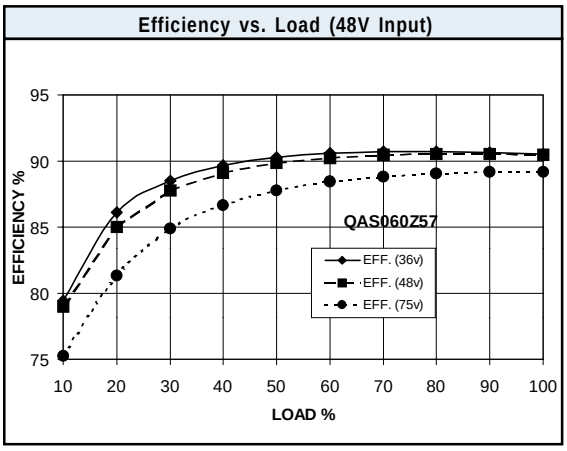
QAS SERIES - 50 WATT

DESCRIPTION

QAS DC/DC converters are designed to provide higher output voltages for telecom and industrial applications. The QAS features remote sense for accurate point of load regulation, five-sided shielding, and 1500 VDC isolation. The QAS also provides output voltage trim, overcurrent, short circuit, and overvoltage protection, allowing use in a wide range of applications.

FEATURES

- Overvoltage Protection
- Wide Range Input
- Short Circuit Protection
- 5-Sided Shielding
- Remote Enable
- 1500V Isolation
- Remote Sense and Voltage Trim



TECHNICAL SPECIFICATIONS

Input	
Voltage Range	
48 VDC Nominal	36 - 72 VDC
Reflected Ripple	50 mA
Input Reverse Voltage Protection	Shunt Diode
Input Undervoltage Lockout	
Turn On	34 VDC
Turn Off	30 VDC

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated	±0.2% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom.	±0.2% V_{out}
Minimum Output Current	10 % I_{out}, Rated
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation 57V and 60V Outputs	8% V_{out}
Pk Deviation 5V Outputs	4% V_{out}
Settling Time	500 µs
Voltage Trim Range	±10%
Ripple and Noise, RMS, 100 MHz BW, 5V Output	100 mV Pk-Pk
Ripple and Noise, RMS, 100 MHz BW, 57V and 60V Outputs	200 mV Pk-Pk
Short Circuit / Overcurrent Protection	Shutdown / Hiccup
Current Limit Threshold Range, % of I_{out} Rated	110 - 130%
OVP Trip Range	120 - 140% V_{out} Nom.
OVP Type	Second Control Loop

General	
Turn-On Time 5V Output	10 ms
Turn-On Time 57V and 60V Outputs	15 ms
Remote Shutdown	Positive Logic
Switching Frequency	300 kHz
Isolation	
Input - Output	1500 VDC
Input - Case	1050 VDC
Output - Case	500 VDC
Temperature Coefficient	0.03%/°C
Case Temperature	
Operating Range	-25 To +85°C
Storage Range	-40 To +125°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g
MTBF† (Bellcore TR-NWT-000332)	Consult Factory
Safety	Consult Factory
Weight (Approx.)	4.0 oz

Notes

[1] For negative logic, add suffix "N" to model number.

† MTBF predictions may vary slightly from model to model.

Specifications typically at 25°C, normal line, and full load, unless otherwise stated.

Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.

Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.

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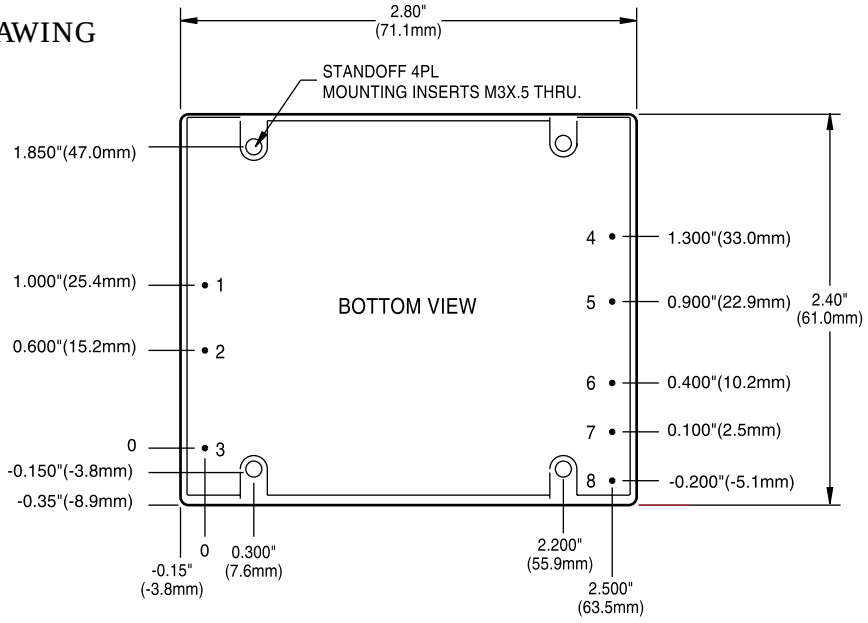
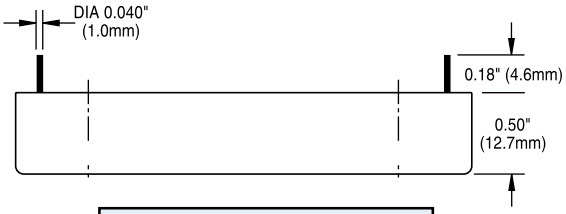
MODELS - (See the last page of this file for options.)

Vin (Volts)	Vin Range (Volts)	Iin Max.* (Amps)	Vout (Volts)	Iout Rated (Amps)	Ripple & Noise Pk-Pk (mV)	Efficiency Typ. **	Model
48	36 - 72	1.60	5.0	10.0	50	86%	QAS050ZG
48	36 - 72	2.00	57.0	1.10	200	87%	QAS060Z57
48	36 - 72	1.60	60.0	0.83	200	88%	QAS050Z60

Denotes advanced product release. Consult factory for product availability.
* Maximum input current at minimum input voltage, maximum rated output power.
** At nominal Vin, rated output.

MECHANICAL DRAWING





Thermal Impedance	
Natural Convection	10.0 °C/W
100 LFM	7.6 °C/W
200 LFM	5.7 °C/W
300 LFM	4.4 °C/W
400 LFM	3.4 °C/W

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

Pin	Function
1	$-V_{in}$
2	$+V_{in}$
3	Enable
4	$-V_{out}$
5	$+V_{out}$
6	-Sense
7	Trim
8	+Sense

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05

(Dimensions as listed unless otherwise specified.)

OPTIONS

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, LES, QBS, QES, TES, TQD	TTL “Low” Turns Module ON TTL “High” Turns Module OFF
Lucent Compatible Trim	T	HAS, HBD, HBS, HES, QBS, QES	
Terminal Strip	TS	XWS, XWD, XWT	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Current Share	4	SMS	
Headerless	Y	Encapsulated EWS, IWS, OWS	
PIN LENGTH AND HEATSINK OPTIONS			Standard Pin Length is 0.180” (4.6mm)
0.110” (2.8mm) Pin Length	8	All Units (Except SMS)	
0.150” (3.8mm) Pin Length	9	All Units (Except SMS)	
0.24” (6.1mm) Horizontal Heatsink	1H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.24” (6.1mm) Vertical Heatsink	1V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.45” (11.4mm) Horizontal Heatsink	2H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.45” (11.4mm) Vertical Heatsink	2V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.95” (24.1mm) Horizontal Heatsink	3H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.95” (24.1mm) Vertical Heatsink	3V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad

Example Options: HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent compatible trim, and 0.95” vertical heatsink.
LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.
QBS066ZG-AT8 = QBS066ZG-A with Lucent compatible trim and 0.110” pin length.