LNSK16

DESCRIPTION

The LNS series is manganese oxide based NTC thermistor, which shows non-linear resistance-temperature behavior. Multilayered structure has as high reliability as monoblock type, even without protective glass coating, since the active electrode and sensor layer is buried inside the ceramic body.

FEATURES

- Multilayer structure allows diverse resistance value in the same B constant
- Multilayer structure allows lower resistance at high B
- constant.
  Solder plating with Ni barrier gives high reliability for both flow
- and reflow soldering.
  Unified shape and tightly controlled dimension is fit to high mounting speed.

APPLICATIONS

- Temperature compensation for crystal oscillator (TCXO)
- Temperature compensation for Personal computer
- Temperature detection for CPU and memory device
- Temperature detection for battery pack
- Temperature compensation for contrast of LCD

ORDERING INFORMATION

LNS V 16 G 103 J P

Series

B constant

Z	3250K
K	3435K
Y	3670K
W	3890K
A	3970K
V	4150K
U	4550K
T	4750K

Chip size (mm)

10	1.0 x 0.5 x 0.5 (inches 0402)
16	1.6 x 0.8 x 0.8 (inches 0603)
20	2.0 x 1.2 x 0.8 (inches 0805)

B constant deviation range

F	¡ 1%
G	¡ 2%
H	¡ 3%

Package

P	Paper taping
E	Emboss taping
B	Bulk

Resistance deviation range

F	¡ 1£¥
H	¡ 3£¥
J	¡ 5£¥
K	¡ 10£¥

Resistance at 25 ¡

101	10 ¡¿10^1 = 100¥
102	10 ¡¿10^2 = 1 K¥
103	10 ¡¿10^3 = 10 K¥

LNSK16

1005(0402) size

Part Number	Resistance @25°C	B constant 25/85	Dissipation Constant	Maximum Power Rating	Operating Temp.
LNSZ10 _ 220_ _	22§	3250K	1mW/°C	100mW	-40~85 °C
LNSZ10 _ 300_ _	30§	3250K			
LNSZ10 _ 400_ _	40§	3250K			
LNSZ10 _ 450_ _	45§	3250K			
LNSZ10 _ 500_ _	50§	3250K			
LNSZ10 _ 600_ _	60§	3250K			
LNSZ10 _ 101_ _	100§	3250K			
LNSK10 _ 502_ _	5§	3435K			-40~125°C
LNSK10 _ 103_ _	10§	3435K			
LNSY10 _ 102_ _	1§	3670K			
LNSY10 _ 222_ _	2.2§	3670K			
LNSY10 _ 472_ _	4.7§	3670K			
LNSY10 _ 502_ _	5§	3670K			
LNSY10 _ 682_ _	6.8§	3670K			
LNSY10 _ 103_ _	10§	3670K			
LNSW10 _ 103_ _	10§	3890K			
LNSW10 _ 223_ _	22§	3890K			
LNSW10 _ 443_ _	44§	3890K			
LNSV10 _ 202_ _	2§	4150K			-40~85°C
LNSV10 _ 222_ _	2.2§	4150K			
LNSV10 _ 272_ _	2.7§	4150K			
LNSV10 _ 332_ _	3.3§	4150K			
LNSV10 _ 103_ _	10§	4150K			
LNSV10 _ 333_ _	33§	4150K			
LNSV10 _ 473_ _	47§	4150K			-40~125°C
LNSV10 _ 503_ _	50§	4150K			
LNSV10 _ 583_ _	58§	4150K			
LNSV10 _ 683_ _	68§	4150K			
LNSV10 _ 853_ _	85§	4150K			
LNSV10 _ 104_ _	100§	4150K			
LNSV10 _ 124_ _	120§	4150K			
LNSV10 _ 154_ _	150§	4150K			
LNSV10 _ 334_ _	330§	4150K			
LNSV10 _ 474_ _	470§	4150K			
LNSU10 _ 333_ _	33§	4550K			
LNSU10 _ 683_ _	68§	4550K			
LNSU10 _ 104_ _	100§	4550K			
LNSU10 _ 224_ _	220§	4550K			
LNSU10 _ 105_ _	1§	4750K			
LNST10 _ 474_ _	470§	4750K			
LNSU10 _ 504_ _	500§	4750K			
LNSU10 _ 205_ _	2 §	4750K			

Resistance @ 25°C

The zero-power resistance at the standard temperature of 25°C. The zero-power resistance means the value of DC resistance of a thermistor measured at a specified temperature, with electric load being kept so small that there is no noticeable change in the measured resistance by the influence of the applied electric load.

Bconstant 25 / 85

$B = \ln(R_0/R_1) / (1/T_0 - 1/T_1)$ Without special note, B constant is calculated from the resistance values at 25°C and 85°C [B25/85], which is the most common.

Dissipation constant (¥)

Dissipation factor is defined as the ratio at a specified ambient temperature of a change in power dissipation in a thermistor to the resultant body temperature change.

¡ /¥ = P/(T_1 - 25°C) mW/ °C ¡ /P : dissipated power ¡ /T1 : thermistor temp, 85 ¡ 0.1°C

Maximum power rating P

This is the maximum handling power, keeping its temperature not exceeding the allowed maximum temperature for operation.

¡ /P_{max} = ¥(T_{max} - T_a) ¡ /¥:dissipation constant ¡ /T_a:25°C ¡ /T_{max}:125°C

Thermal Time Constant

The time necessary for an unloaded thermistor to vary its temperature by 63.2% of the difference between its initial and final temperatures. Initial temperature is 85 ¡ 0.1°C and final temperature is 47.1 ¡ 0.1°C.

LNSK16

1608(0603) size

Part Number	Resistance @25°C	B constant 25/85	Dissipation Constant	Maximum Power Rating	Operating Temp.
LNSZ16 _ 220 _ _	22§	3250K	3mW/°C	300mW	-40~85°C
LNSZ16 _ 300 _ _	30§	3250K			
LNSZ16 _ 400 _ _	40§	3250K			
LNSZ16 _ 450 _ _	45§	3250K			
LNSZ16 _ 500 _ _	50§	3250K			
LNSZ16 _ 600 _ _	60§	3250K			
LNSZ16 _ 101 _ _	100§	3250K			
LNSK16 _ 502 _ _	5§	3435K			-40~125°C
LNSK16 _ 103 _ _	10§	3435K			
LNSY16 _ 102 _ _	1§	3670K			
LNSY16 _ 222 _ _	2.2§	3670K			
LNSY16 _ 472 _ _	4.7§	3670K			
LNSY16 _ 502 _ _	5§	3670K			
LNSY16 _ 682 _ _	6.8§	3670K			
LNSY16 _ 103 _ _	10§	3670K			
LNSW16 _ 103 _ _	10§	3890K			
LNSW16 _ 223 _ _	22§	3890K			
LNSW16 _ 443 _ _	44§	3890K			
LNSV16 _ 202 _ _	2§	4150K			-40~85°C
LNSV16 _ 222 _ _	2.2§	4150K			
LNSV16 _ 272 _ _	2.7§	4150K			
LNSV16 _ 332 _ _	3.3§	4150K			
LNSV16 _ 103 _ _	10§	4150K			
LNSV16 _ 333 _ _	33§	4150K			
LNSV16 _ 473 _ _	47§	4150K			-40~125°C
LNSV16 _ 503 _ _	50§	4150K			
LNSV16 _ 583 _ _	58§	4150K			
LNSV16 _ 683 _ _	68§	4150K			
LNSV16 _ 853 _ _	85§	4150K			
LNSV16 _ 104 _ _	100§	4150K			
LNSV16 _ 124 _ _	120§	4150K			
LNSV16 _ 154 _ _	150§	4150K			
LNSV16 _ 334 _ _	330§	4150K			
LNSV16 _ 474 _ _	470§	4150K			
LNSU16 _ 683 _ _	68§	4550K			
LNSU16 _ 104 _ _	100§	4550K			
LNSU16 _ 224 _ _	220§	4550K			
LNSU16 _ 105 _ _	1§	4750K			
LNST16 _ 474 _ _	470 §	4750K			
LNSU16 _ 504 _ _	500§	4750K			
LNSU16 _ 205 _ _	2 §	4750K			

If you want additional spec., please contact to lattron. Fax : 82-42-935-2034 Email : lattron@lattron.com

Resistance @ 25°C

The zero-power resistance at the standard temperature of 25°C. The zero-power resistance means the value of DC resistance of a thermistor measured at a specified temperature, with electric load being kept so small that there is no noticeable change in the measured resistance by the influence of the applied electric load.

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Dissipation constant (¥)

Dissipation factor is defined as the ratio at a specified ambient temperature of a change in power dissipation in a thermistor to the resultant body temperature change.

¡ /¥ = P/(T_1 - 25°C) mW/ °C ¡ /P : dissipated power ¡ /T1 : thermistor temp, 85¡ 0.1°C

Maximum power rating P

This is the maximum handling power, keeping its temperature not exceeding the allowed maximum temperature for operation.

¡ /P_{max} = ¥(T_{max} - T_a) ¡ /¥:dissipation constant ¡ /T_a:25°C ¡ /T_{max}:125°C

Thermal Time Constant

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LNSK16

2012(0805) size

Part Number	Resistance @25°C	B constant 25/85	Dissipation Constant	Maximum Power Rating	Operating Temp.
LNSK20 _ 502_ _	5§	3435K	3.5mW/°C	350mW	-40~125°C
LNSK20 _ 103_ _	10§	3435K			
LNSY20 _ 102_ _	1§	3670K			
LNSY20 _ 222_ _	2.2§	3670K			
LNSY20 _ 472_ _	4.7§	3670K			
LNSY20 _ 502_ _	5§	3670K			
LNSY20 _ 682_ _	6.8§	3670K			
LNSY20 _ 103_ _	10§	3670K			
LNSW20 _ 103_ _	10§	3890K			
LNSW20 _ 223_ _	22§	3890K			
LNSW20 _ 443_ _	44§	3890K			-40~85°C
LNSV20 _ 202_ _	2§	4150K			
LNSV20 _ 222_ _	2.2§	4150K			
LNSV20 _ 272_ _	2.7§	4150K			
LNSV20 _ 332_ _	3.3§	4150K			
LNSV20 _ 103_ _	10§	4150K			
LNSV20 _ 333_ _	33§	4150K			-40~125°C
LNSV20 _ 473_ _	47§	4150K			
LNSV20 _ 503_ _	50§	4150K			
LNSV20 _ 583_ _	58§	4150K			
LNSV20 _ 683_ _	68§	4150K			
LNSV20 _ 853_ _	85§	4150K			
LNSV20 _ 104_ _	100§	4150K			
LNSV20 _ 124_ _	120§	4150K			
LNSV20 _ 154_ _	150§	4150K			
LNSV20 _ 334_ _	330§	4150K			
LNSV20 _ 474_ _	470§	4150K			
LNSU20 _ 683_ _	68§	4550K			
LNSU20 _ 104_ _	100§	4550K			
LNSU20 _ 105_ _	1§	4750K			
LNST20 _ 474_ _	470§	4750K			

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