

Multilayer Metal Power Inductors MCOIL™ LSCN series

for General Electronic Equipment for Consumer

Code in front of Series have been extracted from Part number, which describes the segment of products, such as kinds and characteristics.

REFLOW

PART NUMBER

* Operating Temp.: -40~+125°C(Including self-generated heat)

L	S	C	N	A	2	0	1	2	H	K	T	1	R	0	M	
①	②	③	④	⑤	⑥	⑦	⑧									

① Series

Code (1)(2)(3)(4)	
LSCN	Multilayer Metal Power Inductor for General Electronic Equipment for Consumer

(1) Product Group

Code	
L	Inductors

(2) Category

Code	Recommended equipment	Quality Grade
S	General Electronic Equipment for Consumer	3

② Features

Code	Feature
A	L-shape electrode
B	L-shape electrode with polarity marking
D	Bottom electrode with polarity marking
E	5-surface electrode

③ Dimensions (L × W)

Code	Type (inch)	Dimensions (L × W) [mm]
1005	1005(0402)	1.0 × 0.5
1210	1210(0504)	1.25 × 1.05
1412	1412(0505)	1.4 × 1.2
1608	1608(0603)	1.6 × 0.8
2012	2012(0805)	2.0 × 1.25
2016	2016(0806)	2.0 × 1.6

④ Thickness

Code	Thickness [mm]
EK	0.50 max
EE	0.55 max
FK	0.60 max
FE	0.65 max
HK	0.80 max
KK	1.0 max

(3) Type

Code	
C	Metal Multilayer

(4) Features, Characteristics

Code	
N	Standard Power choke

⑤ Packaging

Code	Packaging
T	Taping

⑥ Nominal inductance

Code (example)	Nominal inductance [μH]
R24	0.24
R47	0.47
1R0	1.0

※R=Decimal point

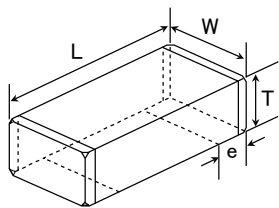
⑦ Inductance tolerance

Code	Inductance tolerance
M	±20%

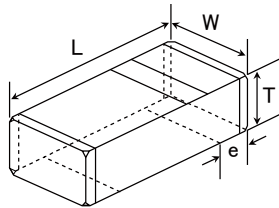
⑧ Internal code

■ STANDARD EXTERNAL DIMENSIONS / STANDARD QUANTITY

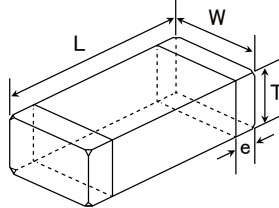
L-shape electrode



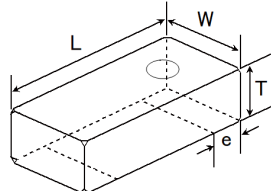
L-shape electrode with polarity marking



5-surface electrode



Bottom electrode with polarity marking



Type	L	W	T	e	Standard quantity [pcs]	
					Paper tape	Embossed tape
1005EE (0402)	1.0±0.2 (0.039±0.008)	0.5±0.2 (0.020±0.008)	0.55 max (0.022 max)	0.25±0.15 (0.010±0.006)	10000	—
1210EK (0504)	1.25±0.1 (0.049±0.004)	1.05±0.1 (0.041±0.004)	0.50 max (0.020 max)	0.30±0.2 (0.012±0.008)	5000	—
1412FE (0505)	1.4±0.2 (0.055±0.008)	1.2±0.2 (0.047±0.008)	0.65 max (0.026 max)	0.50±0.2 (0.02±0.008)	4000	—
1608FK (0603)	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.60 max (0.024 max)	0.3±0.2 (0.012±0.008)	4000	—
1608FE (0603)	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.65 max (0.026 max)	0.3±0.2 (0.012±0.008)	4000	—
1608HK (0603)	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.80 max (0.031 max)	0.4±0.2 (0.016±0.008)	4000	—
1608KK (0603)	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	1.0 max (0.039 max)	0.3±0.2 (0.012±0.008)	—	3000
2012HK (0805)	2.0±0.2 (0.079±0.008)	1.25±0.2 (0.049±0.008)	0.80 max (0.031 max)	0.5±0.3 (0.02±0.012)	4000	—
2012KK (0805)	2.0±0.2 (0.079±0.008)	1.25±0.2 (0.049±0.008)	1.0 max (0.039 max)	0.5±0.3 (0.02±0.012)	—	3000
2016FE (0806)	2.0±0.2 (0.079±0.008)	1.6±0.2 (0.063±0.008)	0.65 max (0.026 max)	0.5±0.3 (0.02±0.012)	4000	—

Unit: mm (inch)

PART NUMBER

1005 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCNB1005EETR10MB	MCEE1005TR10MHN	RoHS	0.10	±20%	50	41	2.0	2.0	1	0.55
LSCNB1005EETR22MB	MCEE1005TR22MHN	RoHS	0.22	±20%	80	65	1.6	1.6	1	0.55
LSCNB1005EETR47MB	MCEE1005TR47MHN	RoHS	0.47	±20%	140	114	1.2	1.2	1	0.55
LSCNB1005EET1R0MB	MCEE1005T1R0MHN	RoHS	1.0	±20%	300	244	1.0	0.8	1	0.55

1210 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCNB1210EKT47MB	MCEK1210TR47MHN	RoHS	0.47	±20%	82	70	2.3	1.6	1	0.50
LSCNB1210EKT1R0MB	MCEK1210T1R0MHN	RoHS	1.0	±20%	179	157	1.5	1.1	1	0.50
LSCNB1210EKT1R5MB	MCEK1210T1R5MHN	RoHS	1.5	±20%	240	200	1.2	0.9	1	0.50

1412 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCND1412FETR33MC	MCFE1412TR33MJB	RoHS	0.33	±20%	32	29	5.0	3.7	1	0.65
LSCND1412FETR47MC	MCFE1412TR47MJB	RoHS	0.47	±20%	42	39	3.0	3.1	1	0.65

1608 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCNA1608FKTR24MA	MCFK1608TR24M	RoHS	0.24	±20%	50	40	2.3	2.1	1	0.60
LSCNA1608FKTR47MA	MCFK1608TR47M	RoHS	0.47	±20%	85	69	1.9	1.6	1	0.60
LSCNA1608FKT1R0MA	MCFK1608T1R0M	RoHS	1.0	±20%	224	182	1.5	0.9	1	0.60
LSCNE1608FETR24MA	MCFE1608TR24MG	RoHS	0.24	±20%	100	75	2.6	1.5	1	0.65
LSCNE1608FETR47MA	MCFE1608TR47MG	RoHS	0.47	±20%	150	114	2.0	1.2	1	0.65
LSCNE1608FET1R0MA	MCFE1608T1R0MG	RoHS	1.0	±20%	340	270	1.4	0.8	1	0.65
LSCNB1608HKTR24MD	MCHK1608TR24MKN	RoHS	0.24	±20%	24	20	4.3	3.7	1	0.80
LSCNB1608HKTR47MD	MCHK1608TR47MKN	RoHS	0.47	±20%	43	38	3.3	2.7	1	0.80
LSCNB1608HKT1R5MD	MCHK1608T1R5MKN	RoHS	0.56	±20%	55	45	2.7	2.6	1	0.80
LSCNB1608HKT1R0MD	MCHK1608T1R0MKN	RoHS	1.0	±20%	110	89	2.2	1.6	1	0.80
LSCNB1608HKT1R5MD	MCHK1608T1R5MKN	RoHS	1.5	±20%	200	160	1.7	1.3	1	0.80
LSCNB1608HKT2R2MD	MCHK1608T2R2MKN	RoHS	2.2	±20%	292	237	1.5	1.2	1	0.80
LSCNB1608KKTR24MA	MCKK1608TR24M N	RoHS	0.24	±20%	38	35	2.8	2.6	1	1.00
LSCNB1608KKTR47MA	MCKK1608TR47M N	RoHS	0.47	±20%	55	44	2.4	2.0	1	1.00
LSCNB1608KKT1R0MA	MCKK1608T1R0M N	RoHS	1.0	±20%	123	100	2.0	1.3	1	1.00

2012 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCNA2012HKTR24MA	MCHK2012TR24M	RoHS	0.24	±20%	24	19	4.32	3.60	1	0.80
LSCNA2012HKTR47MA	MCHK2012TR47M	RoHS	0.47	±20%	36	30	3.21	3.15	1	0.80
LSCNA2012HKT1R0MA	MCHK2012T1R0M	RoHS	1.0	±20%	111	90	2.26	1.47	1	0.80
LSCNA2012KKTR24MA	MCKK2012TR24M	RoHS	0.24	±20%	25	20	6.2	4.0	1	1.00
LSCNA2012KKTR47MA	MCKK2012TR47M	RoHS	0.47	±20%	39	32	4.5	3.1	1	1.00
LSCNA2012KKT1R0MA	MCKK2012T1R0M	RoHS	1.0	±20%	90	73	3.6	2.1	1	1.00
LSCNE2012HKTR11MD	MCHK2012TR11MKG	RoHS	0.11	±20%	12	9.1	6.9	5.8	1	0.80
LSCNE2012HKTR24MD	MCHK2012TR24MKG	RoHS	0.24	±20%	17	14	6.0	4.8	1	0.80
LSCNE2012HKTR47MD	MCHK2012TR47MKG	RoHS	0.47	±20%	32	26	4.8	4.0	1	0.80
LSCND2012HKTR47MD	MCHK2012TR47MKB	RoHS	0.47	±20%	26	21	4.8	4.0	1	0.80

2016 type

New part number	Old part number (for reference)	EHS	Nominal inductance [μ H]	Inductance tolerance	DC Resistance [m Ω]		Rated current(I _{dc1}) [A] (max.)	Rated current(I _{dc2}) [A] (max.)	Measuring frequency [MHz]	Thickness [mm] (max.)
					(max.)	(typ.)				
LSCNE2016FETR47MCB	MCFE2016TR47MJG B	RoHS	0.47	±20%	45	40	4.0	3.2	1	0.65
LSCNE2016FETR68MCB	MCFE2016TR68MJG B	RoHS	0.68	±20%	60	50	3.0	2.5	1	0.65
LSCNE2016FET1R0MCB	MCFE2016T1R0MJG B	RoHS	1.0	±20%	70	60	2.8	2.3	1	0.65

※I_{dc1} is the DC value at which the initial L value is decreased within 30% by the application of DC bias. (at 20°C)

※I_{dc2} is the DC value at which the temperature of element is increased within 40°C by the application of DC bias. (at 20°C)

Multilayer Metal Power Inductors MCOIL™ LSCN/LCCN/LBCN/LLCN/LMCN series

PACKAGING

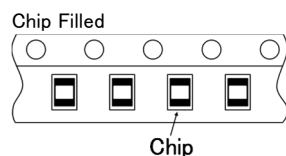
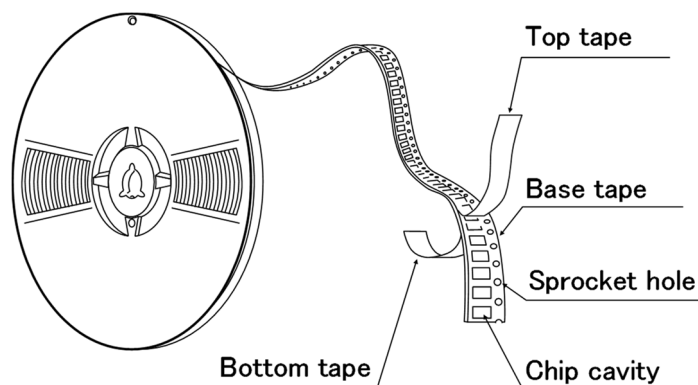
① Minimum Quantity

● Tape & Reel Packaging

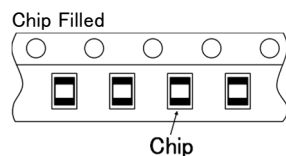
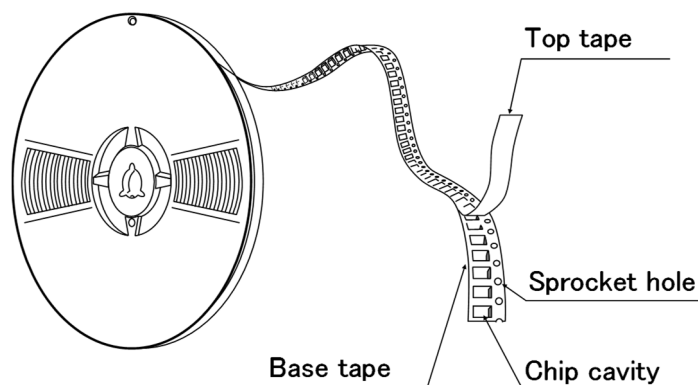
Type	Thickness		Standard Quantity [pcs]	
	Code	mm (inch)	Paper Tape	Embossed Tape
1005 (0402)	EE	0.55 max (0.022 max)	10000	—
1210 (0504)	EK	0.5 max (0.020 max)	5000	—
1412 (0505)	FE	0.65 max (0.026 max)	4000	—
1608 (0603)	FK	0.6 max (0.024 max)	4000	—
1608 (0603)	FE	0.65 max (0.026 max)	4000	—
1608 (0603)	HK	0.8 max (0.031 max)	4000	—
1608 (0603)	KK	1.0 max (0.039 max)	—	3000
2012 (0806)	HK	0.8 max (0.031 max)	4000	—
2012 (0805)	KK	1.0 max (0.039 max)	—	3000
2016 (0806)	FE	0.65 max (0.026 max)	4000	—

② Taping material

● Card board carrier tape 1005/1210/1412/1608/2012/2016 type



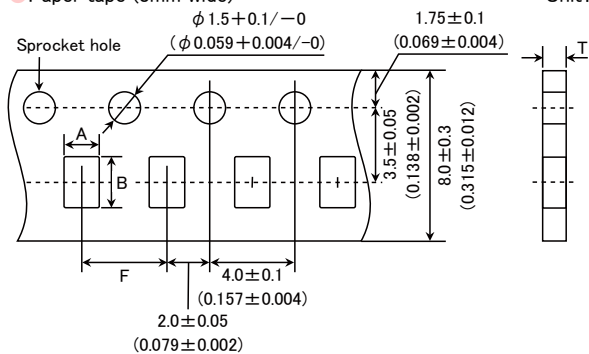
● Embossed Tape 1608/2012 type



③Taping Dimensions

● Paper tape (8mm wide)

Unit : mm (inch)

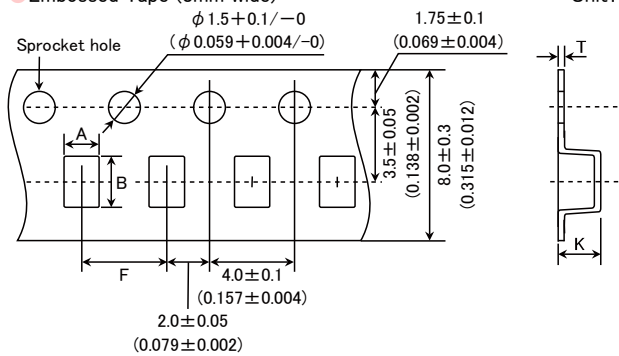


Type	Thickness		Chip cavity		Insertion Pitch	Tape Thickness
	Code	mm (inch)	A	B	F	T
1005 (0402)	EE	0.55 max (0.021 max)	0.8 (0.031)	1.3 (0.051)	2.0±0.05 (0.079±0.002)	0.64max (0.025max)
1210 (0504)	EK	0.5 max (0.020 max)	1.3 (0.051)	1.55 (0.061)	4.0±0.1 (0.157±0.004)	0.64max (0.025max)
1412 (0505)	FE	0.65 max (0.026 max)	1.6 (0.063)	1.8 (0.071)	4.0±0.1 (0.157±0.004)	0.72max (0.028max)
1608 (0603)	FK	0.6 max (0.024 max)	1.1 (0.043)	1.9 (0.075)	4.0±0.1 (0.157±0.004)	0.72max (0.028max)
1608 (0603)	FE	0.65 max (0.026 max)	1.1 (0.043)	1.9 (0.075)	4.0±0.1 (0.157±0.004)	0.72max (0.028max)
1608 (0603)	HK	0.8 max (0.031 max)	1.2 (0.047)	2.0 (0.079)	4.0±0.1 (0.157±0.004)	0.9max (0.035max)
2012 (0805)	HK	0.8 max (0.031 max)	1.65 (0.065)	2.4 (0.094)	4.0±0.1 (0.157±0.004)	0.9max (0.035max)
2016 (0806)	FE	0.65 max (0.026 max)	1.95 (0.077)	2.3 (0.091)	4.0±0.1 (0.157±0.004)	0.72max (0.028max)

Unit : mm (inch)

● Embossed Tape (8mm wide)

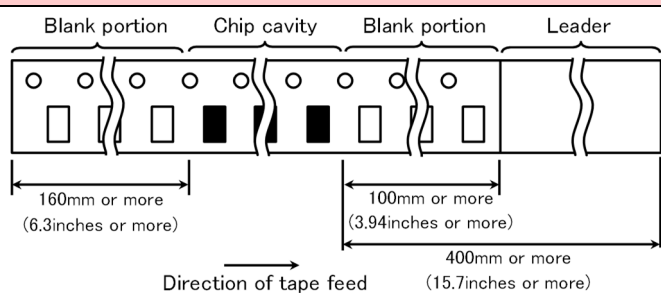
Unit: mm (inch)



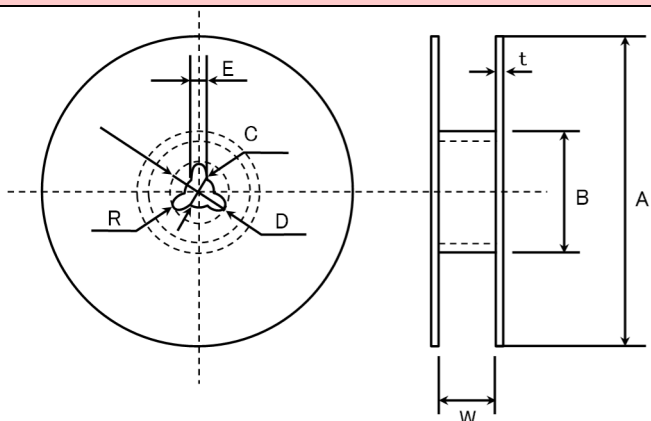
Type	Thickness		Chip cavity		Insertion Pitch	Tape Thickness	
	Code	mm (inch)	A	B	F	K	T
1608 (0603)	KK	1.0 max (0.039 max)	1.1 (0.043)	1.95 (0.077)	4.0±0.1 (0.157±0.004)	1.5 max (0.059 max)	0.3 max (0.012 max)
2012 (0805)	KK	1.0 max (0.039 max)	1.55 (0.061)	2.35 (0.093)	4.0±0.1 (0.157±0.004)	1.45 max (0.057 max)	0.3 max (0.012 max)

Unit : mm (inch)

④LEADER AND BLANK PORTION



⑤Reel Size



A	B	C	D	E	R
$\phi 178 \pm 2.0$	$\phi 50$ or more	$\phi 13.0 \pm 0.2$	$\phi 21.0 \pm 0.8$	2.0 ± 0.5	1.0

	t	W
4mm width tape	1.5max.	5 ± 1.0
8mm width tape	2.5max.	10 ± 1.5

(Unit : mm)

⑥Top tape strength

The top tape requires a peel-off force of 0.1 to 1.0N in the direction of the arrow as illustrated below.

