DATA SHEET

SMD common mode chokes
EMI-suppression products

Supersedes data of September 2004

2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

SMD COMMON MODE CHOKES FOR EMI-SUPPRESSION

General data

ITEM	SPECIFICATION
Strip material	copper (Cu), tin (Sn) plated
Solderability	*“IEC 60068-2-58”*, Part 2, Test Ta, method 1
Taping method	*“IEC 60286-3”* , *“EIA 481-1-A”* and *“EIA 481-2”*

Grades, parameters and type numbers

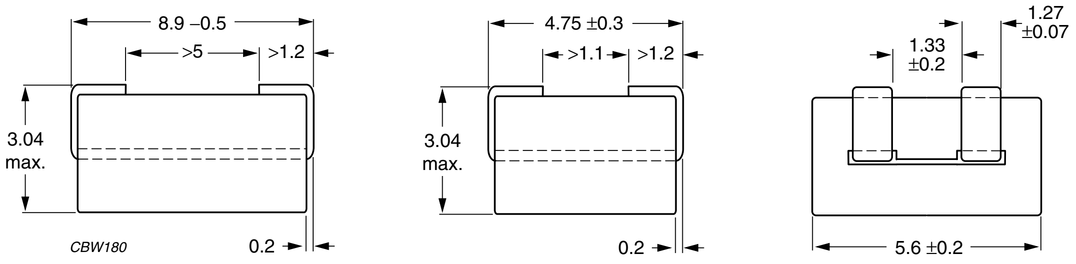
GRADE	$\|Z_{typ}\|$(1) (Ω)	at f (MHz)	TYPE NUMBER
CMS2-5.6/3/4.8; mass ≈0.3 g			
4S2	21	25	CMS2-5.6/3/4.8-4S2
	35	100	
	50	300	
CMS2-5.6/3/8.9; mass ≈0.6 g			
4S2	38	25	CMS2-5.6/3/8.9-4S2
	60	100	

GRADE	$\|Z_{typ}\|$(1) (Ω)	at f (MHz)	TYPE NUMBER
CMS4-11/3/4.8; mass ≈0.6 g			
4S2 inner channel	12	25	CMS4-11/3/4.8-4S2
	23	100	
	42	300	
4S2 outer channel	15	25	
	30	100	
	50	300	
CMS4-11/3/8.9; mass ≈1.1 g			
4S2 inner channel	23	25	CMS4-11/3/8.9-4S2
	45	100	
	82	300	
4S2 outer channel	27	25	
	58	100	
	97	300	

Note

1. Typical values, $|Z|_{min}$ is −20%.
   DC resistance <0.6 mΩ.

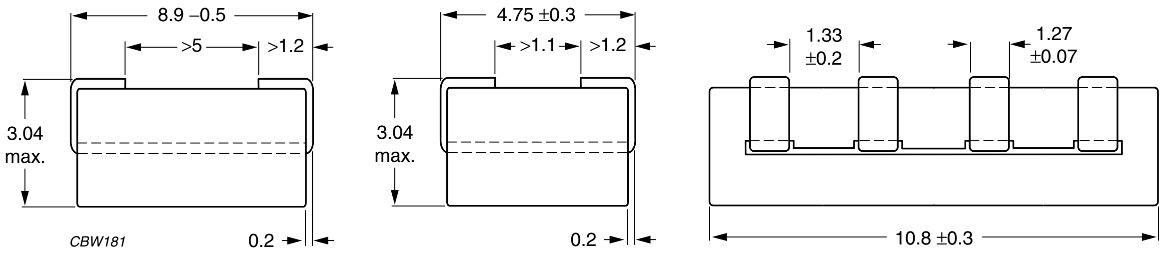
Mechanical data



a. CMS2-5.6/3/8.9 (side view). b. CMS2-5.6/3/4.8 (side view). Front view (a and b).

Dimensions in mm.

Fig.1 CMS2-5.6/3/4.8 and CMS2-5.6/3/8.9.

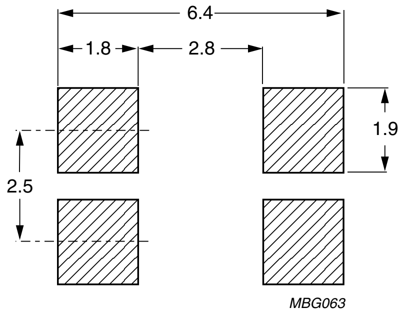


a. CMS4-11/3/8.9 (side view).
b. CMS4-11/3/4.8 (side view).
Front view (a and b).

Dimensions in mm.

Fig.2 CMS4-11/3/4.8 and CMS4-11/3/8.9.

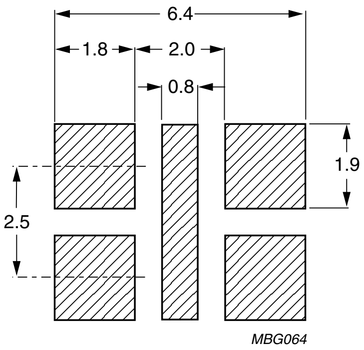
Recommended dimensions of solder lands



Dimensions in mm.

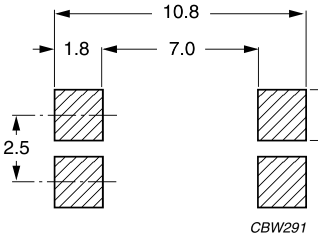
Dimensions of solder lands are based on a solder paste layer thickness of approximately 200 µm (≈0.7 mg solder paste per mm^2).

Fig.3 Solder lands for reflow soldering of CMS2-5.6/3/4.8.



Dimensions in mm.

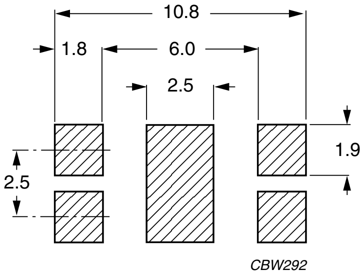
Fig.4 Solder lands for wave soldering of CMS2-5.6/3/4.8.



Dimensions in mm.

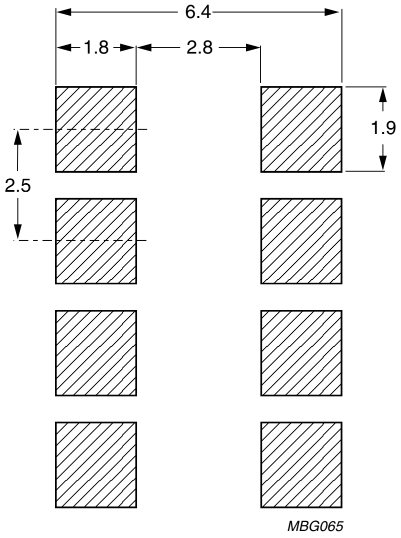
Dimensions of solder lands are based on a solder paste layer thickness of approximately 200 µm (≈0.7 mg solder paste per mm^2).

Fig.5 Solder lands for reflow soldering of CMS2-5.6/3/8.9.



Dimensions in mm.

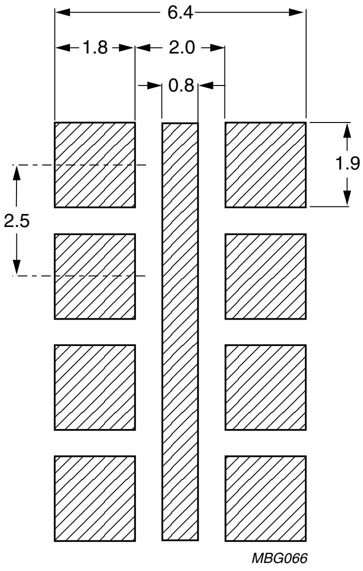
Fig.6 Solder lands for wave soldering of CMS2-5.6/3/8.9.



Dimensions in mm.

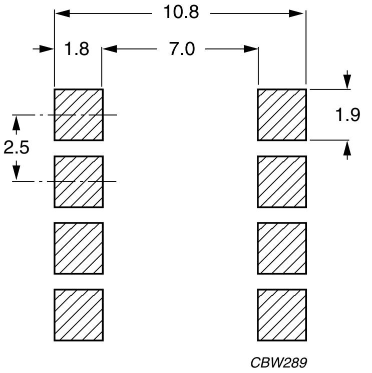
Dimensions of solder lands are based on a solder paste layer thickness of approximately 200 µm (≈0.7 mg solder paste per mm^2).

Fig.7 Solder lands for reflow soldering of CMS4-11/3/4.8.



Dimensions in mm.

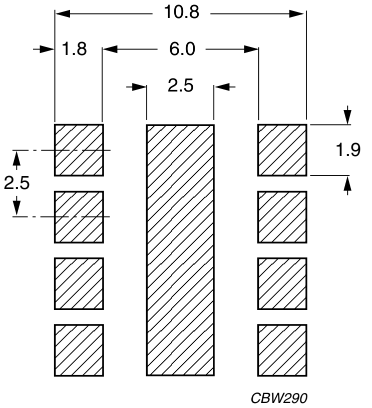
Fig.8 Solder lands for wave soldering of CMS4-11/3/4.8.



Dimensions in mm.

Dimensions of solder lands are based on a solder paste layer thickness of approximately 200 µm (≈0.7 mg solder paste per mm^2).

Fig.9 Solder lands for reflow soldering of CMS4-11/3/8.9.



Dimensions in mm.

Fig.10 Solder lands for wave soldering of CMS4-11/3/8.9.

Soldering profiles

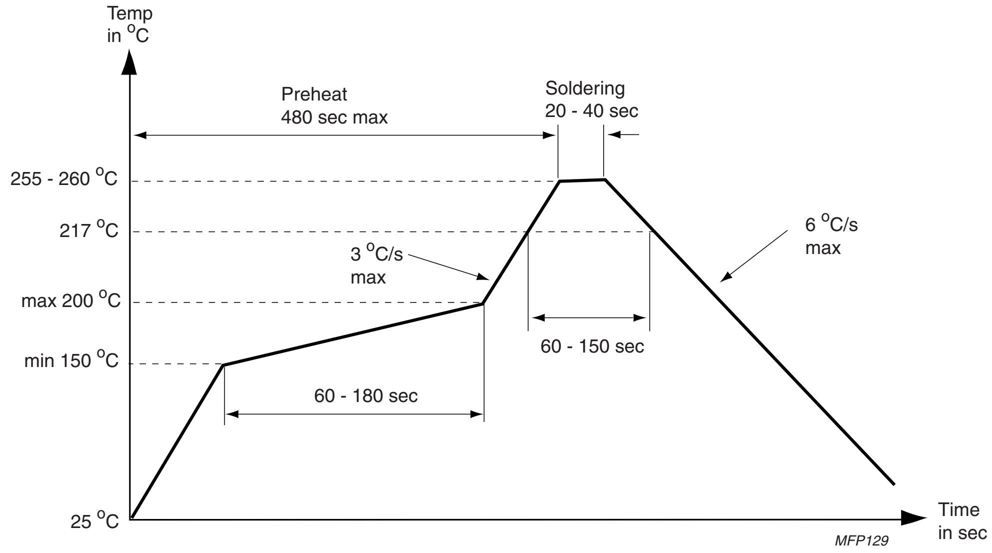
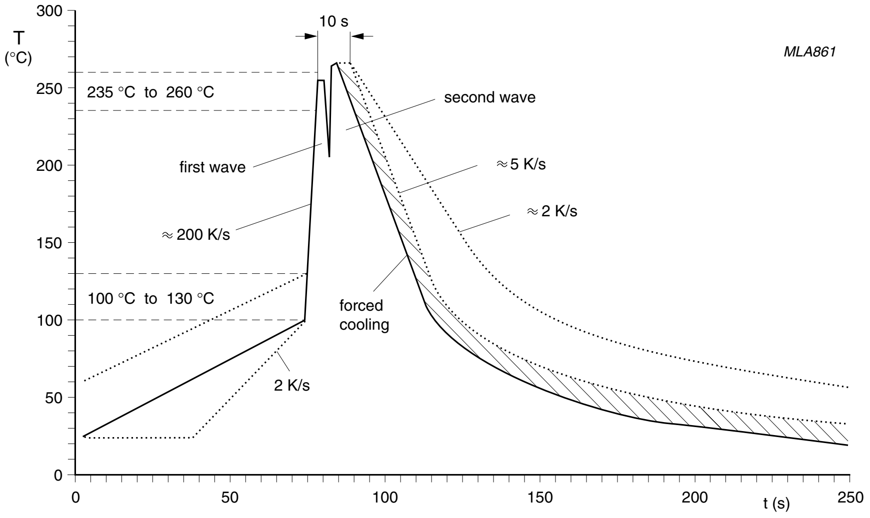


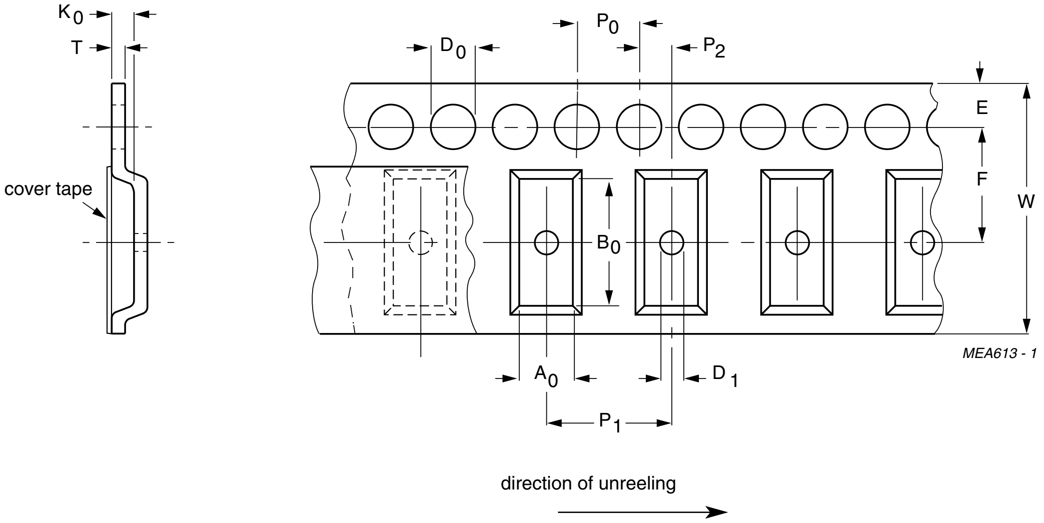
Fig.11 Reflow soldering.



Typical values (solid line).
Process limits (dotted lines).

Fig.12 Double wave soldering.

BLISTER TAPE AND REEL DIMENSIONS

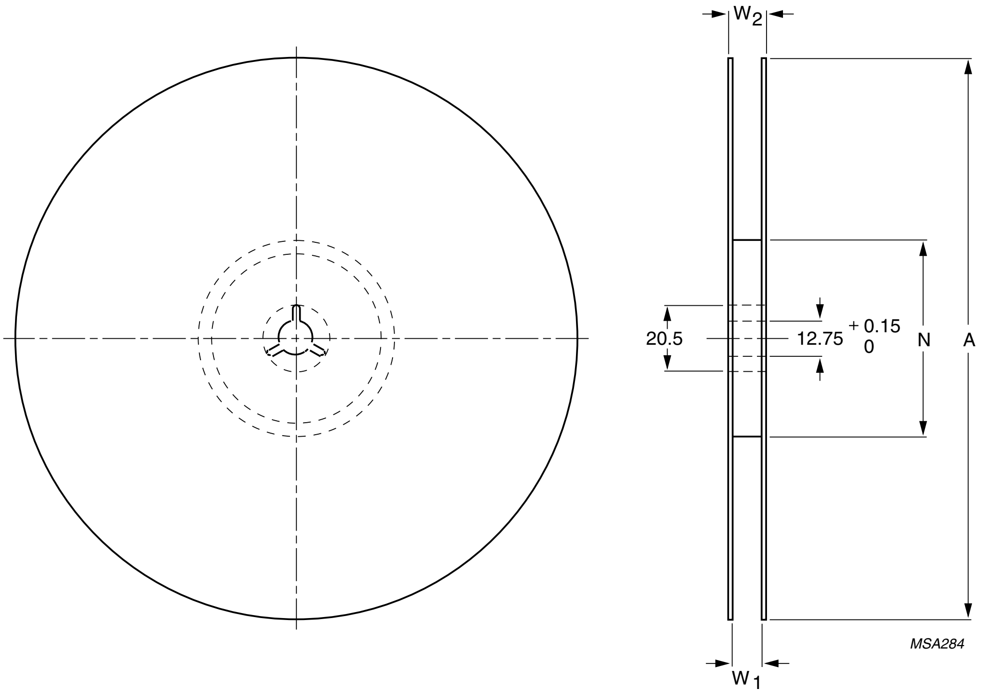


For dimensions see Table 1.

Fig.13 Blister tape.

Table 1 Physical dimensions of blister tape; see Fig.13

SIZE	DIMENSIONS (mm)			
	CMS2-5.6/3/4.8	**CMS2-5.6/3/8.9**	**CMS2-5.6/3/8.9**	**CMS4-11/3/8.9**
A_0	5.26	5.99	5.23	10.13
B_0	6.07	9.09	11.18	11.56
K_0	3.18	3.18	4.5	4.5
T	0.3	0.33	0.34	0.36
W	12	16	24	24
E	1.75	1.75	1.75	1.75
F	5.5	7.5	11.75	11.5
D_0	1.5	1.5	1.5	1.5
D_1	≥1.5	≥1.5	≥1.5	≥1.5
P_0	4.0	4.0	4.0	4.0
P_1	8.0	8.0	8.0	16.0
P_2	2.0	2.0	2.0	2.0



Dimensions in mm.
For dimensions see Table 2.

Fig.14 Reel.

Table 2 Reel dimensions; see Fig.14

SIZE	DIMENSIONS (mm)			
	A	N	W_1	W_2
12	330	100 ±5	12.4	≤16.4
16	330	100 ±5	16.4	≤20.4
24	330	100 ±5	24.4	≤28.4

DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype	prot	These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
Design-in	des	These products are recommended for new designs.
Preferred		These products are recommended for use in current designs and are available via our sales channels.
Support	sup	These products are **not** recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.