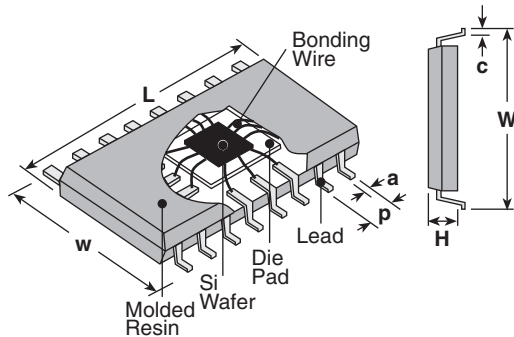


### features

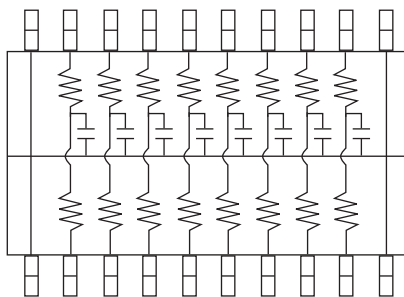
- Thin film construction
- Surface mount package
- Stable resistor technology
- High component density
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

### dimensions and construction

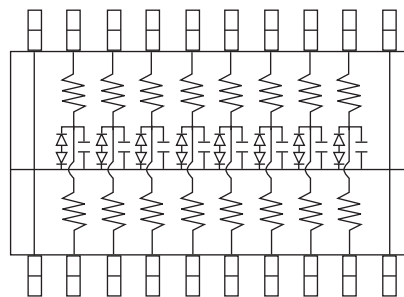


| Package Code | Total Power | Pins | Dimensions inches (mm) |                |                |                |                 |                |                |
|--------------|-------------|------|------------------------|----------------|----------------|----------------|-----------------|----------------|----------------|
|              |             |      | L ±0.2                 | W ±0.2         | w ±0.2         | H ±0.2         | p ±0.1          | a ±0.1         | c ±0.1         |
| Q20          | 1 watt      | 20   | .341<br>(8.66)         | .236<br>(5.99) | .150<br>(3.81) | .063<br>(1.60) | .025<br>(0.635) | .010<br>(0.25) | .026<br>(0.66) |
| Q24          | 1 watt      | 24   | .341<br>(8.66)         | .236<br>(5.99) | .150<br>(3.81) | .063<br>(1.60) | .025<br>(0.635) | .010<br>(0.25) | .026<br>(0.66) |

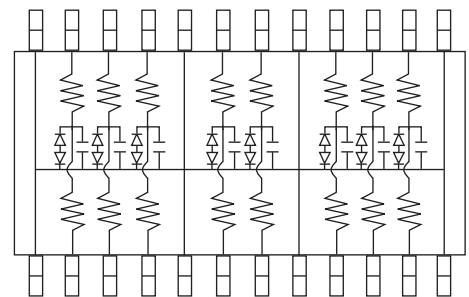
### circuit schematic



TFA: 20 pins



TFB: 20 pins



TFB: 24 pins

### ordering information

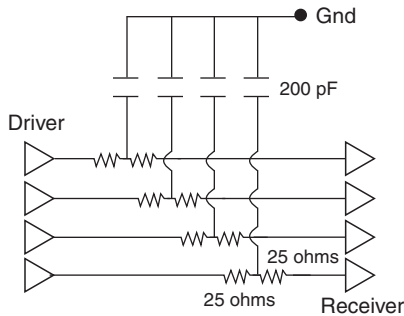
|            |            |                                       |  |   |  |                      |   |   |                      |
|------------|------------|---------------------------------------|--|---|--|----------------------|---|---|----------------------|
| New Part # | TFB        | Q20                                   | T  | TEB   | 250  | K                    | / | 201   | M                    |
| Type       | TFA<br>TFB | Package Code<br>Reference above table | Termination Material<br>T: Sn<br>(Other termination styles available, contact factory for options) | Packaging<br>TEB: 13" embossed plastic tape | Nominal Resistance<br>2 significant digits + number of zeros | Tolerance<br>K: ±10% |   | Nominal Capacitance<br>2 significant digits + number of zeros | Tolerance<br>M: ±20% |

For further information on packaging, please refer to Appendix A.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

12/28/10

## Parallel Termination



## applications and ratings

| Part Designation | Power Rating @ 70°C (Per Element) | T.C.R. (ppm/°C) | Capacitor Voltage Rating | Operating Temperature Range | Resistance Range Ω (E-24) | Resistance Tolerance | Capacitor Range pF (E-24) | Capacitor Tolerance | ESD* Rating IEC 61000-4-2 | Diode* Breakdown Voltage (@1ma) |
|------------------|-----------------------------------|-----------------|--------------------------|-----------------------------|---------------------------|----------------------|---------------------------|---------------------|---------------------------|---------------------------------|
| TFA<br>TFB       | 100mW                             | ±200            | 20V                      | -55°C to +155°C             | 10 ~ 1,000                | K: ±10%              | 33 ~ 400pF                | M: ±20%             | 8kV*                      | 6.5v Min.                       |

\* TFB only

## environmental applications

### Performance Characteristics

| Parameter                    | Maximum Δ R | Test Method            |
|------------------------------|-------------|------------------------|
| Resistance to Soldering Heat | +0.25%      | MIL-R-55342 4.7.7      |
| Short Time Overload          | +0.50%      | MIL-R-55342 4.7.5      |
| Moisture Resistance          | +0.50%      | MIL-STD-202 method 103 |
| Thermal Shock                | +0.50%      | MIL-STD-202 method 107 |
| H.A.S.T.                     | +1%         | 2 Atm., 121°C, 96 hrs  |