

# LEADLESS INDUCTORS

## NLV SERIES

NLV25 TYPE

NLV32 TYPE

NLCV25 TYPE

NLCV32 TYPE

# TDK CORPORATION



## Features

This product supports for lead-free solder re-flow condition.

Lead-free materials are used to terminal plating

Electrical characteristics and reliability are same as current NL series.

This product use metal terminal, therefore it is high connection reliability.

Thermoplastic resin is used for outer material

## Product name

NLV32T-XXXJ-PF

NLV25T-XXXJ-PF

NLCV32T-XXXJ-PF

NLCV25T-XXXJ-PF

## Application

For universal inductance circuit use

AV components, Car-electronics, IT equipment, Car-electronics, etc.

## Specification

Series lineup

NLV32 TYPE[Normal type] :0.01 to 470uH /E-12 Series

NLV25 TYPE[More Small/Normal type] :0.01 to 100uH /E-12 Series

NLCV32 TYPE[Large Current type] :1 to 330uH /E-6 Series

NLCV25 TYPE[More Small/Large Current type] :1 to 33uH /E-6 Series

\*The details please refer to electrical characteristics page.

Temperature Characteristics

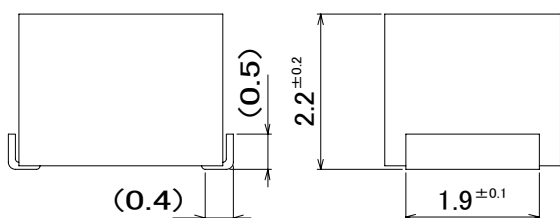
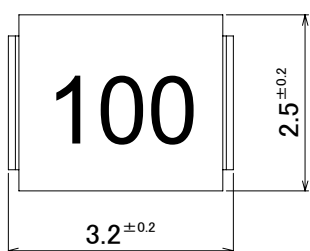
Storage temperature : -40degrees to +85degrees

Operating temperature : -40degrees to +85degrees

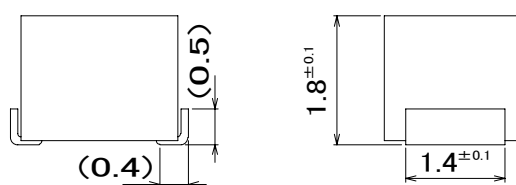
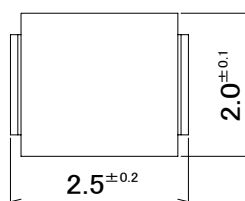
Self temperature rise : 20degrees MAX. (In maximum rating current load)

## Shape and dimensions

NLV32 TYPE  
NLCV32 TYPE

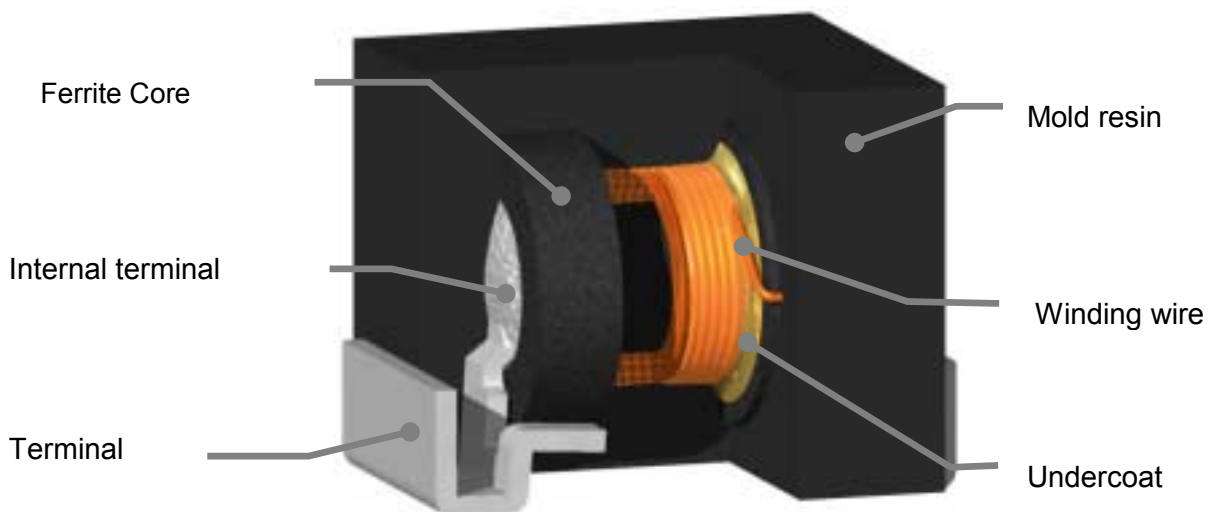


NLV25 TYPE  
NLCV25 TYPE



\*NLV25 type and a NLCV25 type increase with a mark-less design.

## Construction



## Electrical characteristics

## NLV32 TYPE [Normal type]

TDK ITEM NAME	L( $\mu$ H) +5%	Q Min.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) Max.	Idc(mA) Max.
NLV32T-010J-PF	0.010	15	100	2500	0.13	450
NLV32T-012J-PF	0.012	17	100	2300	0.14	450
NLV32T-015J-PF	0.015	19	100	2100	0.16	450
NLV32T-018J-PF	0.018	21	100	1900	0.18	450
NLV32T-022J-PF	0.022	23	100	1700	0.20	450
NLV32T-022J-PF	0.027	23	100	1500	0.22	450
NLV32T-033J-PF	0.033	25	100	1400	0.24	450
NLV32T-039J-PF	0.039	25	100	1300	0.27	450
NLV32T-047J-PF	0.047	26	100	1200	0.30	450
NLV32T-056J-PF	0.056	26	100	1100	0.33	450
NLV32T-068J-PF	0.068	27	100	1000	0.36	450
NLV32T-082J-PF	0.082	27	100	900	0.40	450
NLV32T-R10J-PF	0.10	28	100	700	0.44	450
NLV32T-R12J-PF	0.12	30	25.2	500	0.22	450
NLV32T-R15J-PF	0.15	30	25.2	450	0.25	450
NLV32T-R18J-PF	0.18	30	25.2	400	0.28	450
NLV32T-R22J-PF	0.22	30	25.2	350	0.32	450
NLV32T-R27J-PF	0.27	30	25.2	320	0.36	450
NLV32T-R33J-PF	0.33	30	25.2	300	0.40	450
NLV32T-R39J-PF	0.39	30	25.2	250	0.45	450
NLV32T-R47J-PF	0.47	30	25.2	220	0.50	450
NLV32T-R56J-PF	0.56	30	25.2	180	0.55	450
NLV32T-R68J-PF	0.68	30	25.2	160	0.60	450
NLV32T-R82J-PF	0.82	30	25.2	140	0.65	450

## Test equipment

L,Q : HP4191A RF IMPEDANCE ANALYZER + 16092A + TF-2 (at 100MHz)

HP4194A IMPEDANCE ANALYZER + 16085A + 16093B + TF-1

SRF : HP8753C NETWORK ANAZYZER

Rdc : VP-2941A DIGITAL MILLIOHM METER MATSUSHITA

## Electrical characteristics

## NLV32 TYPE [Normal type]

TDK ITEM NAME	L( $\mu$ H) +5%	Q Min.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) Max.	Idc(mA) Max.
NLV32T-1R0J-PF	1.0	30	7.96	120	0.70	400
NLV32T-1R2J-PF	1.2	30	7.96	100	0.75	390
NLV32T-1R5J-PF	1.5	30	7.96	85	0.85	370
NLV32T-1R8J-PF	1.8	30	7.96	80	0.90	350
NLV32T-2R2J-PF	2.2	30	7.96	75	1.00	320
NLV32T-2R2J-PF	2.7	30	7.96	70	1.10	290
NLV32T-3R3J-PF	3.3	30	7.96	60	1.20	260
NLV32T-3R9J-PF	3.9	30	7.96	55	1.30	250
NLV32T-4R7J-PF	4.7	30	7.96	50	1.50	220
NLV32T-5R6J-PF	5.6	30	7.96	45	1.60	200
NLV32T-6R8J-PF	6.8	30	7.96	40	1.80	180
NLV32T-8R2J-PF	8.2	30	7.96	35	2.00	170
NLV32T-100J-PF	10	30	2.52	30	2.10	150
NLV32T-120J-PF	12	30	2.52	20	2.50	140
NLV32T-150J-PF	15	30	2.52	20	2.80	130
NLV32T-180J-PF	18	30	2.52	20	3.30	120
NLV32T-220J-PF	22	30	2.52	20	3.70	110
NLV32T-270J-PF	27	30	2.52	20	5.00	80
NLV32T-330J-PF	33	30	2.52	17	5.60	70
NLV32T-390J-PF	39	30	2.52	16	6.40	65
NLV32T-470J-PF	47	30	2.52	15	7.00	60
NLV32T-560J-PF	56	30	2.52	13	8.00	55
NLV32T-680J-PF	68	30	2.52	12	9.00	50
NLV32T-820J-PF	82	30	2.52	11	10.00	45
NLV32T-101J-PF	100	20	0.796	10	10.00	40
NLV32T-121J-PF	120	20	0.796	10	11.00	70
NLV32T-151J-PF	150	20	0.796	8	15.00	65
NLV32T-181J-PF	180	20	0.796	7	17.00	60
NLV32T-221J-PF	220	20	0.796	7	21.00	50
NLV32T-271J-PF	270	20	0.796	6	28.00	45
NLV32T-331J-PF	330	20	0.796	5	34.00	40
NLV32T-391J-PF	390	20	0.796	5	36.00	35
NLV32T-471J-PF	470	20	0.796	4	40.00	25

## Test equipment

L,Q : HP4194A IMPEDANCE ANALYZER + 16085A + 16093B + TF-1

SRF : HP8753C NETWORK ANAZYZER

Rdc : VP-2941A DIGITAL MILLIOHM METER MATSUSHITA

## Electrical characteristics

### NLV25 TYPE [More Small / Normal type]

TDK ITEM NAME	L(uH) +5%	Q Min.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) Max.	Idc(mA) Max.
NLV25T-010J-PF	0.010	15	100	2150	0.26	530
NLV25T-012J-PF	0.012	15	100	2050	0.27	500
NLV25T-015J-PF	0.015	15	100	2000	0.29	480
NLV25T-018J-PF	0.018	15	100	1850	0.31	450
NLV25T-022J-PF	0.022	15	100	1650	0.37	420
NLV25T-027J-PF	0.027	15	100	1550	0.40	410
NLV25T-033J-PF	0.033	20	100	1450	0.42	400
NLV25T-039J-PF	0.039	20	100	1350	0.45	380
NLV25T-047J-PF	0.047	20	100	1200	0.50	360
NLV25T-056J-PF	0.056	20	100	1100	0.60	340
NLV25T-068J-PF	0.068	20	100	1050	0.65	320
NLV25T-082J-PF	0.082	20	100	900	0.75	300
NLV25T-R10J-PF	0.10	20	100	800	0.80	280
NLV25T-R12J-PF	0.12	30	25.2	700	0.30	550
NLV25T-R15J-PF	0.15	30	25.2	550	0.35	500
NLV25T-R18J-PF	0.18	30	25.2	500	0.40	460
NLV25T-R22J-PF	0.22	30	25.2	450	0.50	430
NLV25T-R27J-PF	0.27	30	25.2	425	0.55	420
NLV25T-R33J-PF	0.33	30	25.2	400	0.60	400
NLV25T-R39J-PF	0.39	30	25.2	375	0.65	375
NLV25T-R47J-PF	0.47	30	25.2	350	0.68	350
NLV25T-R56J-PF	0.56	30	25.2	325	0.75	325
NLV25T-R68J-PF	0.68	30	25.2	300	0.85	300
NLV25T-R82J-PF	0.82	30	25.2	260	1.00	260

#### Test equipment

L,Q : HP4191A RF IMPEDANCE ANALYZER + 16092A + TF-2 (at 100MHz)  
           HP4194A IMPEDANCE ANALYZER + 16085A + 16093B + TF-1  
 SRF : HP8753C NETWORK ANAZYZER  
 Rdc : VP-2941A DIGITAL MILLIOHM METER MATSUSHITA

## Electrical characteristics

## NLV25 TYPE [More Small / Normal type]

TDK ITEM NAME	L( $\mu$ H) +/-5%	Q Min.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) Max.	Idc(mA) Max.
NLV25T-1R0J-PF	1.0	30	7.96	245	1.10	245
NLV25T-1R2J-PF	1.2	30	7.96	230	1.20	230
NLV25T-1R5J-PF	1.5	30	7.96	182	1.30	220
NLV25T-1R8J-PF	1.8	30	7.96	135	1.45	210
NLV25T-2R2J-PF	2.2	30	7.96	105	1.55	200
NLV25T-2R2J-PF	2.7	30	7.96	70	1.70	195
NLV25T-3R3J-PF	3.3	30	7.96	55	1.90	185
NLV25T-3R9J-PF	3.9	30	7.96	48	2.10	180
NLV25T-4R7J-PF	4.7	30	7.96	43	2.30	175
NLV25T-5R6J-PF	5.6	25	7.96	42	2.50	170
NLV25T-6R8J-PF	6.8	25	7.96	39	2.70	165
NLV25T-8R2J-PF	8.2	25	7.96	36	3.05	160
NLV25T-100J-PF	10	25	2.52	33	3.50	155
NLV25T-120J-PF	12	25	2.52	30	3.80	150
NLV25T-150J-PF	15	25	2.52	26	4.40	140
NLV25T-180J-PF	18	25	2.52	24	4.80	130
NLV25T-220J-PF	22	25	2.52	22	5.50	125
NLV25T-270J-PF	27	25	2.52	21	6.30	115
NLV25T-330J-PF	33	25	2.52	20	7.10	110
NLV25T-390J-PF	39	20	2.52	18	9.50	90
NLV25T-470J-PF	47	20	2.52	17	11.1	80
NLV25T-560J-PF	56	20	2.52	16	12.1	75
NLV25T-680J-PF	68	20	2.52	15	16.6	70
NLV25T-820J-PF	82	20	2.52	13	19.0	66
NLV25T-101J-PF	100	15	0.796	12	21.0	60

## Test equipment

L,Q : HP4194A IMPEDANCE ANALYZER + 16085A + 16093B + TF-1

SRF : HP8753C NETWORK ANAZYZER

Rdc : VP-2941A DIGITAL MILLIOHM METER MATSUSHITA

## Electrical characteristics

### NLCV32 TYPE [Large Current Type]

TDK ITEM NAME	L(uH)	Q Ref.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) ± 30%	Idc(mA) Max.
NLCV32T-1R0M-PF	1.0 ± 20%	10	7.96	100	0.08	850
NLCV32T-1R5M-PF	1.5 ± 20%	10	7.96	80	0.11	700
NLCV32T-2R2M-PF	2.2 ± 20%	10	7.96	68	0.13	600
NLCV32T-3R3M-PF	3.3 ± 20%	10	7.96	54	0.16	500
NLCV32T-4R7M-PF	4.7 ± 20%	15	7.96	46	0.20	430
NLCV32T-6R8M-PF	6.8 ± 20%	15	7.96	38	0.27	360
NLCV32T-100K-PF	10 ± 10%	15	2.52	30	0.36	300
NLCV32T-150K-PF	15 ± 10%	15	2.52	26	0.56	250
NLCV32T-220K-PF	22 ± 10%	15	2.52	21	0.77	210
NLCV32T-330K-PF	33 ± 10%	15	2.52	17	1.10	170
NLCV32T-470K-PF	47 ± 10%	15	2.52	14	1.64	150
NLCV32T-680K-PF	68 ± 10%	15	2.52	12	2.80	120
NLCV32T-101K-PF	100 ± 10%	15	0.796	10	3.70	100
NLCV32T-151K-PF	150 ± 10%	20	0.796	8	6.10	85
NLCV32T-221K-PF	220 ± 10%	20	0.796	7	8.40	70
NLCV32T-331K-PF	330 ± 10%	20	0.796	6	12.3	60

### NLCV25 TYPE [More Small / Large Current Type]

TDK ITEM NAME	L(uH)	Q Ref.	TestFreq (MHz)	SRF(MHz) Min.	Rdc(ohm) ± 30%	Idc(mA) Max.
NLCV25T-1R0M-PF	1.0 ± 20%	20	7.96	200	0.34	475
NLCV25T-1R5M-PF	1.5 ± 20%	20	7.96	165	0.42	435
NLCV25T-2R2M-PF	2.2 ± 20%	20	7.96	95	0.50	390
NLCV25T-3R3M-PF	3.3 ± 20%	20	7.96	55	0.65	340
NLCV25T-4R7M-PF	4.7 ± 20%	20	7.96	43	0.80	285
NLCV25T-6R8M-PF	6.8 ± 20%	20	7.96	39	1.00	275
NLCV25T-100K-PF	10 ± 10%	30	2.52	32	1.69	210
NLCV25T-150K-PF	15 ± 10%	30	2.52	21	2.20	175
NLCV25T-220K-PF	22 ± 10%	30	2.52	18	2.80	160
NLCV25T-330K-PF	33 ± 10%	30	2.52	16	4.20	120

#### Test equipment

L,Q : HP4194A IMPEDANCE ANALYZER + 16085A + 16093B + TF-1

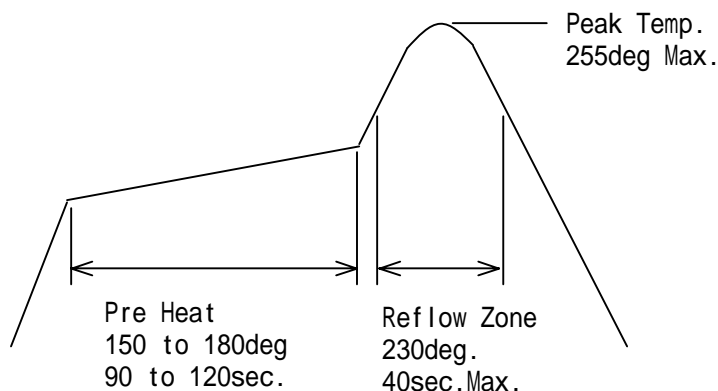
SRF : HP8753C NETWORK ANAZYZER

Rdc : VP-2941A DIGITAL MILLIOHM METER MATSUSHITA

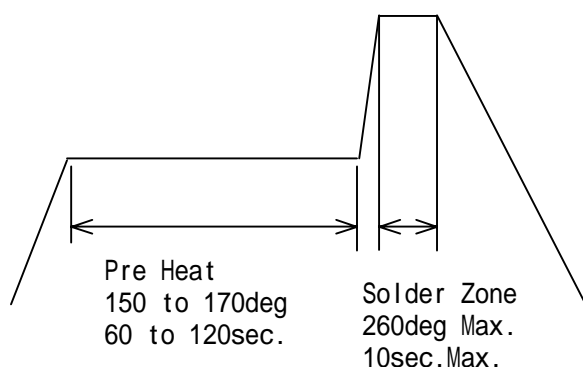


## Recommended soldering condition (for Pb free)

### \*Reflow Soldering



### \*Flow Soldering



### \*Iron Soldering

Heater temp. :300 deg. to 350 deg.

Heat time :3 sec./time

Iron design :about 30W /Diameter 0.1 mm

Component temperature is equal to or less than 260 degrees, and Heating time is equal to or less than total 10 seconds.