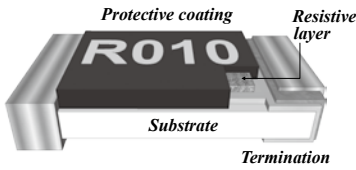


FBF

■ Metal Paste Type High Power Lead Free Chip Resistors



FEATURES

- Low resistance and high precision (1%).
- Excellent reliability and suitable cost.
- Suitable for lead free soldering.
- RoHS compliant & Halogen Free.

APPLICATION

- Consumer electronics, M/B.
- Battery pack, BTC.
- Notebook, Tablet PC.
- Portable Device, Electroni Equipment.

PART NUMBER

FBF	25	F	P	P	R100	TCR	Special Code
Type □□□□	Size □□	Tolerance □	Packing □	Watt □	R Value □□□□		
FBF Metal Paste	03 0603 05 0805 06 1206 12 1210 20 2010 25 2512	F = ±1% G = ±2% J = ±5%	T = Paper Tape 5Kpcs P = Plastic Tape 4Kpcs	"-" = Standard *P = Power Enhance	XXXX 4 digit	No special code- Null special code- "-"	"Null" Standard K: R010~R018 Controlcode

RATING

Type	Normal Type Power Rating @ 70°C	Power Type Rating Power @ 70°C	Resistance Tolerance (%)	Temperature Coefficient of Resistance (TCR; ppm/°C)	Resistance Range (mΩ)		Standard Resistance Values
					Min.	Max.	
FBF03 0603	1/8W	*1/4W	±1%, ±2%, ±5%	±200 ±100	40 100	91 910	
FBF05 0805	1/4W	*1/2W	±1%, ±2%, ±5%	±400~±200 ±100	10 47	46 910	E-24
FBF06 1206	1/3W	*3/4W	±1%, ±2%, ±5%	±400~±200 ±100	10 47	46 910	Special Request
FBF12 1210	2/3W	*3/4W	±1%, ±2%, ±5%	±400~±200 ±100	10 47	46 910	Please Contact Factory
FBF20 2010	3/4W	*1W	±1%, ±2%, ±5%	±400~±200 ±100	10 47	46 910	
FBF25 2512	1W	*2W	±1%, ±2%, ±5%	±400~±200 ±100	10 47	46 910	

Note: (1) RCWV = (P×R)^{1/2} or Max. RCWV listed above, whichever is lower.

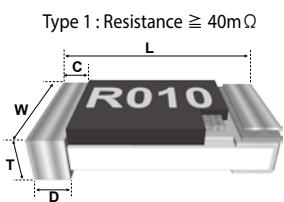
RCWV : Rated Continue Working Voltage(V) · P : Rated Power(W) · R : Resistance Value(Ω)

(2) Above 2512 size, solder-pad and trace size should be >300 μm² and board surface temperature should not exceed 105°C when applying full rated power.

GUIDE OF CURRENT SENSING RESISTORS

Series	Product Type	Resistance Range (<1 Ω)	Power Type	AEC Q200
FMF	Metal Strip	0mΩ~220mΩ	V	V
FOF	Metal Foil	2mΩ~700mΩ	V	
FBF	Metal Paste	10mΩ~910mΩ	V	
FPF	High Power	50mΩ~910mΩ	V	V
FCF-E	Normal	50mΩ~910mΩ		

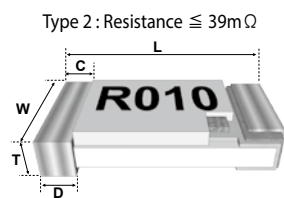
DIMENSIONS



Type 1 : Resistance ≥ 40mΩ

unit: mm

Type 1	L	W	C	D	T
FBF03	1.60±0.10	0.80±0.10	0.30±0.20	0.30±0.20	0.45±0.10
FBF05	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.10
FBF06	3.10±0.10	1.60±0.10	0.50±0.25	0.50±0.25	0.55±0.10
FBF12	3.10±0.10	2.60±0.10	0.50±0.25	0.50±0.25	0.55±0.10
FBF20	5.00±0.20	2.50±0.20	0.60±0.25	0.60±0.25	0.60±0.10
FBF25	6.30±0.20	3.10±0.20	0.60±0.25	0.90±0.25	0.60±0.15

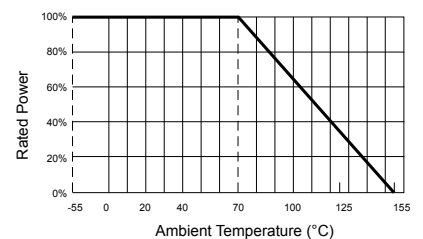


Type 2 : Resistance ≤ 39mΩ

unit: mm

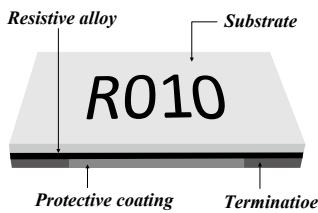
Type 2	L	W	C	D	T
FBF03	1.60±0.10	0.80±0.10	0.30±0.20	0.50±0.20	0.50±0.10
FBF05	2.00±0.10	1.25±0.10	0.40±0.20	0.65±0.20	0.60±0.10
FBF06	3.10±0.10	1.60±0.10	0.50±0.25	0.90±0.25	0.65±0.10
FBF12	3.10±0.10	2.60±0.10	0.50±0.25	0.90±0.25	0.65±0.10
FBF20	5.00±0.20	2.50±0.20	0.60±0.25	1.25±0.25	0.65±0.10
FBF25	6.30±0.20	3.10±0.20	0.60±0.25	1.90±0.25	0.65±0.15

POWER DE-RATING CURVE



Maximum dissipation in percentage of rated power as a function of the ambient temperature for 0603, 0805, 1206, 1210, 2010, 2512

Power/Anti-Sulfur Lead Free Current Sensing Resistors



FEATURES

- Ultra low and stable TCR performance.
- High power rating and compact size.
- High reliability and stability.
- Reduced size of final equipment.
- RoHS exemption free & Lead free.
- ASTM B-809 105C 1000hrs compliant.

APPLICATION

- Power supply.
- PDA.
- Digital meter.
- Computer.
- Automotives.
- Battery charger.
- DC-DC power converter.

PART NUMBER

FOF	25	F	P	J	R005	N	SS
Type □□□	Size □□	Tolerance □	Packing □	Watt □	R Value □□□□	TCR □	Special Code □□
FOF Metal Foil	02 0402 03 0603 05 0805 06 1206 25 2512	D = ±0.5% F = ±1% J = ±5%	T =Paper tape – 5 Kpcs V =Paper tape – 10Kpcs P =Plastic tape – 4Kpcs	E =1/3W F =1/2W G =3/4W H =1W J =2W	XXXX 4 digit	N =100PPM X =70ppm P =50PPM	SS : Standard

RATING

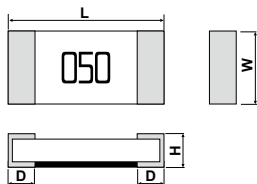
Series No.	FOF25	FOF06	FOF05	FOF03	FOF02
Size code	2512 (6432)	1206 (3216)	0805 (2012)	0603 (1608)	0402 (1005)
Resistance Tolerance	±5% , ±1% , ±0.5% (only for TC50)				
Resistance Range	2~450, 700 mΩ	3~700 mΩ	3~500 mΩ	5~75 mΩ	5~25 mΩ
TCR (ppm/°C)	2~9mΩ: ±100 10~700mΩ: ±50	3~9mΩ: ±100 10~700mΩ: ±50	3~9mΩ: ±100 10~500mΩ: ±50	5~9mΩ: ±100 10~75mΩ: ±50	5~25mΩ: ±100
Max. power at Tamb=70°C	2W	1W	3/4W	1/2W	1/3W
Operation Temperature	-55 ~ +155°C				

Note : (1) Max. Operation Current : So called RCWC (Rated Continuous Working Current) is determined by $RCWC = \sqrt{\text{Rated Power} / \text{Resistance Value}}$ listed above

GUIDE OF CURRENT SENSING RESISTORS

Series	Product Type	Resistance Range (<1 Ω)	Power Type	AEC Q200
FMF	Metal Strip	0mΩ~220mΩ	V	V
FOF	Metal Foil	2mΩ~700mΩ	V	
FBF	Metal Paste	10mΩ~910mΩ	V	
FPF	High Power	50mΩ~910mΩ	V	V
FCF-E	Normal	50mΩ~910mΩ		

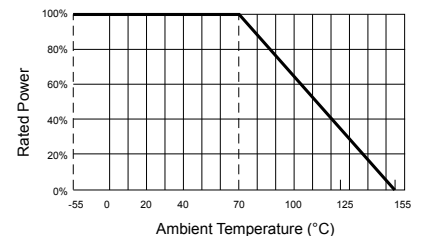
DIMENSIONS



Type	R-value	L	W	H	D
FOF25	R002	6.4±0.30	3.2±0.30	0.65±0.20	2.8±0.30
	R003	6.4±0.30	3.2±0.30	0.65±0.20	2.6±0.30
	R004-R009	6.4±0.30	3.2±0.30	0.65±0.20	1.05±0.30
	R010-R049	6.4±0.30	3.2±0.30	0.65±0.20	1.05±0.30
	R050-R700	6.4±0.30	3.2±0.30	0.65±0.20	1.05±0.30
FOF06	R003	3.3±0.20	1.7±0.20	0.65±0.20	1.20±0.30
	R004-R008	3.3±0.20	1.7±0.20	0.65±0.20	0.68±0.30
	R009-R049	3.3±0.20	1.7±0.20	0.65±0.20	0.68±0.30
	R050-R700	3.3±0.20	1.7±0.20	0.65±0.20	0.68±0.30
	R003	2.10±0.20	1.35±0.20	0.65±0.20	0.65±0.20
FOF05	R004	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20
	R005-R007	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20
	R008-R049	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20
	R050-R500	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20
	R005	1.7±0.20	0.9±0.20	0.65±0.20	0.50±0.20
FOF03	R006-R009	1.7±0.20	0.9±0.20	0.65±0.20	0.40±0.20
	R010-R049	1.7±0.20	0.9±0.20	0.65±0.20	0.40±0.20
	R050-R075	1.7±0.20	0.9±0.20	0.65±0.20	0.40±0.20
	R005-R025	1.0±0.10	0.55±0.10	0.30±0.05	0.23±0.10

POWER DE-RATING CURVE

Operating Temperature Range: -55 to +155 deg.C



Maximum dissipation in percentage of rated power as a function of the ambient temperature

MLCC
Chip R
Coil