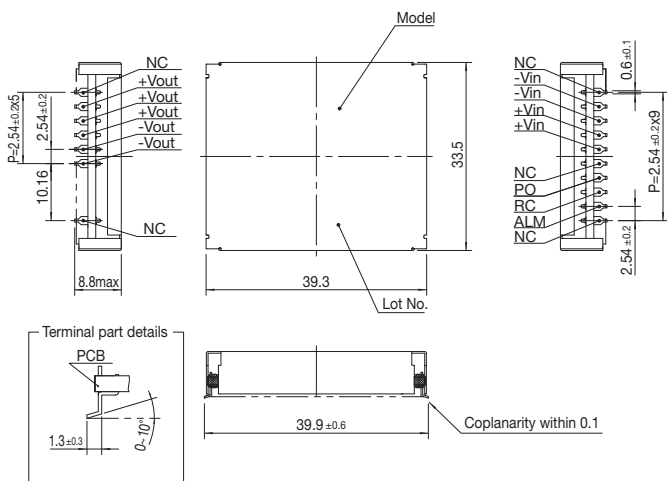
1. All measurements are in mm. Tolerance: ±0.5 mm

2. For SFS30 mechanical details, -contact sales.

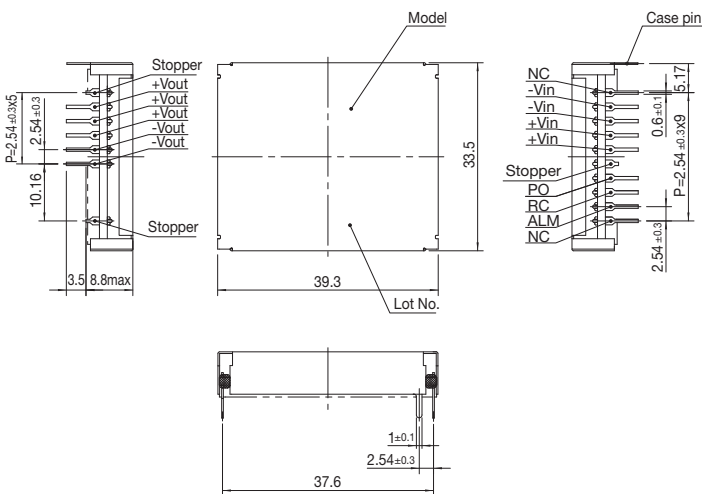
SFCS30

Weight: <25 g

1.SMD(Type:B)



2.DIP(Type:C)



Notes

1. All measurements are in mm. Tolerance: ±0.5 mm
2. Terminal thickness: 0.6 ±0.1 mm

3. Case material: Brass