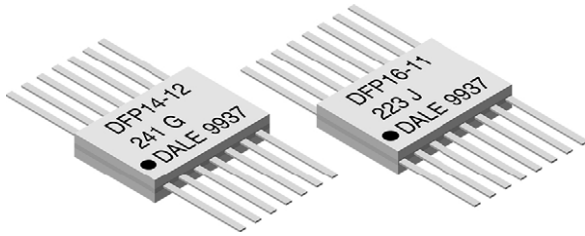


## Thick Film Resistor Networks, Flat Pack



### FEATURES

- Isolated and bussed schematics available
- 0.065" (1.65 mm) height for high density packaging
- Low temperature coefficient (-55 °C to +125 °C) ± 100 ppm/°C
- Hot solder dipped leads
- Highly stable thick film
- Wide resistance range
- All devices are capable of passing the MIL-STD-202, method 210, condition C "Resistance to Soldering Heat" test

### STANDARD ELECTRICAL SPECIFICATIONS

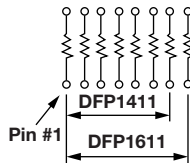
GLOBAL MODEL	POWER RATING ELEMENT $P_{25^{\circ}\text{C}}$ W	POWER RATING PACKAGE $P_{25^{\circ}\text{C}}$ W	CIRCUIT SCHEMATIC	MAXIMUM WORKING VOLTAGE <sup>(3)</sup> $V_{DC}$	TEMPERATURE COEFFICIENT <sup>(1)</sup> ± ppm/°C	TOLERANCE <sup>(2)</sup> ± %	RESISTANCE RANGE Ω	TCR TRACKING ± ppm/°C
DFP	0.25	0.65	11	75	100	1, 2, 5	10 to 1M	50
	0.15	0.65	12	75	100	1, 2, 5	10 to 1M	50

#### Notes

- Consult factory for stocked values
- (1) Temperature range: -55 °C to +125 °C
- (2) ± 2 % standard, ± 1 % and ± 5 % available
- (3) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less

### TECHNICAL SPECIFICATIONS

#### 11 Schematic

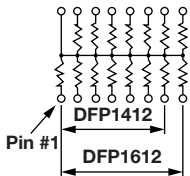


7 or 8 isolated resistors

The DFPxx11 provides the user with 7 or 8 nominally equal resistors with each resistor isolated from all others. Commonly used in the following applications:

- "Wired OR" pull-up
- Power driven pull-up
- Power gate pull-up
- Line termination
- Long-line impedance balancing
- LED current limiting
- ECL output pull-down
- TTL input pull-down

#### 12 Schematic



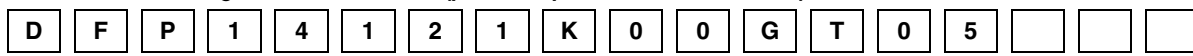
13 or 15 resistors with one pin common

The DFPxx12 provides the user with a choice of 13 or 15 nominally equal resistors, each connected to a common pin (14 or 16). Commonly used in the following applications:

- MOS/ROM pull-up/pull-down
- Open collector pull-up
- "Wired OR" pull-up
- Power driven pull-up
- TTL input pull-down
- Digital pulse squaring
- TTL unused gate pull-up
- High speed parallel pull-up

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: DFP14121K00GT05 (preferred part number information)



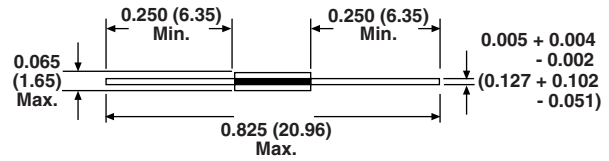
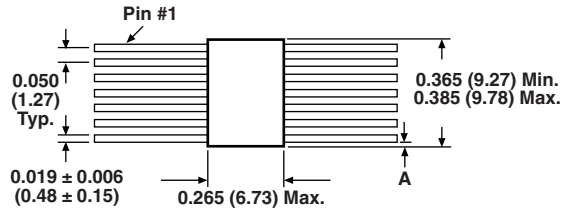
GLOBAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
DFP	14 16	11 = isolated 12 = bussed	R = Ω K = kΩ M = MΩ 10R0 = 10Ω 680K = 680 kΩ 1M00 = 1.0 MΩ	F = ± 1 % G = ± 2 % J = ± 5 %	T05 = tray pack	Blank = standard (dash number) (up to 3 digits) from 1 to 999 as applicable

Historical Part Number Example: DFP1412102G (will continue to be accepted)

DFP	14	12	102	G	T05
HISTORICAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

#### Note

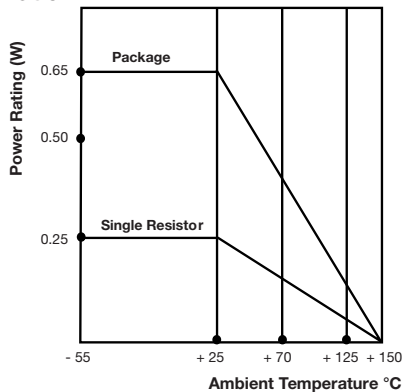
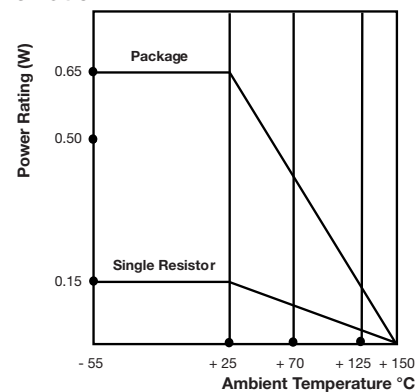
- For additional information on packaging, refer to the Surface Mount Network Packaging document ([www.vishay.com/doc?31540](http://www.vishay.com/doc?31540))

**DIMENSIONS** in inches (millimeters)


GLOBAL MODEL	DIMENSION A
DFP14	0.037 ± 0.010 (0.94 ± 0.25)
DFP16	0.012 ± 0.010 (0.30 ± 0.25)

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	DFP14 / DFP16
Isolation resistance 11 schematic	MΩ	> 100
Voltage coefficient of resistance	ppm/V	< 50 typical
Maximum operating voltage	V <sub>DC</sub>	75
Operating temperature range	°C	-55 to +125
Storage temperature range	°C	-55 to +150

MECHANICAL SPECIFICATIONS	
Marking	Model number, schematic number, value tolerance, pin 1 indicator, date code
Marking resistance to solvents	Permanency testing per MIL-STD-202, method 215
Solderability	Per MIL-STD-202, method 208E
Terminals	Per MIL-STD-1276 DFPxx11, DFPxx12 = type G (hot solder dipped). Hot solder dipped leads supplied as standard finish.
Body	Epoxy filled ceramic sandwich

**11 Schematic**

**Derating**
**12 Schematic**

**Derating**

PERFORMANCE		
TEST	CONDITIONS	MAX. ΔR (TYPICAL TEST LOTS)
Power conditioning	1.5 x rated power, applied 1.5 h "ON" and 0.5 h "OFF" for 100 h ± 4 h at +25 °C ambient temperature	± 0.50 % ΔR
Thermal shock	5 cycles between -65 °C and +125 °C	± 0.50 % ΔR
Short time overload	2.5 x rated working voltage, 5 s	± 0.25 % ΔR
Low temperature operation	45 min at full rated working voltage at -65 °C	± 0.25 % ΔR
Moisture resistance	240 h with humidity ranging from 80 % RH to 98 % RH	± 0.50 % ΔR
Resistance to soldering heat	Leads immersed in +260° ΔC solder to within 1/16" of body for 10 s	± 0.25 % ΔR
Shock	Total of 18 shocks at 100 g's	± 0.25 % ΔR
Vibration	12 h at maximum of 20 g's between 10 Hz and 2000 Hz	± 0.25 % ΔR
Load life	1000 h at +70 °C, rated power applied 1.5 h "ON", 0.5 h "OFF" for full 1000 h period. Derated according to the curve.	± 0.50 % ΔR
Terminal strength	1.5 pound pull for 30 s	± 0.25 % ΔR
Insulation resistance	10 000 MΩ (minimum)	-
Dielectric withstanding voltage	No evidence of arcing or damage (200 V <sub>RMS</sub> for 1 min)	-



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