

## Voltage Regulation Module (VRM) Connectors

### Product Facts

- Available in latch versions for VRMs up to 3 oz.
- Available with metal clip for VRMs over 3 oz.
- VRM connectors to support a wide variety of Power Supply Standards
- Solder tail, press fit and right angle versions to support specific customer needs
- Up to 5.5 Amps per contact in typical VRM applications
- New materials are 94 V-0 rated with max. operating temperature of 125°C — VRM 10.x Series
- Keying prevents plugging the wrong VRM into the connector

### Materials

**Housing** — PBT Thermoplastic

**Contact** — High conductivity copper alloy

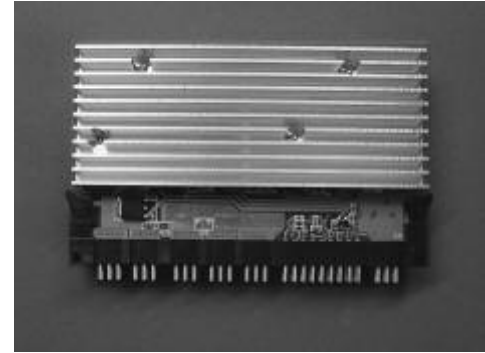
### Technical Documents

Product Specification

108-9039-1 & -2

Qualification Test Report

501-227-1 & -2



The new Voltage Regulation Module (VRM) family of connectors is designed to meet the needs of many existing and new Power Supply Standards being developed. They are dual row card edge style connectors that are well known in the computer market. Currently the connectors are designed to carry up to 150 amps of DC power — that's 300 amps total running through the connector. The connector is pcb mounted and there are versions available in press fit or right angle. The connectors have card retention either in the

form of a latch or a metal retention clip which is added after the VRM is in place.

### Industry Applications

The VRM connector is controlled by various Power Supply Standards. Current ones are EPS-1U, AD2D-VID, AD2D, VRM 8.5, VRM 9.0, VRM 9.1, VRM 10.0 and VRM 10.1. Many applications with a need to transmit high power from board to board can benefit from this connector and additional customer specific applications are developing.

**Voltage Regulation Module (VRM) Connectors** (Continued)

**Part Number Matrix**

Application	Power Supply Standard				
	AD2D-VID	AD2D-5 volt	AD2D 12 volt	VRM 8.5, 12 volt	EPS-1U
Max Current <sup>1</sup> Output - Spec	30 amps	20 amps	8.3 amps	44 amps	22 amps
Max Current <sup>4</sup> per Contact	3.15 amps	3.15 amps	3.15 amps	3.15 amps	3.58 amps
Connector Size	35 pair	35 pair	35 pair	25 pair	31 pair
Key Located between slots	23,24	3,4	5,6	17,18	11,12
Omit Pin for Keying	4	5	67	44	6

**Solder Tail Connectors**

Standard Conn. without Latch	5145539-4	5145539-3	5145539-5	N/A	6364999-1
Conn. With Clip <sup>1</sup> #1364124-1	N/A	N/A	N/A	N/A	1364125-1
Conn. With New Latch <sup>2</sup> & Supports	6364700-6	6364700-5	6364700-7	6364666-2	6364666-1

**Press-Fit Connectors**

Conn. With Clip <sup>1</sup> #1364124-1	N/A	N/A	N/A	N/A	1364664-1 <sup>3</sup>
Conn. With Latch <sup>2</sup> & Supports	6489648-2	6489648-1	6489648-3	6489649-1	6489650-1 <sup>3</sup>

Application	Power Supply Standard							
	VRM 9.0, 12 volt	VRM 9.0, 48 volt	VRM 9.05, 12 volt	VRM 9.1, 12 volt	VRM 9.1	VRM 10.0	VRM 10.1	VRM 10.2, 11-X
Max Current <sup>1</sup> Output - Spec	68 amps	68 amps	80 amps	80 amps	80 amps	105 amps	105 amps	125 Amps
Max Current <sup>4</sup> per Contact	3.58 amps	3.58 amps	4.21 amps	4.21 amps	4.21 amps	5.53 amps	5.53 amps	25 Amps
Connector Size	31 pair	31 pair	31 pair	31 pair	31 pair	31 pair	31 pair	6 Power Pair, 9 Signal Pair
Key Located between slots	11,12	4,5	11,12	12,13	4,5	10, 11	5, 6 & 10, 11	P1, S1 & S9, P2 & P4, P5
Omit Pin for Keying	6	6	6	6	6	57	57	N/A

**Solder Tail Connectors**

Standard Conn. without Latch	6364999-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conn. With Clip <sup>1</sup> #1364124-1	6364125-1	6364125-2	6364125-6	6489162-1	6489162-2	—	—	N/A
Conn. With New Latch <sup>2</sup> & Support	6364666-1	N/A	6489165-3	6489165-1	6489195-2	6489930-2	6489930-1	1651826-1 (4.5 mm) 1651929-1 (3.0 mm)

**Press-Fit Connectors**

Conn. With Clip <sup>1</sup> #1364124-1	—	N/A	6489652-3 <sup>3</sup>	6489652-1 <sup>3</sup>	6489652-2 <sup>3</sup>	—	—	N/A
Conn. With Latch <sup>2</sup> & Supports	6489650-1 <sup>3</sup>	N/A	6489651-3 <sup>3</sup>	6489651-1 <sup>3</sup>	6489651-2 <sup>3</sup>	6658239-2 <sup>3</sup>	6658239-1 <sup>1</sup>	1766436-1
Surface Mount	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1766336-1

**Notes:**

1. Metal clip, part number 1364124-1, is recommended for use with modules weighing up to 6 oz. and is sold separately.
2. Plastic Latch is recommended for use with modules weighing up to 3 oz.
3. Contact Tyco Electronics Engineering for information on connector insertion tooling.
4. Maximum currents achieved currents minimum cooling air flow of 400 LFM. Consult Tyco Electronics product specification for specific performance information.



**Part Number 6364125-x (Connector)  
Part Number 1364124-x (Spring Clip)  
Designed for Intel VRM 9.0 Specifications**

**Note:** All part numbers are RoHS compliant.