

- Efficiency up to 90%
- 1500 VDC Isolation
- Single Output Up to 4.5A
- Over Voltage Protection
- 4:1 Ultra Wide Input Range
- Six Sided Shielding
- Remote On/Off Control
- Optional Heatsink
- RoHS Compliant
- CSA Approved

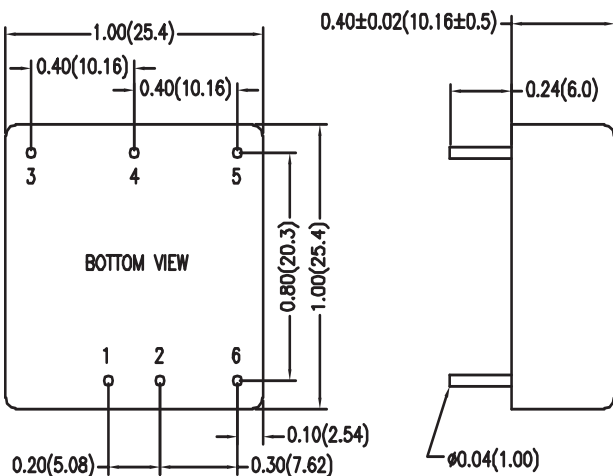


## 20 Watt QMJ Single and Dual Series



Model Number	Voltage		Current				Reflected Ripple	Over Voltage Protection	Input Overvoltage (1000ms)	Efficiency*	Capacitive Load	
	Input		Input		Output							
	Nom. (VDC)	Range (VDC)	@ No Load (mA)	@ Max Load (mA)	Min (mA)	Max (mA)						Typ (mA)
QMJ15H24S3R3	24	(9-36)	3.3	80	711	0	4500	50	3.9	50	87	10300
QMJ20H24S5	24	(9-36)	5	90	936	0	4000	50	6.2	50	89	6800
QMJ20H24S12	24	(9-36)	12	40	938	0	1670	50	15	50	89	1200
QMJ20H24S15	24	(9-36)	15	40	941	0	1340	50	18	50	89	750
QMJ20H24S24	24	(9-36)	24	40	949	0	835	50	30	50	88	300
QMJ20H24D12	24	(9-36)	±12	40	938	±60	±835	50	±15	50	89	680
QMJ20H24D15	24	(9-36)	±15	40	941	±50	±670	50	±18	50	89	380
QMJ15H48S3R3	48	(18-75)	3.3	40	352	0	4500	30	3.9	100	88	10300
QMJ20H48S5	48	(18-75)	5	45	468	0	4000	30	6.2	100	89	6800
QMJ20H48S12	48	(18-75)	12	25	469	0	1670	30	15	100	89	1200
QMJ20H48S15	48	(18-75)	15	25	471	0	1340	30	18	100	89	750
QMJ20H48S24	48	(18-75)	24	25	474	0	835	30	30	100	88	300
QMJ20H48D12	48	(18-75)	±12	25	469	±60	±835	30	±15	100	89	680
QMJ20H48D15	48	(18-75)	±15	25	471	±50	±670	30	±18	100	89	380

\* Efficiency for 24 VDC Input units measured at 12 VDC.  
Efficiency for 48 VDC Input units measured at 24 VDC.



Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Common
5	-Vout	-Vout
6	Remote On/Off	Remote On/Off

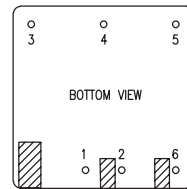


FIGURE 1

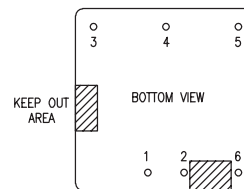


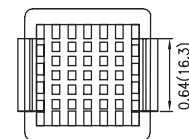
FIGURE 2

**KEEP OUT AREAS:**  
Keep copper traces in mating assembly away from this area to prevent shorting.

Figure 1:  
QMJ15H24S3R3, QMJ20H24S5  
QMJ15H48S3R3, QMJ20H48S5

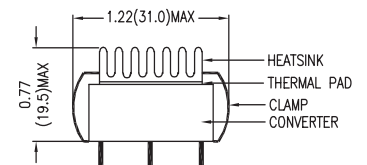
Figure 2: All other models

**Optional Heatsink**  
For heatsink order HS03.  
Comes with thermal pad and clamps.



Dimensions are inches (mm) unless noted

Tolerance:	Inches	Millimeters
	X.XX ±0.01	X.X ±0.25
	X.XXX ±0.005	X.XX ±0.13
Pin	±0.002	±0.05



See Model Selection Table for Model Specific Parameters

Input Parameters	Min	Typ	Max	Units
Input Surge Voltage (1 sec max.) 24 Vin 48 Vin	-0.7 -0.7		50 100	VDC
Start Voltage 24 Vin 48 Vin			9 18	VDC
Start Up Time		30		mS
Switching Frequency		330		kHz
Input Filter	LC Filter			
Output Parameters	Min	Typ	Max	Units
Output Voltage Accuracy			±1.0	%
Output Voltage Balance Dual Output, Balanced Loads			±2.0	%
Load Regulation Min. Load to Full Load Single 3.3V & 5V 12V, 15V & 24V Dual ±12V & ±15V			±0.5 ±0.2 ±1.0	%
Line Regulation Single Output Vin=Min. to Max. Dual Output			±0.2 ±0.5	%
Ripple & Noise (20MHz) 3.3V & 5V Output Models 12V & 15V Output Models 24V Output Models ±12V, ±15V Output Models		75 100 150 100		mV P-P
Over Current Protection		150		% of Iout
Transient Recovery Time 25% Load Step Change		300		µs
Temperature Coefficient			±0.02	% / °C
Short Circuit Protection	Hiccup Automatic Recovery			
Remote On Off	Min	Typ	Max	Units
DC/DC On	3.5V-12V or Open Circuit			
DC/DC Off	0v -1.2V or Short Circuit			
Control Input Current (on) Vctrl = 5.0V			0.5	mA
Control Input Current (off) Vctrl = 0V			-0.5	mA
Control Common	Referenced to Negative Input			
Standby Input Current Supply Off & Nominal Vin		10		mA
Output Voltage Trim	Min	Typ	Max	Units
Trim Up / Trim Down (7) % of nominal output voltage	±10			%

General Specifications	Min	Typ	Max	Units
Isolation Voltage, 60 seconds	1500			VDC
Isolation Resistance 500VDC	1000			Mohms
Isolation Capacitance, 100kHz, 1V			1500	pF
Operating Temperature (Ambient)	-40		+85	°C
Operating Temperature (Case)	-40		+105	°C
Thermal Impedance Natural Convection without heatsink Natural Convection with heatsink	18.2 15.3			°C/W
Storage Temperature	-50		+125	°C
Humidity			95	%
MTBF MIL-HDBK-217F @25°C, Ground Benign		451		K Hours
Cooling	Free-Air Convection			
Case Size	1.0 x 1.0x 0.4 inches 25.4 x 25.4 x 10.16 mm			
Case Material	Six-Sided shielded, Metal Case (UL-94V-0)			
Weight	15g			
Agency Approvals	CSA 60950-1 Approved			

Notes:

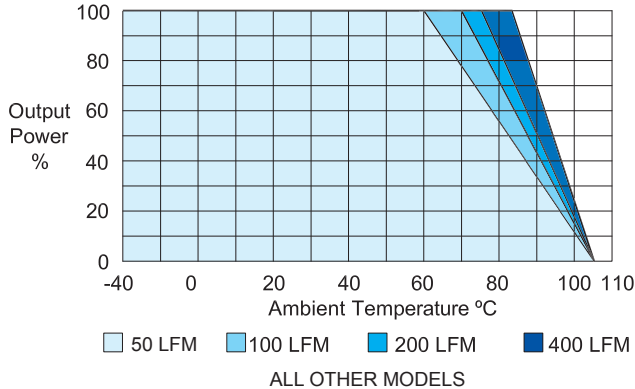
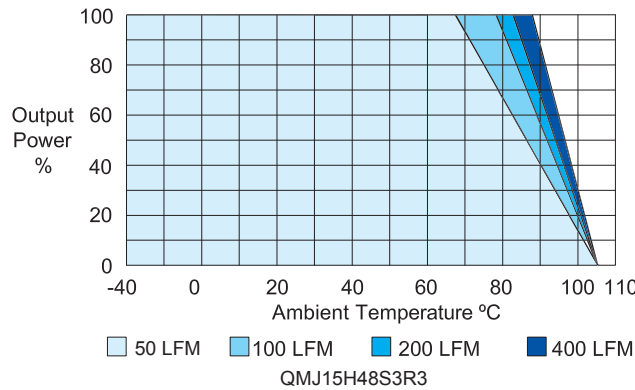
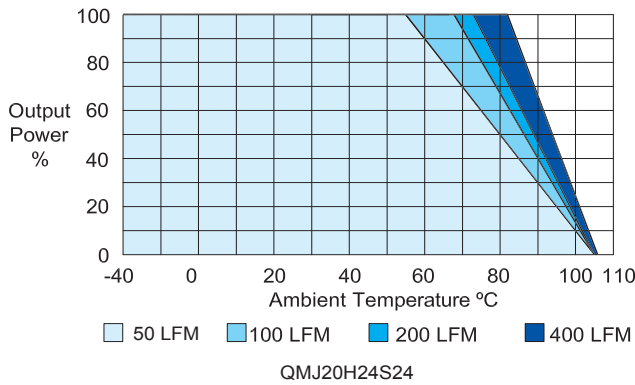
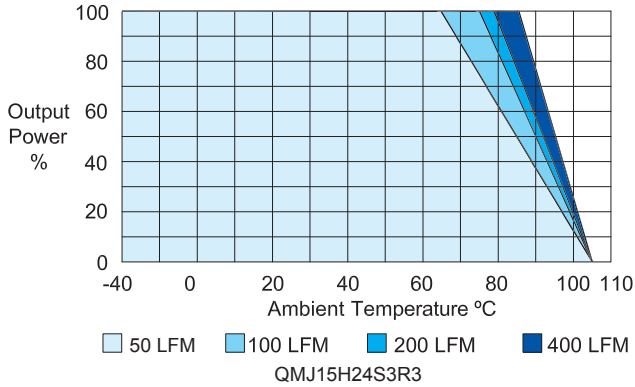
1. Specifications typical at Ta=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.
2. Ripple & Noise measurement bandwidth is 20MHz, measured with a 1µF MLCC and a 10µF Tantalum Capacitor.
3. Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%.
4. Water washability - ConTech DC/DC converters are designed to withstand most solder/wash processes. Careful attention should be used when assessing the applicability in your specific manufacturing process. Converters are not hermetically sealed.
5. See ConTech website for Definition of Terms, Application Notes, and Test Setups and Parameters. [www.ConTech-us.com/appnotes.html](http://www.ConTech-us.com/appnotes.html).
6. Specifications subject to change without notice.
7. Output voltage trimming must use resistive components only. Applying external voltages to the trim pin can cause damage.
8. See ConTech website [www.ConTech-us.com/pdf/rohs.pdf](http://www.ConTech-us.com/pdf/rohs.pdf) for RoHS Statement.



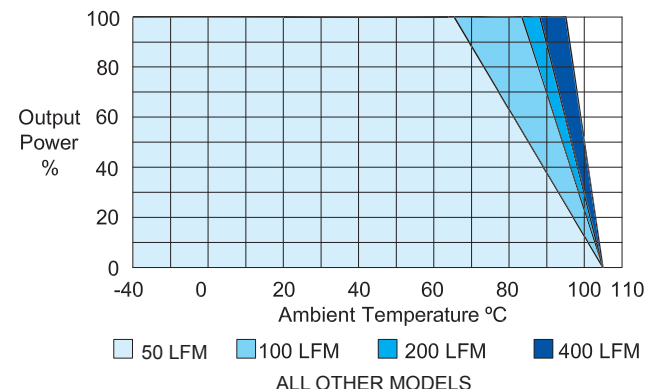
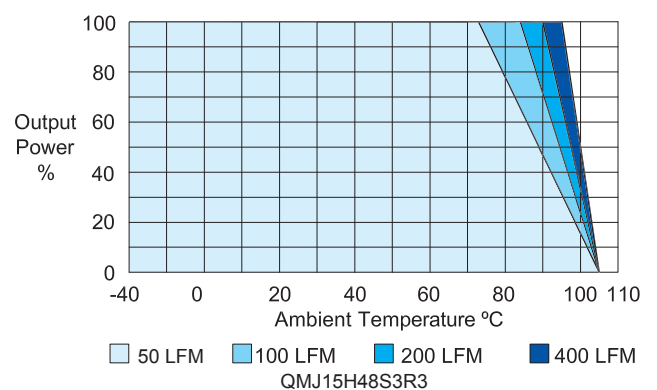
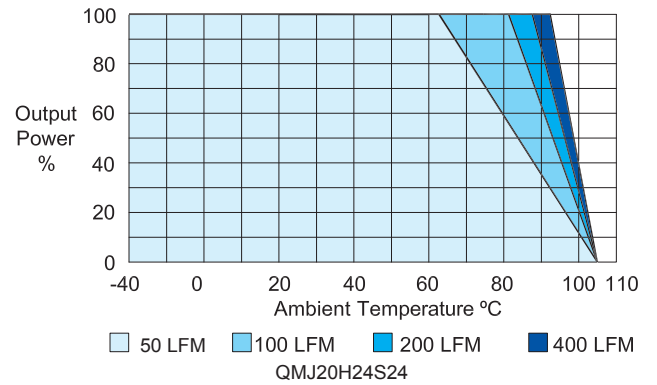
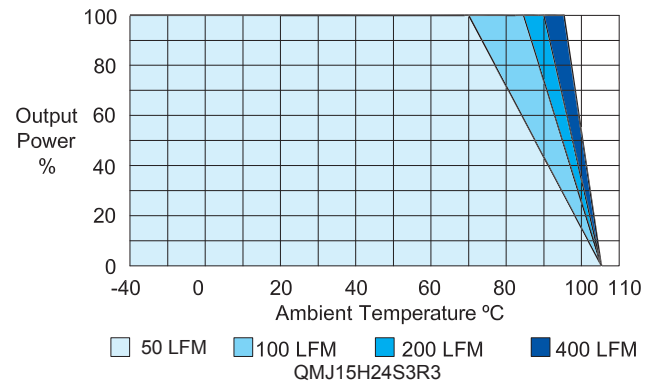
# Derating Curves

To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 105°C.

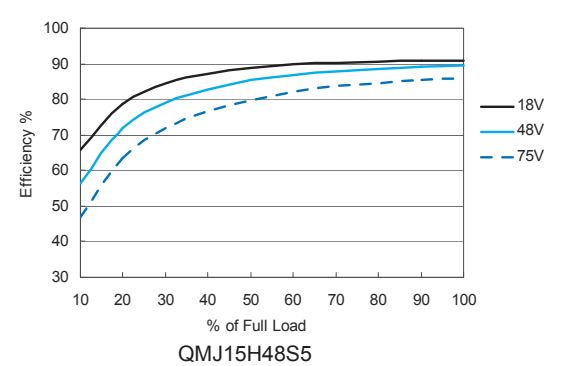
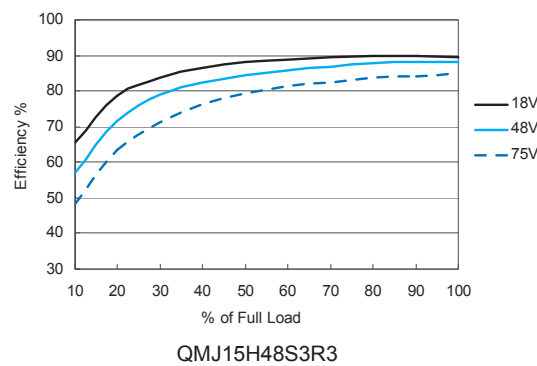
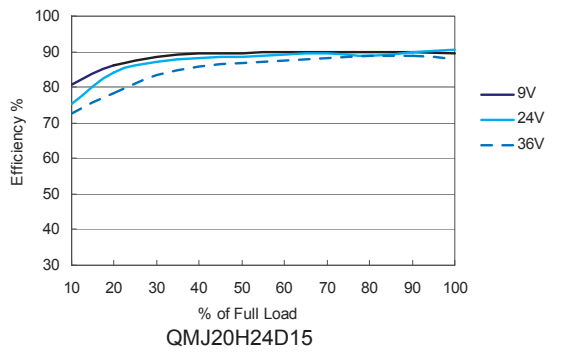
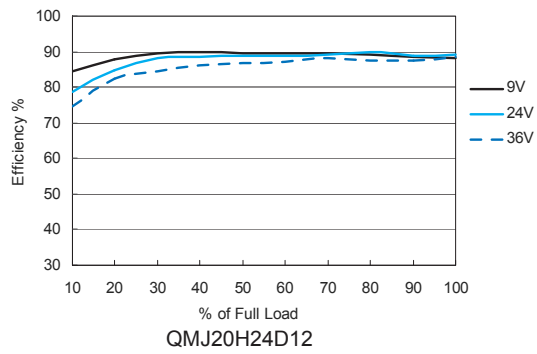
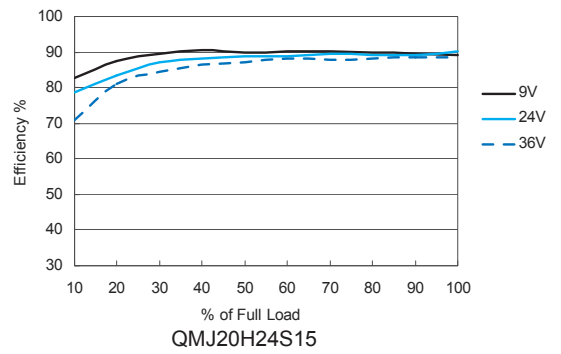
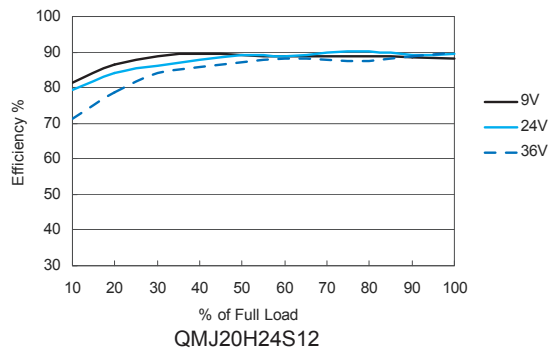
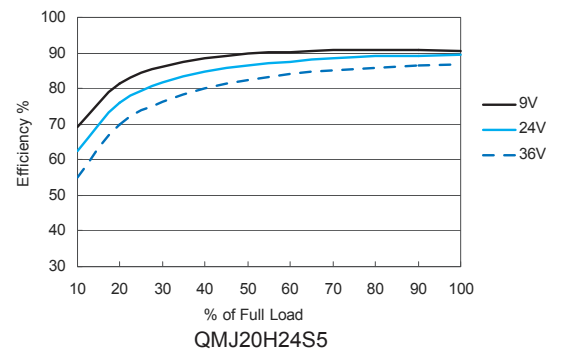
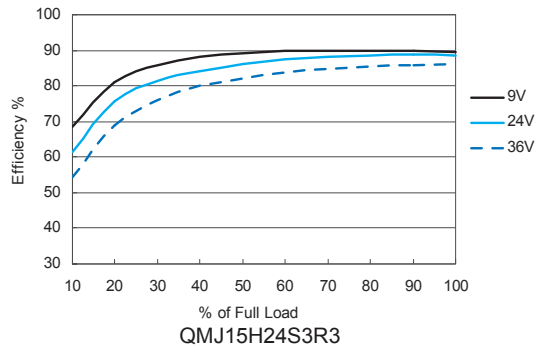
## WITHOUT HEATSINK

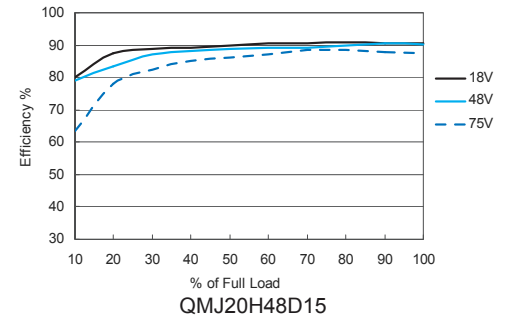
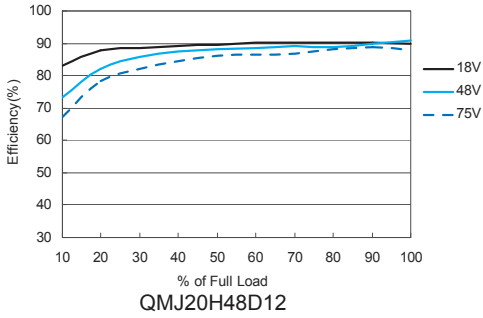
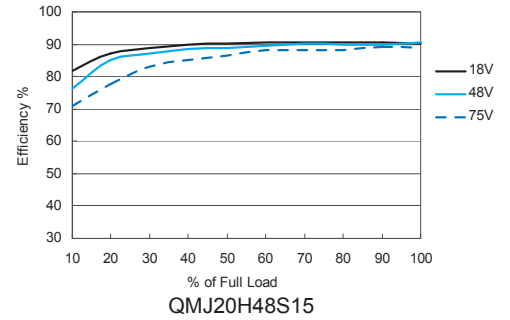
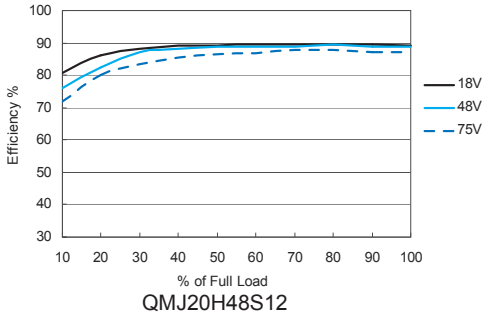


## WITH HEATSINK

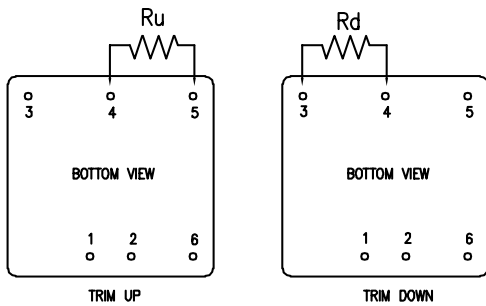


# Efficiency Curves





## Trimming



External Output Trimming  
Output can be externally trimmed as shown.

## Block Diagrams

