

Current sharing module



Patent Protection RoHS



FEATURES

- Maximum current automatic current sharing mode
- Wide input voltage range: 12-54V
- High current sharing accuracy
- 100% domestic components
- Operating ambient temperature range: -40°C to +105°C

The FB-1254YMDG is specially designed for applications that require multi-module redundant current sharing in power systems. When a single power supply fails, it can be automatically disconnected without affecting the work of other modules, this product is suitable for occasions of redundant applications, parallel power-up, etc.

Note: The maximum current automatic current sharing mode means that among n parallel modules, the module with the largest output current will automatically become the master module, and the other modules are slave modules. Their error voltages are set in turn to correct the uneven distribution of load current.

Selection Guide

Certification	Part No.	Input Voltage (VDC)		Current accuracy(%)	Voltage accuracy(%)		Min. parallelable number
		Nominal (Range)	Max. ^①	Full load	Output voltage <24V	Output voltage ≥24V	
--	FB-1254YMDG	48 (12-54)	64	±5	±8	±5	4

Notes:

①Exceeding the maximum input voltage may cause permanent damage.

Input Specifications

Part No.	Supporting Test Module* parallelable number	Input Voltage (VDC)			Output Voltage (VDC)	Output Current (A)	
		Min.	Typ.	Max.	Rated value	Max.	Min.
FB-1254YMD G	URF1D12FB-400WR3*4	66	110	160	12	100	0
	URF1D15FB-400WR3*4				15	80	0
	URF1D24FB-400WR3*4				24	50	0
	URF1D28FB-400WR3*4				28	42.85	0
	URF1D48FB-400WR3*4				48	25	0
	URF1D54FB-400WR3*4				54	22.22	0
	URF1D12HB-250W(H)R3*4	40	110	160	12	62.5	0
	URF1D15HB-250W(H)R3*4				15	50	0
	URF1D24HB-250W(H)R3*4				24	31.25	0
	URF1D48HB-250W(H)R3*4				48	15.62	0
	URF1D54HB-250W(H)R3*4				54	13.88	0
	URF1D12QB-100W(H)R3*4	43	110	160	12	25	0
	URF1D15QB-100W(H)R3*4				15	20	0
	URF1D24QB-100W(H)R3*4				24	12.5	0
	URF1D48QB-100W(H)R3*4				48	6.25	0
	URF4812QB-200W(F/H)R3*4	18	48	75	12	50	0
	URF4815QB-200W(F/H)R3*4				15	40	0
	URF4824QB-200W(F/H)R3*4				24	25.2	0
	URF4836QB-200W(F/H)R3*4				36	16.68	0
	URF4842QB-200W(F/H)R3*4				42.5	15	0

	URF4848QB-200W(F/H)R3*4	18	48	75	48	12.6	0
	URF2412QB-100W(F/H)R3*4	9	24	36	12	25	0
	URF2415QB-100W(F/H)R3*4				15	20	0
	URF2424QB-100W(F/H)R3*4				24	12.5	0
	URF2428QB-100W(F/H)R3*4				28	10.8	0
	URF2448QB-100W(F/H)R3*4				48	6.25	0
	UWTH1D12QB-100W(H/F)R3*4	14	110	160	12	25	0
	UWTH1D15QB-100W(H/F)R3*4				15	20	0
	UWTH1D24QB-100W(H/F)R3*4				24	12.5	0
	UWTH1D28QB-100W(H/F)R3*4				28	10.71	0
	UWTH1D48QB-100W(H/F)R3*4				48	6.25	0
	UWTH1D54QB-100W(H/F)R3*4				54	5.55	0

Absolute Maximum Ratings

Pin	Functions	Description	Min.	Typ.	Max.	Unit
1	+Vo	Converter positive output	-0.3	--	64	VDC
2	SENSE+	Output voltage remote compensation positive terminal	--	--	+Vo	
3	SENSE-	Output voltage remote compensation negative terminal	--	0	--	
4,5	VCS+,VCS-	Current sampling signal	-0.3	--	12	
6	LS	Load sharing bus	-0.3	--	12	

Recommended Operating Conditions

Pin	Functions	Description	Min.	Typ.	Max.	Unit
1	+Vo	Converter positive output	12	--	54	VDC
4,5	VCS+,VCS-	Current sampling signal	0.05	--	0.45	

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature	/	-40	--	+105	°C
Storage Temperature	/	-40	--	+125	
Storage Humidity	Non-condensing	10	--	95	%RH
Cooling Test	/	Free air convection (20LFM)			
Shock and Vibration Test	/	IEC/EN61373-Category 1, Grade B			

Mechanical Specifications

Case Material	Aluminum alloy
Dimensions	25.40 x 25.40 x 11.70 mm
Weight	9.3g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Immunity	Test Method	Standard	Level	Criteria
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV Air ±6KV	perf. Criteria A
	RS	IEC/EN61000-4-3	20V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A

Note: In addition to ESD, other tests shall be conducted in cooperation with the supporting test module and the periphery of the supporting test module.

Design Reference

1. Typical application

Fig. 1 is a typical application wiring diagram.

Fig. 2 shows the application wiring diagram of the module in the 48V 8.3A 400W actual parallel current sharing circuit, in which recommended peripheral device parameters are table 1.

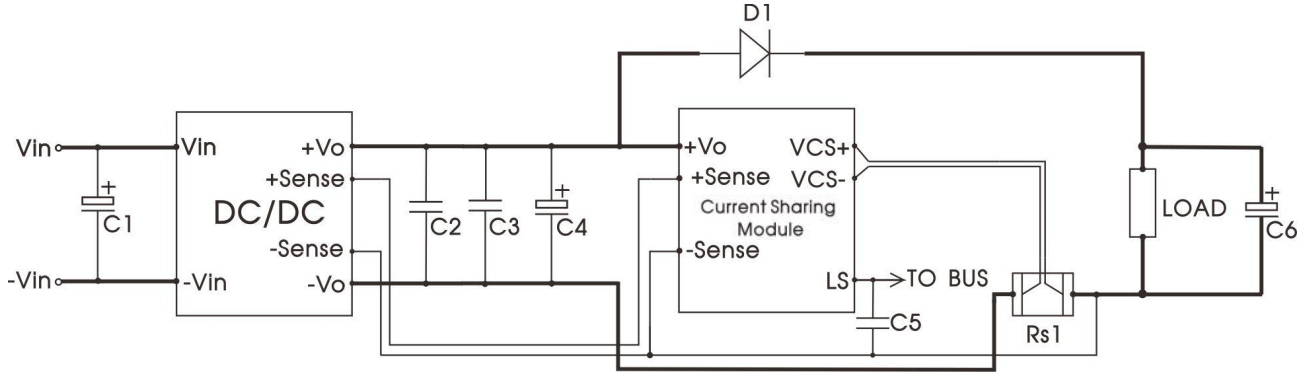


Fig. 1

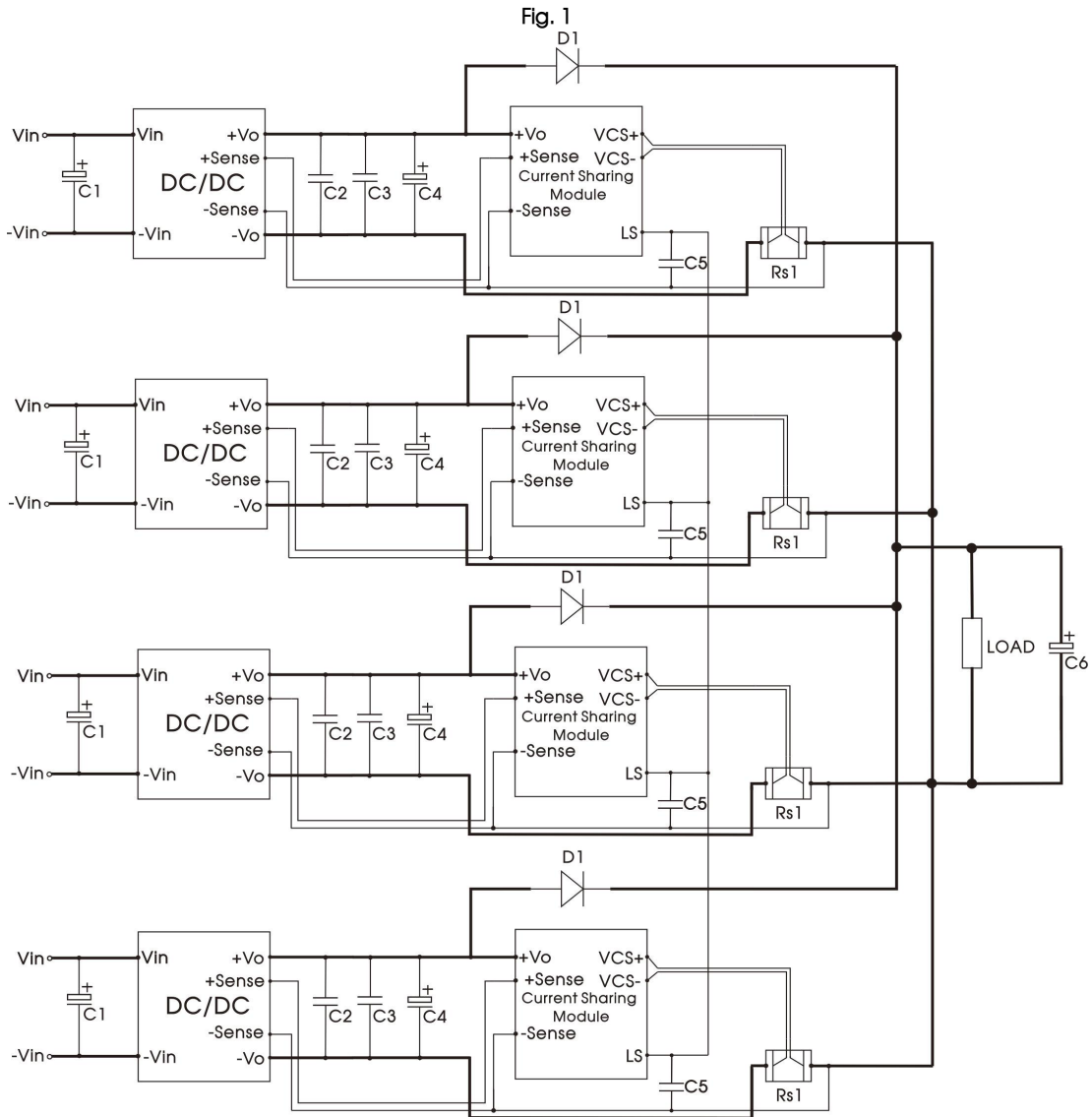


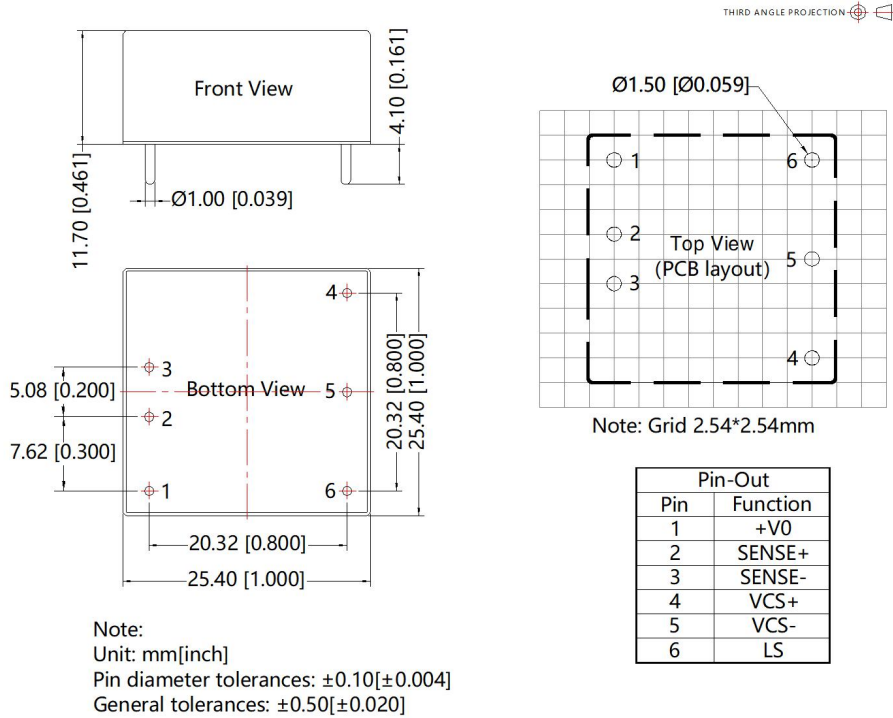
Fig. 2

Table 1: recommended component parameter

Components	Specification	Description
C1A/C1B/C1C/C1D	100uF	250V
C2A/C2B/C3C/C4D	1uF	100V
C3A/C3B/C3C/C3D	10uF	63V
C4A/C4B/C4C/C4D	220uF	63V
C5A/C5B/C5C/C5D	1nF	25V
D1A/D1B/D1C/D1D	(60V 15A)●4	4 in parallel (consider heat dissipation)
Rs1A/Rs1B/Rs1C/Rs1D	10mΩ (±1%)	2W/2512
C6	330uF	63V

Note : The route of the bold part in the note diagram shall be as short and wide as possible

Dimensions and Recommended Layout



Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Horizontal Packaging Bag Number : 58210003;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

Mornsun Guangzhou Science & Technology Co., Ltd.

Address: No. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Huangpu District, Guangzhou, P. R. China
Tel: 86-20-38601850 Fax: 86-20-38601272 E-mail: info@mornsun.cn www.mornsun-power.com