



**POWER MATE
TECHNOLOGY CO.,LTD.**

QEB50 SERIES Single output



**UL E193009
TUV R50020744
CB JPTUV-5363
CE MARK**

- SINGLE OUTPUT UP TO 20A
- INDUSTRY STANDARD FOOTPRINT
- NO MINIMUM LOAD
- ADJUSTABLE OUTPUT VOLTAGE
- UNDER-VOLTAGE LOCKOUT
- HIGH EFFICIENCY UP TO 91%
- COMPACT 2.28 X 1.45 X 0.50 INCH PACKAGE
- FIXED SWITCHING FREQUENCY

QEB50 single output DC/DC converters provide up to 50 watts of output power in an industry standard quarter-brick package and footprint. These units are specifically designed to meet the power needs of low-voltage silicon. All models feature a wide input range, trimmable output voltage and a 20A current rating. Remote sense and remote on/off facilities are included as standard, and the converters are comprehensively protected against over-current, over-voltage and over-temperature conditions. The QEB50 converters are especially suited to telecom, networking and industrial application.

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS

Output power		50 Watts max
Voltage accuracy	Full load and nominal Vin	± 1.5%
Voltage adjustability	(Note1)	+ 10% , -20%
Minimum load		None
Line regulation	LL to HL at FL	±0.2%
Load regulation	No load to Full load	See table
Remote Sense		10% of Vout
Ripple and noise	20MHz bandwidth (Measured with a 1uF M/C and a 10uF T/C)	100mVp-p
Temperature coefficient		±0.02% / °C, max
Transient response recovery time	25% load step change	200uS
Over voltage protection threshold(Non-latching Hiccup)		120% Vout max
Over Current Protection threshold		110% ~ 140% of Iout Rated
Short circuit protection		Hiccup, automatic recovery

INPUT SPECIFICATIONS

Input voltage range	48V nominal input	36 – 75VDC
Under voltage lockout	Power up	34V typ.
	Power down	32V typ.
Input filter (Note 2)		L-C type
Input surge voltage 100mS max		100VDC
Start up time	Nominal Vin and constant resistor load	Power up 25mS typ
		Remote ON/OFF 25mS typ
Remote ON/OFF (Note 3)		I _{ON/OFF} = 1mA max
(Negative logic)	DC-DC ON	Short or 0V < Vr < 1.2V
	DC-DC OFF	Open or 3.5V < Vr < 15V
(Positive logic)	DC-DC ON	Open or 3.5V < Vr < 15V
	DC-DC OFF	Short or 0V < Vr < 1.2V

GENERAL SPECIFICATIONS

Efficiency		See table
Isolation voltage	Input to Output	1600VDC,min
	Input to Case	1000VDC,min
	Output to Case	1000VDC,min
Isolation resistance		10 ⁷ ohms, min
Isolation capacitance		2500 pF, max
Switching frequency		270 KHz, typ
Approvals and standard		IEC60950, UL60950, EN60950
Case material		Aluminum base plate
Weight (approx)		42g (1.46 oz)
MTBF	Bellcore TR-NWT-000332, Tc=40 °C , Io=80%,max	2.5 x 10 ⁶ hrs

ENVIRONMENTAL SPECIFICATIONS

Operating base-plate temperature range (Note 4)	-40°C to +100°C
Over temperature protection	110°C, max
Storage temperature range	-55°C to +125°C
Thermal shock	MIL-STD-810D
Vibration	10~55Hz, 2G, 3minutes period, 30minutes along X,Y and Z
Humidity , Max , Non-Condensing	95%

EMC CHARACTERISTICS

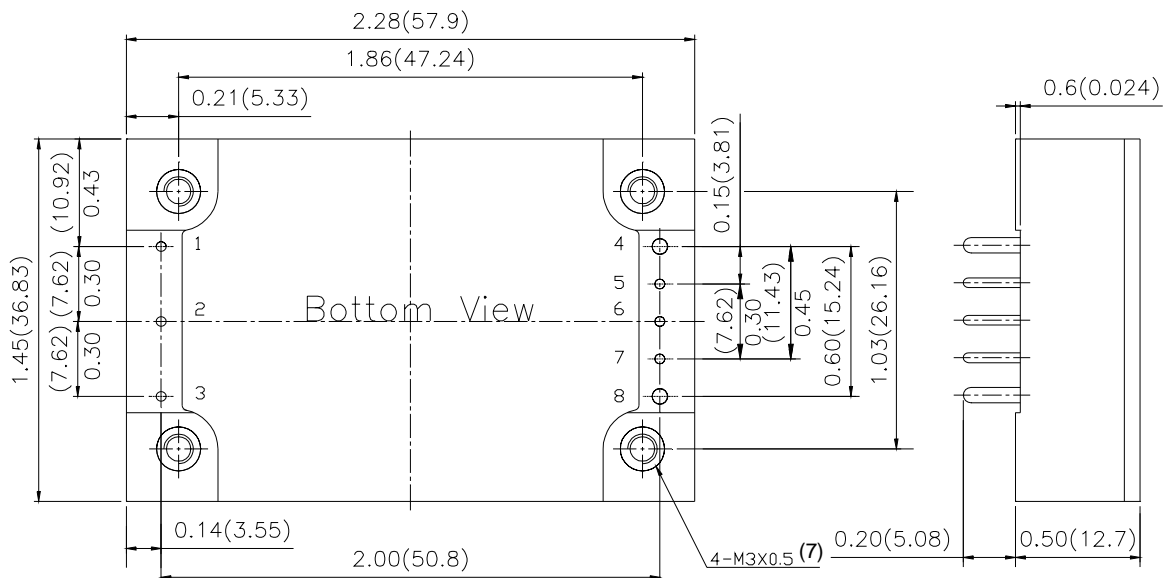
Conducted emissions	EN55022 (Note 5)	Level A
	EN55022 (Note 5)	Level B
Radiated emissions	EN55022	Level A
ESD	EN61000-4-2	Perf. Criteria2
Radiated immunity	EN61000-4-3	Perf. Criteria2
Fast transient	EN61000-4-4	Perf. Criteria2
Surge	EN61000-4-5	Perf. Criteria2
Conducted immunity	EN61000-4-6	Perf. Criteria2



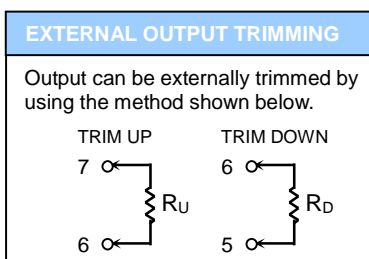
Model Number	Input Range	Output Voltage	Output Current	Eff ⁽⁶⁾ (%)	Load regulation
QEB50-48S1P8	36 – 75 VDC	1.8 VDC	20A	87	5.4mV
QEB50-48S2P5	36 – 75 VDC	2.5 VDC	20A	88	7.5mV
QEB50-48S3P3	36 – 75 VDC	3.3 VDC	15A	90	10mV
QEB50-48S05	36 – 75 VDC	5 VDC	10A	91	15mV

Note

- Maximum output deviation is 10% inclusive of trim. If remote sense is not being used, the +V sense should be connected to its corresponding +OUTPUT and likewise the –sense should be connected to its corresponding –OUTPUT.
- An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current for 48V models. Power mate suggest: Nippon chemi-con KMF series, 220µF/100V, ESR 90mΩ.
- The negative / positive logic and pin length are optional (see table). The pin voltage is referenced to negative input.
- Heat sink is optional and P/N : 7G-0029 , 7G-0030 , 7G-0031 , 7G-0032.
- The QEB50 meets level A and level B conducted emissions only with external components connected before the input pin to the converter.
- Typical value at nominal input voltage and full load
- BASEPLATE GROUNDING : Base-plate should be grounded at one of the four screw bolts prior to operation.
- The converter is provided by basic insulation.



PIN1,2,3,5,6,7. DIM. 0.040(1.016mm)
 PIN4,8. DIM. 0.060(1.57mm)
 ALL DIMENSIONS IN INCHES(mm)
 PIN PITCH TOLERANCE ±0.014(0.35)
 Tolerance : x.xx±0.02(x.x±0.5)
 x.xxx±0.01(x.xx±0.25)



PIN CONNECTION	
PIN	Define
1	- INPUT
2	ON/OFF
3	+ INPUT
4	- OUTPUT
5	- SENSE
6	TRIM
7	+ SENSE
8	+ OUTPUT

PRODUCT OPTIONS TABLE	
Option	Suffix
Negative remote ON/OFF logic, 0.20" pin length (standard)	-
Negative remote ON/OFF logic, 0.145" pin length	-L
Negative remote ON/OFF logic, 0.11" pin length	-K
Positive remote ON/OFF logic, 0.20" pin length	-P
Positive remote ON/OFF logic, 0.145" pin length	-S
Positive remote ON/OFF logic, 0.11" pin length	-M

Example : QEB50-48S3P3-P