



Features

- Industry-Standard **DOSA** pinout
- High efficiency
- Fixed switching frequency provides predictable EMI
- No life-span constrained Capacitor inside
- 2:1 / 4:1 Ultra-Wide input range
- Isolation 2250V Input-to-output
- Fully protected: **OVP, OTP, OCP** and **UVLO**
- Output voltage trim range of -10%, +10%
- Remote sense for the output voltage
- RoHS compliant

UVLO	OCP	OVP	OTP
Metal Case	ON/OFF Remote	PI Filter Built-in	2250V_{DC} Isolation

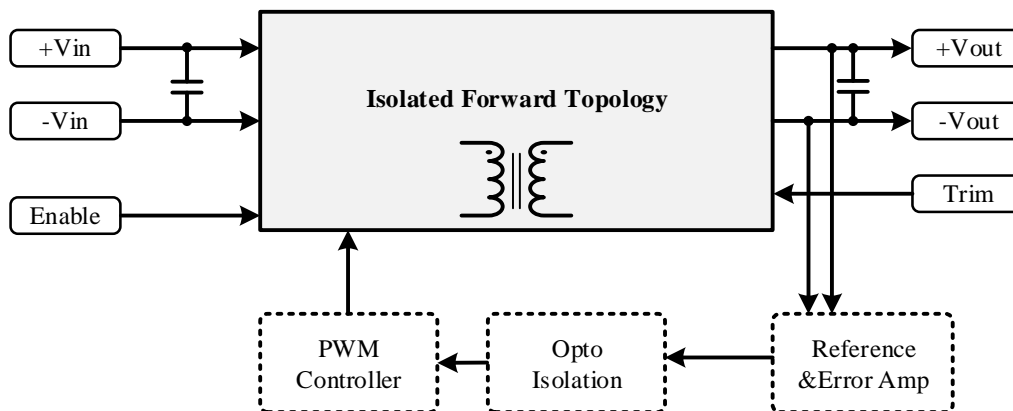


Applications

- CRailway System
- Transportation
- Telecommunication
- Industry Control System
- Embedded Systems
- Semiconductor Equipment

Description

SQB Quarter-Brick converter series are composed of Isolated, board-mountable, fixed switching frequency DC-DC converters that use synchronous rectification to achieve extremely high power conversion efficiency. These DC-DC converter modules use advanced power processing, control and packaging technologies to enhance the performance, flexibility, reliability and cost effectiveness of mature power components. Each module is six-sided metal case enclosed to provide protection from the harsh environments seen in many industrial and transportation applications.



SQB Series Block Diagram

MODEL NUMBER STRUCTURE
SQB 110 120 - S - P - B 100

Series Name	Input Voltage (VDC)	Output Voltage (VDC)	Output Quantity	Remote Control Option	Shape	Watt
Supreme series	018 : 9-36 024 : 18-36	050 : 5 120 : 12 150 : 15	S : Single V : Vicor pinout	P :Positive logic N :Negative logic	B : Base Plate S : No flange	100 125 150
Quarter Brick	110 : 40-160 300 : 200-400	240 : 24 280 : 28				

Model Selection Guide

Typical @ Ta=+25 °C under nominal line voltage conditions unless noted.

Model	Input		Output			Efficiency
	Voltage(V)		Voltage	Current	Power	
	Range	Nominal	(V)	(A)	(W)	Typ.(%)
SQB018120-S-P-B100	9-36	18	12	8.4	100	89
SQB018150-S-P-B100	9-36	18	15	6.67	100	89
SQB018180-S-P-B100	9-36	18	18	6.56	100	89
SQB018240-S-P-B100	9-36	18	24	4.17	100	89
SQB018280-S-P-B100	9-36	18	28	3.57	100	89
SQB024050-S-P-B100	18-36	24	5	20	100	90
SQB024120-S-P-B100	18-36	24	12	8.4	100	89
SQB024150-S-P-B100	18-36	24	15	6.67	100	89
SQB024180-S-P-B100	18-36	24	18	6.56	100	89
SQB024240-S-P-B100	18-36	24	24	4.17	100	89
SQB024280-S-P-B100	18-36	24	28	3.57	100	89
SQB024120-S-P-B120	18-36	24	12	10	120	89
SQB024150-S-P-B120	18-36	24	15	8	120	89
SQB024180-S-P-B120	18-36	24	18	6.67	120	89
SQB024240-S-P-B120	18-36	24	24	5	120	88
SQB024280-S-P-B120	18-36	24	28	4.29	120	88
SQB024120-S-P-B150	18-36	24	12	12.5	150	89
SQB024150-S-P-B150	18-36	24	15	10	150	89
SQB024180-S-P-B150	18-36	24	18	8.33	150	89
SQB024240-S-P-B150	18-36	24	24	6.25	150	88
SQB024280-S-P-B150	18-36	24	28	5.36	150	88
SQB110050-S-P-B100	40-160	110	5	20	100	89
SQB110120-S-P-B100	40-160	110	12	8.4	100	89
SQB110150-S-P-B100	40-160	110	15	6.67	100	89
SQB110180-S-P-B100	40-160	110	18	6.56	100	89
SQB110240-S-P-B100	40-160	110	24	4.17	100	89
SQB110120-S-P-B120	40-160	110	12	10	120	89
SQB110150-S-P-B120	40-160	110	15	8	120	89
SQB110180-S-P-B120	40-160	110	18	6.67	120	89
SQB110240-S-P-B120	40-160	110	24	5	120	89

※ Modification or customer designs are available. Please contact us for details.

Model Selection Guide

Typical @ Ta=+25 °C under nominal line voltage conditions unless noted.

Model	Input		Output			Efficiency
	Voltage(V)		Voltage	Current	Power	
	Range	Nominal	(V)	(A)	(W)	Typ.(%)
SQB110120-S-P-B150	40-160	110	12	12.5	150	89
SQB110150-S-P-B150	40-160	110	15	10	150	89
SQB110180-S-P-B150	40-160	110	18	8.33	150	89
SQB110240-S-P-B150	40-160	110	24	6.25	150	89
SQB300120-S-P-B100	200-400	300	12	8.4	100	89
SQB300240-S-P-B100	200-400	300	24	4.17	100	89
SQB300120-S-P-B120	200-400	300	12	10	120	88
SQB300240-S-P-B120	200-400	300	24	5	120	88
SQB300120-S-P-B150	200-400	300	12	12.5	150	88
SQB300240-S-P-B150	200-400	300	24	6.25	150	88

※ Modification or customer designs are available. Please contact us for details.

Electrical Specifications

Input Specifications

Typical @ Ta=+25 °C under nominal line voltage conditions unless noted.

Parameter	Notes and Conditions	Min.	Typ.	Max.	Unit
Transient Input Voltage Ranges	SQB018 models(100ms Max) SQB024 models(100ms Max) SQB110 models(100ms Max) SQB300 models (100ms Max)			50 50 180 450	VDC
Operating Input Voltage Ranges	SQB018 models SQB024 models SQB110 models SQB300 models	9 18 40 200	18 24 110 300	36 36 160 400	VDC
Under-Voltage Lockout Start up Voltage	SQB018 models SQB024 models SQB110 models SQB300 models			9 18 40 200	VDC
Under-Voltage Lockout Shutdown Voltage	SQB018 models SQB024 models SQB110 models SQB300 models		8 17 38 195		VDC
Input Current	See model selection guide, Standby mode (OFF,UVLO)5mA				
Enable Function Input	Positive logic	ON OFF	Open or 8 ~ 20 Short or 0 ~ 1.2		VDC
	Negative logic	ON OFF	Short or 0 ~ 1.2 Open or 8 ~ 20		VDC

Output Specifications

Parameter	Notes and Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	V _{NOM} 50% Load			±1.5	%
Line Regulation	Low Line to High Line			±0.3	%
Load Regulation	10% to 100% Load			±0.5	%
Output Ripple And Noise Voltage	Bandwidth 20MHz and with 1uF MLCC Output Capacitor		1.5		%V _{pk-pk}
Temperature Coefficient				±0.04	% / °C
Transient Recovery Time	25% load step change		800		µSec.
Transient Peak Deviation	ΔI _o /Δt=2.5A/us		±2		%V _o
Start-Up Time	When use Enable Function		20		mSec.
Trimming Output Voltage	V _{NOM} 10% Load		±10		%
Over Voltage Protection	V _{NOM} 10% Load		120		%
Output Power Protection	V _{NOM}		120		%

General Specifications

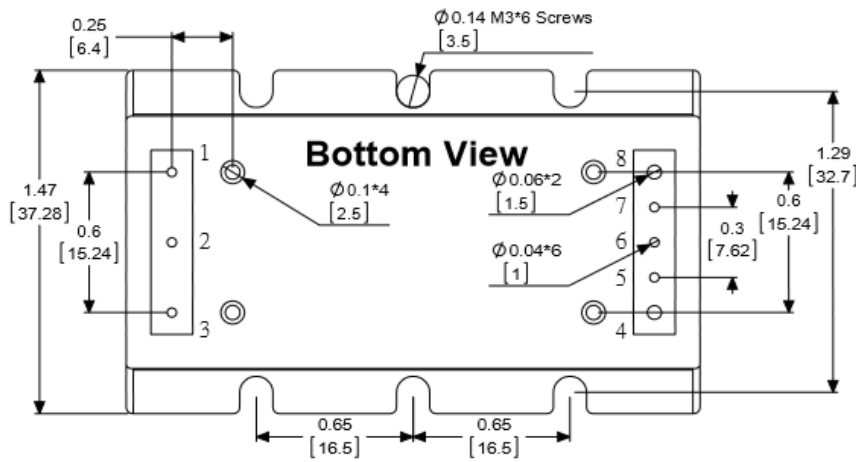
Parameter	Notes and Conditions	Min.	Typ.	Max.	Unit
Switching Frequency	V _{NOM}	150		330	kHz
Storage Temperature Range	All models	-60		125	°C
Operating Case Temperature	All models	-45		100	°C
Over temperature Protection	All models, Auto. Recovery		110		
Isolation Voltage Input to Output	All models, 1 Minute	2250			VDC
Isolation Resistance Input to Output	All models, 500VDC, At 70%RH	100			MΩ
Isolation Capacitance Input to Output	All models		1500		pF
Humidity (non condensing)	All models			95	%
Calculated MTBF	BellCore-TR-332@ 50°C G.B		1.2		M HR
Thermal Shock	Environmental Engineering Experimental Tests		MIL-STD-810F		
Vibration			MIL-STD-810F		
Drop			MIL-STD-810F		
Weight			59		g (oz.)
Dimensions		1.47" x 2.38" x 0.55" (37.3 x 60.4 x 14.2mm) 1.08" x 2.38" x 0.55" (27.4 x 60.4 x 14.2mm)			
Case Material	Aluminum				
Potting Material	Silicone				

It is recommended to protect the input by fuses or other protection devices.

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Mechanical Dimensions & Pin Assignments

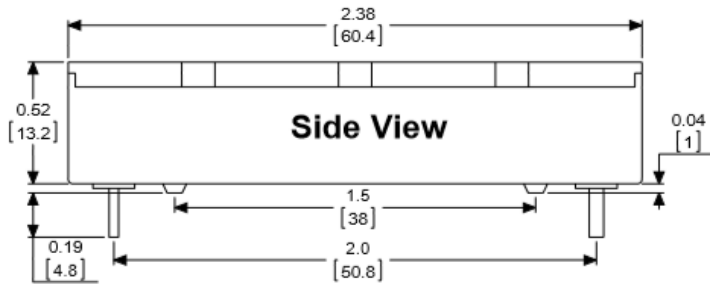
Suffix – B (Base Plate with DOSA pinout)



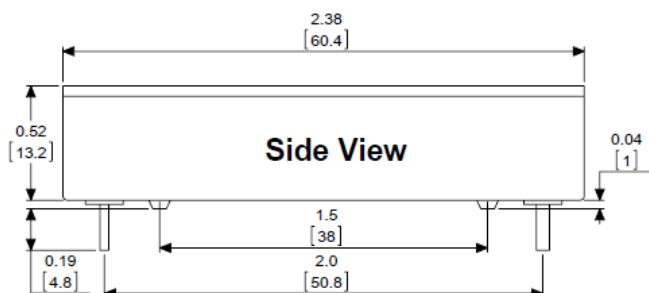
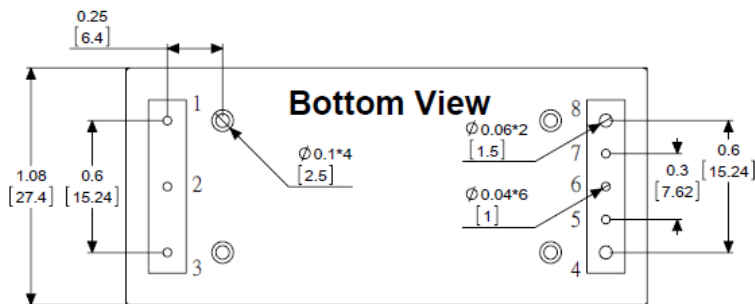
Pin#	Single
1	-Vin
2	Enable
3	+Vin
4	+Vout
5	+Sense
6	Trim
7	-Sense
8	-Vout

Note:

Pins Material: Copper alloy
 Pins Plating: Gold
 All dimension in inch[mm]
 Tolerance: .XX±0.02[.X±0.5]



Suffix – S (No Flange Base Plate with DOSA pinout)



Standards Compliance

Parameter	Standard	Test Conditions	Performance Criteria
Environmental Compliance	Reach; RoHS		PASS
EMI	EN55022		Class A/ Class B
ESD	EN61000-4-2	±4 kV Air Discharge ±4 kV Contact Discharge	Crit. A
Radiated Immunity	EN61000-4-3	Level 2, 3 V/m	Crit. A
Fast Transient	EN61000-4-4	±2 kV Applied	Crit. A
Surge	EN61000-4-5	±2 kV Applied	Crit. A
Conducted Immunity	EN61000-4-6	Level 2, 3 V rms	Crit. A

Modules could meet EN55022 Class A and Class B standard with external components.

Characteristic Curves

Testing conditions are at typical input, Ta=+25°C,full load (horizontal mount) Unless otherwise indicated

Efficiency Curves

