

DC-DC module power supply specialized for SiC driver



Continuous Short Circuit Protection



Patent Protection **UL** **us**
UL60950-1

CE CB Report **RoHS**
EN60950-1

FEATURES

- High efficiency up to 82%
- SIP package
- I/O isolation test voltage: 3.5kVAC/ 6kVDC
- Ultra-low isolation capacitance
- Operating ambient temperature range: -40°C to +105°C
- Continuous short-circuit protection
- Industry standard pin-out

QAxCx is DC-DC module power supply designed for SiC driver requiring two sets of isolation power supply. The mode of common ground outputs is adopted internally for better energy provision of SiC turn-on and turn-off. Output short-circuit protection and self-recovery capabilities are also provided. General application includes:

1. Universal converter
2. AC servo drive system
3. Electric welding machine
4. Uninterruptible power supply (UPS)

Selection Guide

Certification	Part No.	Input Voltage (VDC)	Output		Efficiency at Full Load (%) Min./Typ	Capacitive Load* (μF) Max.
		Nominal (Range)	Voltage (VDC)+Vo/-Vo	Current (mA)+Io/-Io		
UL/EN/IEC	QA01C	15 (13.5-16.5)	+20/-4	+100/-100	76/80	220
--	QA01C-18	15 (13.5-16.5)	+18/-3	+100/-100	76/79	220
--	QA051C	5 (4.5-5.5)	+20/-5	+80/-40	75/79	100
--	QA151C	15 (13.5-16.5)	+20/-5	+80/-40	76/78	220
--	QA121C2	12 (10.8-13.2)	+15/-3.5	+111/-111	77/81	220
--	QA121C-20	12 (10.8-13.2)	+20/-5	+100/-100	77/79	220
--	QA151C3	15 (13.5-16.5)	+15/-4	+100/-100	77/82	220
--	QA1201C-20	12 (10.8-13.2)	+20/-4	+100/-100	79/80	220
--	QA2401C-20	24 (21.6-26.4)	+20/-4	+100/-100	75/80	220

Note:*The specified maximum capacitive load for positive and negative output is identical.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	Nominal voltage input	QA01C	--	193/16	--	mA
		QA01C-18		177/16	185/30	
		QA051C		456/53	--	
		QA151C		150/20	160/30	
		QA121C2		210/15	--	
		QA121C-20		260/20		
		QA151C3		151/15		
		QA1201C-20		240/20		
		QA2401C-20		125/13		

Surge Voltage (1sec. max.)		QA01C	-0.7	-	21	VDC
		QA01C-18			21	
		QA051C			9	
		QA151C			21	
		QA121C2			18	
		QA121C-20			18	
		QA151C3			21	
		QA1201C-20			18	
		QA2401C-20			30	
Input Filter		Capacitance filter				
Hot Plug		Unavailable				

Output Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit
Voltage Accuracy	Nominal voltage input (The output regulation curve only take QA01C as an example, see Fig.1 and Fig.2)	QA01C	Light Load +Vo	+2	+4	+6	%
			Load -Vo	+5	+10	+15	
		QA01C-18	Full Load +Vo	-4	-1.5	+1	
			Load -Vo	-4	+0.5	+5.5	
		QA051C	Light Load +Vo	0	+4	+9	
			Load -Vo	+6	+12	+20	
		QA151C	Full Load +Vo	-7	-3	+2	
			Load -Vo	-5	0	+7	
		QA121C2	Light Load +Vo	+4	+8	+12	
			Load -Vo	+6	+12	+18	
		QA1201C-20	Full Load +Vo	-3	+0.5	+4	
			Load -Vo	+1	+4	+8	
		QA2401C-20	Light Load +Vo	-0.5	+1.5	+3.5	
			Load -Vo	0	+3	+6	
		QA151C3	Full Load +Vo	-5	-3	-1	
			Load -Vo	-5	-2	1	
		QA01C	Light Load +Vo	0	+7	+15	
			Load -Vo	0	+15	+30	
		QA01C-18	Full Load +Vo	-4	0	+5	
			Load -Vo	-5	+5	+15	
		QA051C	Light Load +Vo	+5.5	+8	+10.5	
			Load -Vo	+10	+12.5	+15	
		QA151C	Full Load +Vo	-2	0	+2	
			Load -Vo	+1	+3	+5	
QA121C-20	Light Load +Vo	+2	+6	+10			
	Load -Vo	0	+10	+18			
QA1201C-20	Full Load +Vo	-2	0	+2			
	Load -Vo	-5	0	+5			
QA2401C-20	Light Load +Vo	+6	+8	+10			
	Load -Vo	+5.5	+10.5	+15.5			
QA01C	Full Load +Vo	-2	0	+2			
	Load -Vo	-7.5	-2.5	+2.5			
QA01C-18	Light Load +Vo	+6.5	+8	+10.5			
	Load -Vo	+5.5	+13	+20.5			
QA051C	Full Load +Vo	-2.5	0	+2.5			
	Load -Vo	-7.5	0	+7.5			
Linear Regulation	Input voltage change: ±10%	QA01C	-	±1.1	±1.3	%/%	
		QA01C-18		±1.1	±1.3		
		QA051C		±1.4	±2		
		QA151C		±1.1	±1.3		
		QA121C2		±1.1	±1.2		
		QA121C-20		--	±1.5		
		QA151C3		±1.1	±1.3		
		QA1201C-20		±1.5	±2		
Load Regulation	10% to 100% load	+Vo	QA01C	7	9	%	
			QA01C-18	6	10		

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