

# Bourns® Power Resistors

| Model                                                          | Photo                                                                               | Type                                    | Features / Applications                                                                                        | Power Ratings (W) | Size or Package                              | Tolerance (%) | Resistance Range (Ohms) | Temperature Coefficient (PPM / °C) |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------|---------------|-------------------------|------------------------------------|
| PWR163                                                         |    | SMD Thick Film High Power               | Current Sense, Capacitance Discharge High Pulse Power, AEC-Q200 Compliant & Automotive Grade                   | 25                | DPAK                                         | 1, 5          | 0.02 to 130 k           | 100                                |
| PWR263                                                         |    | SMD Thick Film High Power               | Current Sense, Capacitance Discharge High Pulse Power, AEC-Q200 Compliant & Automotive Grade                   | 20, 35            | D <sup>2</sup> PAK                           | 1, 5          | 0.02 to 130 k           | 100                                |
| PWR220T                                                        |    | Through-Hole Thick Film High Power      | Current Sense, Capacitance Discharge High Pulse Power, AEC-Q200 Compliant & Automotive Grade                   | 20, 35            | TO-220                                       | 1, 5          | 0.02 to 130 k           | 100                                |
| PWR221T                                                        |    | Through-Hole Thick Film High Power      | Current Sense, Capacitance Discharge High Pulse Power, AEC-Q200 Compliant & Automotive Grade (30 Watt Version) | 30, 50            | TO-220                                       | 1, 5          | 0.02 to 130 k           | 100/300/600                        |
| PFS35                                                          |    | SMD Thick Film High Power               | Current Sense, Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                  | 35                | D <sup>2</sup> PAK                           | 1, 5          | 0.01 to 51 k            | 50/100/250                         |
| PF2203                                                         |    | Through-Hole Thick Film High Power      | Current Sense, Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                  | 35                | TO-220                                       | 1, 5          | 0.02 to 51 k            | 50/100/250                         |
| PWR2010<br>PWR2615<br>PWR3014<br>PWR4318<br>PWR4525<br>PWR5322 |    | SMD Wirewound                           | Surge Protection High Pulse Power                                                                              | 0.5, 1, 2, 3      | 2010 to 5322                                 | 1, 5          | 0.01 to 25 k            | 20/50/150                          |
| PWR6927<br>PWR8030<br>PWR8937<br>PWRA247<br>PWRB053            |    | SMD Wirewound                           | Higher Power Rating Higher Surge Capability                                                                    | 3, 5, 7, 10       | 6927 to B053                                 | 0.5, 1, 5     | 0.05 to 70 k            | 20/50/90/300                       |
| FW                                                             |    | Axial Leaded Wirewound                  | Fusible, UL 1412 Listed Coating Material UL 94V-0                                                              | 1, 2, 3, 5, 7     | 12 x 5 to 26 x 9.5 (mm)                      | 5             | 4.7 to 100              | 200                                |
| W                                                              |   | Axial Leaded Wirewound                  | Low Resistance Value and Non-inductive Version Available Coating Material UL 94V-0                             | 1 to 10           | 9.5 x 4.5 to 52.5 x 8.5 (mm)                 | 5             | 0.01 to 15 k            | 300                                |
| WS                                                             |  | Axial Leaded Wirewound                  | Surge Withstand IEC 61000-4-5 1.2/50 µs, Coating Material UL 94V-0                                             | 1 to 8            | 9.5 x 4.5 to 29.5 x 8.5 (mm)                 | 5             | 0.01 to 15 k            | 200                                |
| BR                                                             |  | High Power Metal Clad Braking Resistors | Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                                 | 60 - 500          | Standard 100 x 41 x 22 to 335 x 60 x 30 (mm) | 1, 5, 10      | 0.1 to 1k               | < 260 PPM/ °C                      |
| BRT                                                            |  | High Power Metal Clad Braking Resistors | Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                                 | 60 - 500          | Thick 100 x 41 x 22 to 335 x 60 x 30 (mm)    | 1, 5, 10      | 0.1 to 1k               | < 260 PPM/ °C                      |
| BRS                                                            |  | High Power Metal Clad Braking Resistors | Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                                 | 60 - 500          | Slim 90 x 80 x 12 to 330 x 80 x 12 (mm)      | 1, 5, 10      | 0.1 to 1k               | < 260 PPM/ °C                      |
| UWP                                                            |  | High Power Ceramic Wirewound Resistors  | Capacitor Pre/Discharge High Pulse Power, Industrial Power Supplies, Inverters                                 | 20 - 100          | 60 x 18.5 x 21 to 113 x 22.7 x 22.7 (mm)     | 1, 5          | 0.5 to 1k               | < 260 PPM/ °C                      |

# Bourns® Current Sense Resistors

| Model      | Photo                                                                               | Type                    | Features / Applications                                                                                                                                                                   | Power Ratings (W) | Size or Package                      | Tolerance (%) | Resistance Range (Ohms)                  | Temperature Coefficient (PPM/°C) |
|------------|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|---------------|------------------------------------------|----------------------------------|
| CRL        |    | Thick Film              | Low Ohmic, Current Sense                                                                                                                                                                  | 0.1 to 1          | 0603 to 2512                         | 1, 5          | 0.1 to 0.91                              | 200                              |
| CRM (Q, A) |    | Thick Film              | High Power, High Pulse Rating<br>Current/Voltage Sense, Power Supply, Snubber,<br>Q - Automotive Grade, AEC-Q200 Compliant,<br>A - Automotive Grade, AEC-Q200 Compliant, Sulfur Resistant | 0.125 to 2        | 0603 to 2512                         | 1, 5          | 0.047 to 1M                              | 100 to 250                       |
| CFN (A)    |    | Metal Foil              | Current Sense,<br>AEC-Q200 Compliant & Automotive Grade                                                                                                                                   | 0.25 to 1         | 0402 to 1206                         | 1, 5          | 0.005 to 0.04                            | 100                              |
| CFG        |    | Metal Foil              | Wide Terminal, Current Sense                                                                                                                                                              | 1                 | 0612                                 | 1             | 0.005 to 0.01                            | 100                              |
| CRK        |    | Metal Strip             | Wide Terminal, Current Sense                                                                                                                                                              | 1                 | 0612, 0815                           | 1             | 0.001 to 0.01                            | 50                               |
| CST        |    | 4-Terminal Metal Strip  | High Power, Low Ohmic, Current Sense,<br>Input Amplifiers, AEC-Q200 Compliant & Automotive Grade                                                                                          | 1                 | 0612                                 | 1             | 0.0005 to 0.005                          | 100/200                          |
| CRF        |    | Metal Strip             | High Power, Low Ohmic<br>Low TCR, Low EMF, Current Sense,<br>Input Amplifiers, AEC-Q200 Compliant & Automotive Grade                                                                      | 0.5 to 2          | 0805 to 2512                         | 1, 5          | 0.001 to 0.05<br>and 0 ohm jumper        | 50                               |
| CRE        |    | Metal Strip             | High Power, Low Ohmic<br>Low TCR, Low EMF, Current Sense,<br>Input Amplifiers, AEC-Q200 Compliant & Automotive Grade                                                                      | 2, 3              | 2512                                 | 1             | 0.001 to 0.009                           | 50                               |
| CRA        |    | Metal Strip             | High Power, Low Ohmic<br>Low TCR, Low EMF, Current Sense,<br>Input Amplifiers, AEC-Q200 Compliant & Automotive Grade                                                                      | 3                 | 2512                                 | 1, 5          | 0.01 to 0.1                              | 50                               |
| CSI        |   | EB Welded Metal Element | High Power, Low Ohmic, Low TCR, Low EMF, Current Sense,<br>Battery Management, Power Supply, Industrial                                                                                   | 2.5 to 15 W       | 2512<br>3920<br>5930<br>4026         | 1, 2, 5       | 0.2 to 3.5 milliohms<br>and 0 ohm jumper | ± 50                             |
| CSS        |  | EB Welded Metal Element | High Power, Low Ohmic, Low TCR, Low EMF, Current Sense,<br>Battery Management, Power Supply,<br>AEC-Q200 Compliant & Automotive Grade                                                     | 2.5 to 15 W       | 1216<br>2512<br>3920<br>5930<br>4026 | 1, 5          | 0.2 to 5 milliohms<br>and 0 ohm jumper   | ± 50                             |
| CSM2F      |  | EB Welded Metal Element | High Power, Low Ohmic, Low TCR, Low EMF, Current Sense,<br>Battery Management, Power Supply,<br>AEC-Q200 Compliant & Automotive Grade,<br>optionally with sensing pins                    | 36 & 50           | 6918, 7036, 8515, 8536               | 5             | 25 to 200 µΩ                             | 50                               |