



Material Declaration Data Sheet

CF18 (Formerly CF 1/8)

Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.2031**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.059	288,331	96.00%	0.0610	30.03%
	silicon oxide	7631-86-9	0.001	6,007	2.00%		
	magnesium oxide	1309-48-4	0.001	3,003	1.00%		
	calcium oxide	1305-78-8	0.001	3,003	1.00%		
Element	carbon	7440-44-0	0.003	14,993	78.95%	0.0039	1.90%
	silicon	7440-21-3	0.001	3,998	21.05%		
Cap and lead assembly	copper	7440-50-8	0.012	59,271	9.58%	0.1257	61.87%
	iron	7439-89-6	0.111	546,617	88.35%		
	nickel	7440-02-0	0.000	928	0.15%		
	tellurium	13494-80-9	0.002	11,879	1.92%		
Termination plating	tin	7440-31-5	0.006	29,985	100.00%	0.0061	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.000	1,999	100.00%	0.0004	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.006	29,985	100.00%	0.0061	3.00%
Total Weight			0.2031				

* Weights are approximate.



Material Declaration Data Sheet

CF14 (Formerly CF 1/4)

Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.2670**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.077	288,000	96.00%	0.0801	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.004	15,000	78.95%	0.0051	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	copper	7440-50-8	0.020	73,971	11.95%	0.1653	61.90%
	iron	7439-89-6	0.142	531,473	85.86%		
	nickel	7440-02-0	0.000	1,238	0.20%		
	tellurium	13494-80-9	0.003	12,318	1.99%		
Termination plating	tin	7440-31-5	0.008	30,000	100.00%	0.0080	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0005	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.008	30,000	100.00%	0.0080	3.00%
Total Weight			0.2670				

* Weights are approximate.



Material Declaration Data Sheet

CF12 (Formerly CF 1/2)

Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.3220**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.093	288,000	96.00%	0.0966	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.005	15,000	78.95%	0.0061	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	copper	7440-50-8	0.024	73,971	11.95%	0.1993	61.90%
	iron	7439-89-6	0.171	531,473	85.86%		
	nickel	7440-02-0	0.000	1,238	0.20%		
	tellurium	13494-80-9	0.004	12,318	1.99%		
Termination plating	tin	7440-31-5	0.010	30,000	100.00%	0.0097	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0006	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.010	30,000	100.00%	0.0097	3.00%
Total Weight			0.3220				

* Weights are approximate.



Material Declaration Data Sheet

CF1 (Formerly CF 1)

Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.3650**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.105	288,000	96.00%	0.1095	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.005	15,000	78.95%	0.0069	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	copper	7440-50-8	0.023	64,005	10.34%	0.2259	61.90%
	iron	7439-89-6	0.201	549,796	88.82%		
	nickel	7440-02-0	0.001	2,043	0.33%		
	tellurium	13494-80-9	0.001	3,157	0.51%		
Termination plating	tin	7440-31-5	0.011	30,000	100.00%	0.0110	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0007	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.011	30,000	100.00%	0.0110	3.00%
Total Weight			0.3650				

* Weights are approximate.



Material Declaration Data Sheet

CF2 (Formerly CF 2)

Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.3970**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.114	288,000	96.00%	0.1191	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.006	15,000	78.95%	0.0075	1.90%
	silicon	7440-21-3	0.002	4,000	21.05%		
Cap and lead assembly	copper	7440-50-8	0.027	69,019	11.15%	0.2457	61.90%
	iron	7439-89-6	0.218	548,744	88.65%		
	nickel	7440-02-0	0.000	681	0.11%		
	tellurium	13494-80-9	0.000	557	0.09%		
Termination plating	tin	7440-31-5	0.012	30,000	100.00%	0.0119	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0008	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.012	30,000	100.00%	0.0119	3.00%
Total Weight			0.3970				

* Weights are approximate.



Material Declaration Data Sheet

CFM14 (Formerly CFM 1/4)

Mini - Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.2031**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.059	288,331	96.00%	0.0610	30.03%
	silicon oxide	7631-86-9	0.001	6,007	2.00%		
	magnesium oxide	1309-48-4	0.001	3,003	1.00%		
	calcium oxide	1305-78-8	0.001	3,003	1.00%		
Element	carbon	7440-44-0	0.003	14,993	78.95%	0.0039	1.90%
	silicon	7440-21-3	0.001	3,998	21.05%		
Cap and lead assembly	copper	7440-50-8	0.012	59,271	9.58%	0.1257	61.87%
	iron	7439-89-6	0.111	546,617	88.35%		
	nickel	7440-02-0	0.000	928	0.15%		
	tellurium	13494-80-9	0.002	11,879	1.92%		
Termination plating	tin	7440-31-5	0.006	29,985	100.00%	0.0061	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.000	1,999	100.00%	0.0004	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.006	29,985	100.00%	0.0061	3.00%
Total Weight			0.2031				

* Weights are approximate.



Material Declaration Data Sheet

CFM12 (Formerly CFM 1/2)

Mini - Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.2670**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.077	288,000	96.00%	0.0801	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.004	15,000	78.95%	0.0051	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	copper	7440-50-8	0.020	73,971	11.95%	0.1653	61.90%
	iron	7439-89-6	0.142	531,473	85.86%		
	nickel	7440-02-0	0.000	1,238	0.20%		
	tellurium	13494-80-9	0.003	12,318	1.99%		
Termination plating	tin	7440-31-5	0.008	30,000	100.00%	0.0080	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0005	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.008	30,000	100.00%	0.0080	3.00%
Total Weight			0.2670				

* Weights are approximate.



Material Declaration Data Sheet

CFM1 (Formerly CFM 1)

Mini - Carbon Film Resistor

Date: **November 13, 2012**
 Component Weight (g): **0.3236**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.093	287,365	95.88%	0.0970	29.97%
	silicon oxide	7631-86-9	0.002	6,180	2.06%		
	magnesium oxide	1309-48-4	0.001	3,090	1.03%		
	calcium oxide	1305-78-8	0.001	3,090	1.03%		
Element	carbon	7440-44-0	0.005	15,450	79.37%	0.0063	1.95%
	silicon	7440-21-3	0.001	4,017	20.63%		
Cap and lead assembly	copper	7440-50-8	0.020	61,099	9.92%	0.1993	61.59%
	iron	7439-89-6	0.179	552,726	89.74%		
	nickel	7440-02-0	0.000	862	0.14%		
	tellurium	13494-80-9	0.000	1,232	0.20%		
Termination plating	tin	7440-31-5	0.010	30,899	100.00%	0.0100	3.09%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	3,090	100.00%	0.0010	0.31%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.010	30,899	100.00%	0.0100	3.09%
Total Weight			0.3236				

* Weights are approximate.



Material Declaration Data Sheet

CFQ18 (Formerly CFQ 1/8)

Carbon Film Resistor - Tin Plating on Cooper Wire



Date: **November 13, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **0.2031**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.059	288,331	96.00%	0.0610	30.03%
	silicon oxide	7631-86-9	0.001	6,007	2.00%		
	magnesium oxide	1309-48-4	0.001	3,003	1.00%		
	calcium oxide	1305-78-8	0.001	3,003	1.00%		
Element	carbon	7440-44-0	0.003	14,993	78.95%	0.0039	1.90%
	silicon	7440-21-3	0.001	3,998	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	3,998	0.65%	0.1257	61.87%
	copper	7440-50-8	0.125	614,697	99.35%		
Termination plating	tin	7440-31-5	0.006	29,985	100.00%	0.0061	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.000	1,999	100.00%	0.0004	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.006	29,985	100.00%	0.0061	3.00%
Total Weight			0.2031				

* Weights are approximate.



Material Declaration Data Sheet

CFQ14 (Formerly CFQ 1/4)

Carbon Film Resistor - Tin Plating on Cooper Wire

Date: **November 13, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.2670**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.077	288,000	96.00%	0.0801	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.004	15,000	78.95%	0.0051	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	4,000	0.65%	0.1653	61.90%
	copper	7440-50-8	0.164	615,000	99.35%		
Termination plating	tin	7440-31-5	0.008	30,000	100.00%	0.0080	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0005	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.008	30,000	100.00%	0.0080	3.00%
Total Weight			0.2670				

* Weights are approximate.



Material Declaration Data Sheet

CFQ12 (Formerly CFQ 1/2)

Carbon Film Resistor - Tin Plating on Cooper Wire



Date: **November 13, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **0.3220**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.093	288,000	96.00%	0.0966	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.005	15,000	78.95%	0.0061	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	4,000	0.65%	0.1993	61.90%
	copper	7440-50-8	0.198	615,000	99.35%		
Termination plating	tin	7440-31-5	0.010	30,000	100.00%	0.0097	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0006	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.010	30,000	100.00%	0.0097	3.00%
Total Weight			0.3220				

* Weights are approximate.



Material Declaration Data Sheet

CFQ1 (Formerly CFQ 1)

Carbon Film Resistor - Tin Plating on Cooper Wire



Date: **November 13, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **0.3650**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.105	288,000	96.00%	0.1095	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.005	15,000	78.95%	0.0069	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	4,000	0.65%	0.2259	61.90%
	copper	7440-50-8	0.224	615,000	99.35%		
Termination plating	tin	7440-31-5	0.011	30,000	100.00%	0.0110	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0007	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.011	30,000	100.00%	0.0110	3.00%
Total Weight			0.3650				

* Weights are approximate.



Material Declaration Data Sheet

CFQ2 (Formerly CFQ 2)

Carbon Film Resistor - Tin Plating on Cooper Wire

Date: **November 13, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.3970**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.114	288,000	96.00%	0.1191	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.006	15,000	78.95%	0.0075	1.90%
	silicon	7440-21-3	0.002	4,000	21.05%		
Cap and lead assembly	iron	7439-89-6	0.002	4,000	0.65%	0.2457	61.90%
	copper	7440-50-8	0.244	615,000	99.35%		
Termination plating	tin	7440-31-5	0.012	30,000	100.00%	0.0119	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0008	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.012	30,000	100.00%	0.0119	3.00%
Total Weight			0.3970				

* Weights are approximate.



Material Declaration Data Sheet

CFQM14 (Formerly CFQM 1/4)

Mini - Carbon Film Resistor - Tin Plating on Cooper Wire

Date: **November 13, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.2031**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.059	288,331	96.00%	0.0610	30.03%
	silicon oxide	7631-86-9	0.001	6,007	2.00%		
	magnesium oxide	1309-48-4	0.001	3,003	1.00%		
	calcium oxide	1305-78-8	0.001	3,003	1.00%		
Element	carbon	7440-44-0	0.003	14,993	78.95%	0.0039	1.90%
	silicon	7440-21-3	0.001	3,998	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	3,998	0.65%	0.1257	61.87%
	copper	7440-50-8	0.125	614,697	99.35%		
Termination plating	tin	7440-31-5	0.006	29,985	100.00%	0.0061	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.000	1,999	100.00%	0.0004	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.006	29,985	100.00%	0.0061	3.00%
Total Weight			0.2031				

* Weights are approximate.



Material Declaration Data Sheet

CFQM12 (Formerly CFQM 1/2)

Mini - Carbon Film Resistor - Tin Plating on Cooper Wire

Date: **November 13, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.2670**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.077	288,000	96.00%	0.0801	30.00%
	silicon oxide	7631-86-9	0.002	6,000	2.00%		
	magnesium oxide	1309-48-4	0.001	3,000	1.00%		
	calcium oxide	1305-78-8	0.001	3,000	1.00%		
Element	carbon	7440-44-0	0.004	15,000	78.95%	0.0051	1.90%
	silicon	7440-21-3	0.001	4,000	21.05%		
Cap and lead assembly	iron	7439-89-6	0.001	4,000	0.65%	0.1653	61.90%
	copper	7440-50-8	0.164	615,000	99.35%		
Termination plating	tin	7440-31-5	0.008	30,000	100.00%	0.0080	3.00%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	2,000	100.00%	0.0005	0.20%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.008	30,000	100.00%	0.0080	3.00%
Total Weight			0.2670				

* Weights are approximate.



Material Declaration Data Sheet

CFQM1 (Formerly CFQM 1)

Mini - Carbon Film Resistor - Tin Plating on Cooper Wire

Date: **November 13, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.3236**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic	aluminum oxide	1344-28-1	0.093	287,365	95.88%	0.0970	29.97%
	silicon oxide	7631-86-9	0.002	6,180	2.06%		
	magnesium oxide	1309-48-4	0.001	3,090	1.03%		
	calcium oxide	1305-78-8	0.001	3,090	1.03%		
Element	carbon	7440-44-0	0.005	15,450	79.37%	0.0063	1.95%
	silicon	7440-21-3	0.001	4,017	20.63%		
Cap and lead assembly	iron	7439-89-6	0.001	4,017	0.65%	0.1993	61.59%
	copper	7440-50-8	0.198	611,902	99.35%		
Termination plating	tin	7440-31-5	0.010	30,899	100.00%	0.0100	3.09%
Under-coat	phenol, polymer w/ formaldehyde	9003-35-4	0.001	3,090	100.00%	0.0010	0.31%
Over-coat	bisphenol a, epichlorohydrin polymer	25068-38-6	0.010	30,899	100.00%	0.0100	3.09%
Total Weight			0.3236				

* Weights are approximate.