

Surface Mount Common Mode Choke

NCCD Series

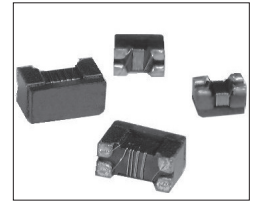
FEATURES

- HIGH COMMON MODE IMPEDANCE AT HIGH FREQUENCY
- LOW PROFILE SURFACE MOUNT PACKAGE
- AUTOMOTIVE COMMON MODE CHOKE FOR CAN-FD
- AEC-Q200 COMPLIANT GRADE 1 (-40°C ~ +125°C)
- Pb-FREE CONSTRUCTION
- BOTH FLOW AND REFLOW SOLDERING APPLICABLE

**RoHS
Compliant**

includes all homogeneous materials

*See Part Number System for Details

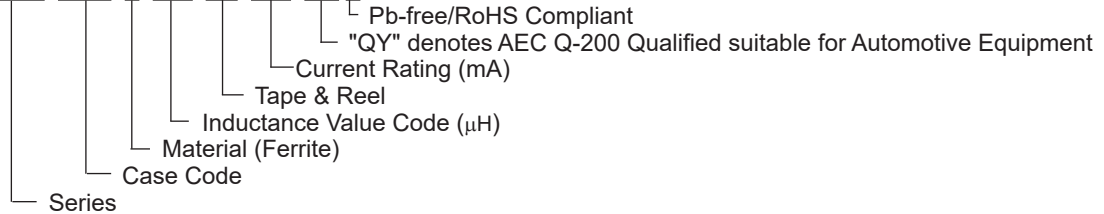


CHARACTERISTICS

Case Size	1210	1812
Inductance Values	51 μ H ~ 200 μ H	200 μ H
Temperature Range	-40°C ~ +125°C (including self-heating)	

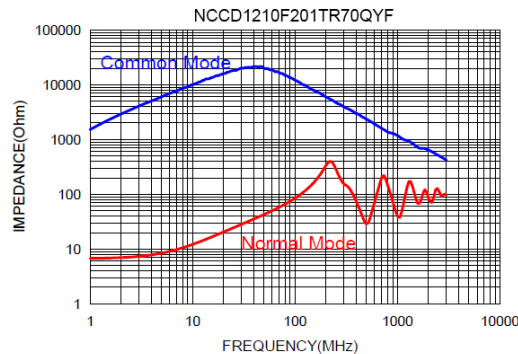
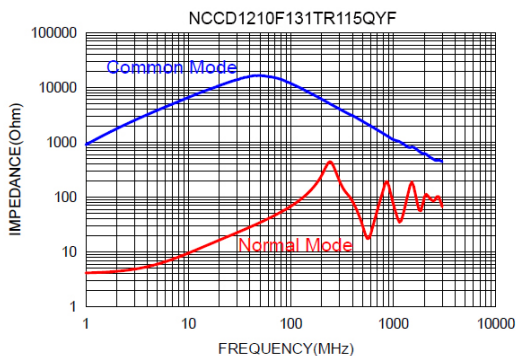
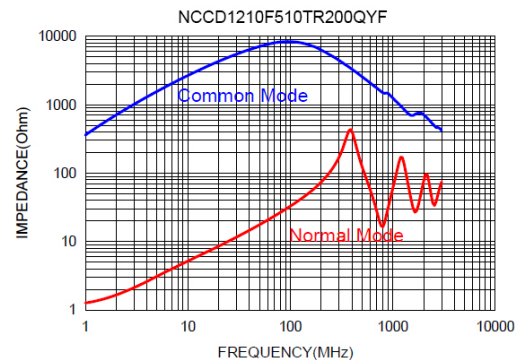
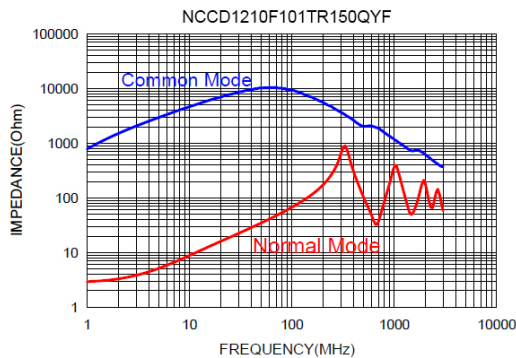
PART NUMBER SYSTEM

NCCD 1210 F 101 TR 150 QY F



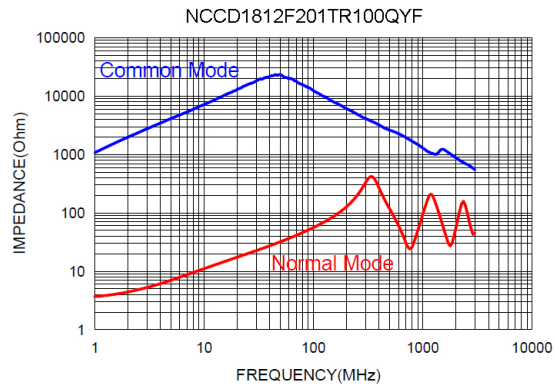
NCCD1210 SPECIFICATIONS

NIC Part Number	Inductance (μ H)	Test Frequency (MHz)	DC Resistance (Ω max.)	DC Current (mA max.) Δ max. +40°C	Voltage Rating (Vdc)	Withstanding Voltage (Vdc)	Insulation Resistance (Ω)
NCCD1210F510TR200QYF	51 +50/-30%	100	0.7	200	80	200	10Meg
NCCD1210F101TR150QYF	100 +50/-30%		1.5	150			
NCCD1210F131TR115QYF	130 +30/-10%		3.5	115			
NCCD1210F201TR70QYF	200 +30/-10%		5.5	70			

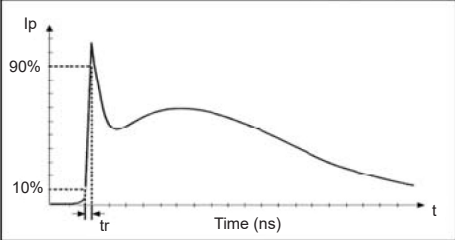


NCCD1812 SPECIFICATIONS

NIC Part Number	Inductance (μH)	Test Frequency (MHz)	DC Resistance (Ω max.)	DC Current (mA max.) Δ max. +40°C	Voltage Rating (Vdc)	Withstanding Voltage (Vdc)	Insulation Resistance (Ω)
NCCD1812F201TR100QYF	200 +60/-20%	100	4.5	100	50	125	10Meg



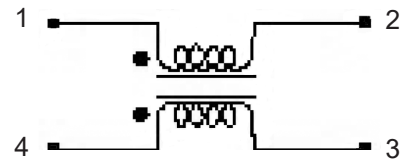
RELIABILITY TEST

Item	Performance	Test Condition								
High Temperature Exposure (No Load)		Preconditioning: Run through IR reflow 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles). Measure at room temperature after placing for 24±2 hrs								
Temperature Cycling (AEC-Q200)	Appearance: No damage. Inductance: Within±10% of initial value RDC: Within ±15% of initial value and shall not exceed the specification	Temperature: 125±2°C Duration: 1000 hours min.								
Biased Humidity (AEC-Q200)		Condition for 1 cycle: Step1: -40°C±2°C 30 minutes min. Step2: 125°C±2°C transition time 1 minutes max.. Step3: 125°C±2°C 30 minutes min. Step4: Low temp. transition time 1 minutes. max. Number of cycles: 1000								
High Temperature Operational Life (AEC-Q200)		Humidity: 85±3%R.H, Temperature: 85°C±2°C Duration : 1000hrs min.								
Resistance to Solvents	Appearance: No damage.	Temperature: 125°C±2°C Duration: 1000 hours min. with 100% rated current.								
Mechanical Shock	Appearance: No damage. Inductance: Within±10% of initial value RDC: Within ±15% of initial value and shall not exceed the specification value	Add aqueous wash chemical - OKEM clean or equivalent.								
Flammability	Electrical Test Not Required	Peak value: 100 grams Duration: 6mS Waveform: Half-wave Velocity: 12.3 ft/sec Direction: Shocks in 3 perpendicular axes								
ESD	Appearance: No damage	UL94V-0 and 1 acceptable								
		Direct Contact and Air Discharge PASSIVE COMPONENT HBM ESD Discharge Waveform to a Coaxial Target Test method: AEC-Q200-002 Test mode: Contact Discharge Discharge level: 4 KV (Level: 2)								
										
Vibration		IPC/JEDEC J-STD-020D Classification Reflow Profiles Oscillation Frequency: 10Hz~2KHz~10Hz for 20 minutes Equipment: Vibration checker Total Amplitude: 5g Testing Time: 12 hours(20 minutes, 12 cycles each of 3 orientations)								
Resistance to Soldering Heat	Appearance: No damage. Inductance: Within±10% of initial value. RDC: Within ±15% of initial value and shall not exceed the specification value	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>Time (sec.)</th> <th>Temperature ramp/immersion and immersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>250+/-5°C (solder temp)</td> <td>30+/-5°C</td> <td>1°C/s~4°C/s time above 183°C 90s ~ 120s</td> <td>3</td> </tr> </tbody> </table>	Temperature (°C)	Time (sec.)	Temperature ramp/immersion and immersion rate	Number of heat cycles	250+/-5°C (solder temp)	30+/-5°C	1°C/s~4°C/s time above 183°C 90s ~ 120s	3
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Thermal Shock (AEC-Q200)		Step1: -40°C±2°C 15±1min Step2: +125°C±2°C within 20 Sec. Step3: +125°C±2°C 15±1min Number of cycles: 300 Measured at room temperature after for 24±2hrs								

COMPONENT DIMENSIONS (mm)

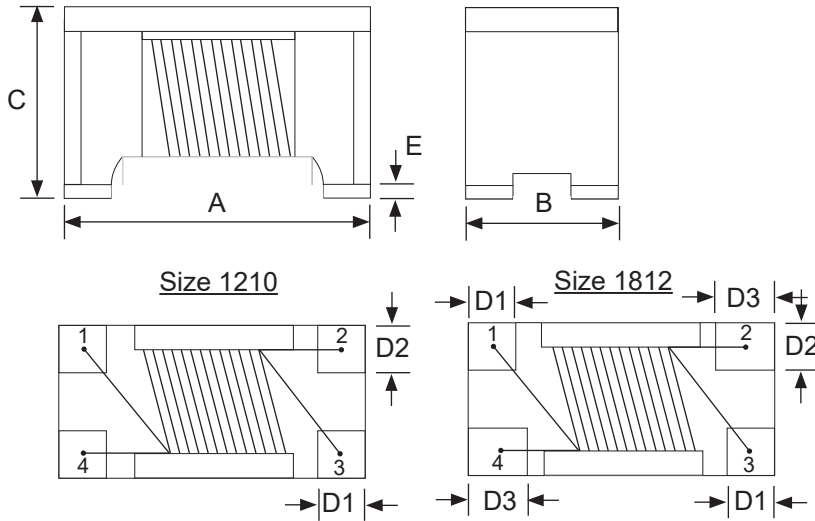
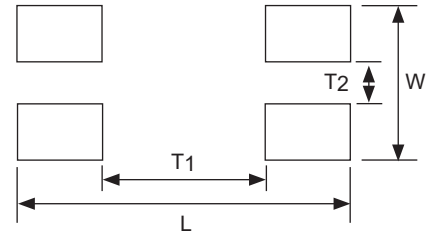
Type	A ±0.2	B ±0.2	C max.	D1	D2	D3 ±0.2	E ±0.1
NCCD1210	3.3	2.5	2.5	0.55±0.15	1.05±0.20	N/A	0.15
NCCD1812	4.5	3.2	3.0	0.90±0.15	1.05±0.15	0.60	0.15

CIRCUIT SCHEMATIC

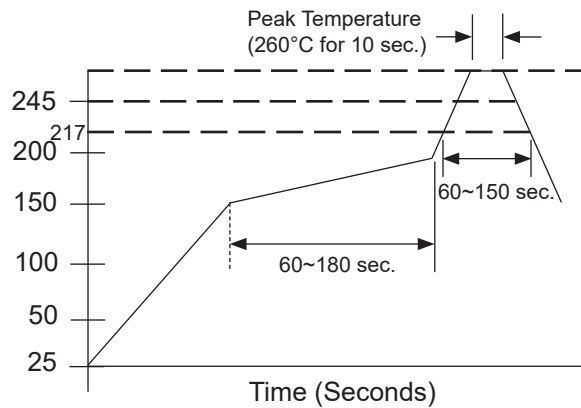


LAND PATTERN DIMENSIONS (mm)

Case Size	L	W	T1	T2
1210	3.70	2.80	2.40	0.60
1812	5.00	3.60	3.00	1.20



RECOMMENDED REFLOW SOLDERING PROFILE



TAPING DIMENSIONS (mm) AND REEL QUANTITY

Series	A ±0.1	B ±0.1	E ±0.1	F ±0.05	P ₀ ±0.1	P ₁ ±0.1	Dφ ±0.1	W ±0.1	t ₁ ±0.05	t ₂ ±0.1	Reel Quantity
NCCD1210	2.88	3.7	1.75	3.5	4.0	4.0	1.5	8.0	0.26	2.5	2,000
NCCD1812	3.6	4.9		5.5	8.0	8.0		12.0		3.0	500

