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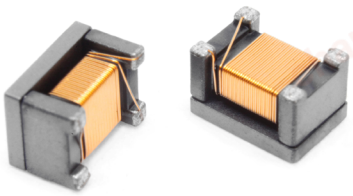
Automotive Chip Choke
EMI Suppression for CAN-Bus Networks
2-Line Common Mode Chokes

Pulse
a YAGEO company

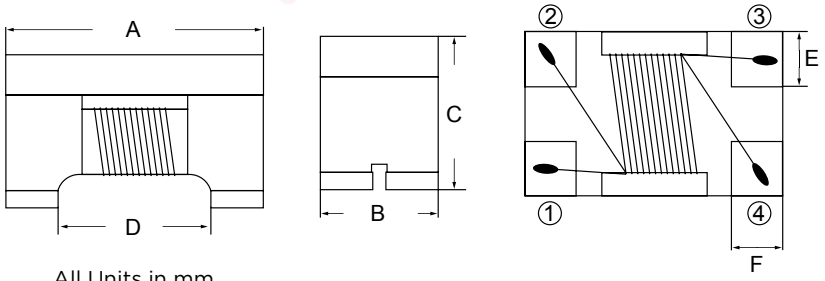


- *Meets AEC-Q200 Requirements*
- *Suppression of common mode noise without attenuating the signal*
- *Magnetically shielded versions for lower Rdc and higher current*
- *Supports CAN-Bus, A2B and other IVN high speed differential signal lines (LVDS)*

Electrical Specifications @ 25°C

Part Number	Common Mode Impedance (10MHZ) Min	Common Mode Impedance (10MHZ) Typ	Inductance (uH)	Standard Tolerance	RDC (Ω Max)	IDC (A MAX)	Isolation Resistance (MΩ) Min	Rated Voltage (V) Max
PE-1812ACCXXXSTS	Operating Temperature Range -40°C to +125°C							
PE-1812ACC110STS	300	600	11	+50/-30%	0.5	0.36	10	50
PE-1812ACC220STS	600	1200	22	+50/-30%	0.6	0.31	10	50
PE-1812ACC510STS	1500	3500	51	+50/-30%	1	0.23	10	50
PE-1812ACC101STS	3000	7500	100	+50/-30%	2	0.2	10	50

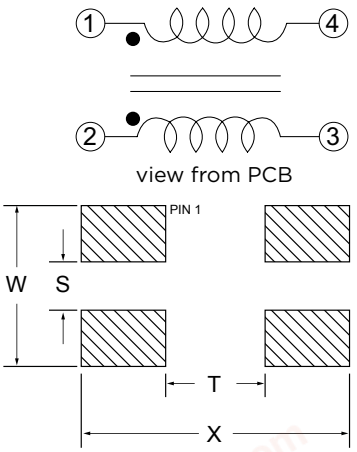
Mechanical



All Units in mm

Bifilar winding
(representation only)

Schematic



Component Dimensions (mm)							SOLDER PAD (mm)			
Series	A	B	C	D	E	F	X	T	W	S
1812 ACC	4.5 +/-0.20	3.2 +/-0.20	3.0 MAX	3.1+/-0.20	0.65+/-0.15	0.70+/-0.15	5.90	3.20	3.40	1.60

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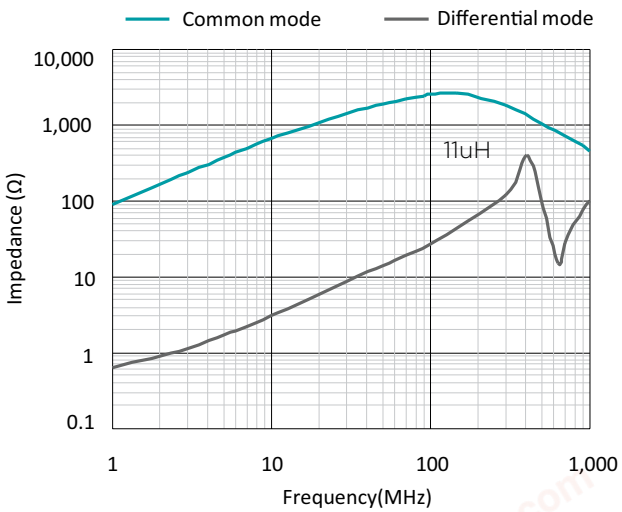
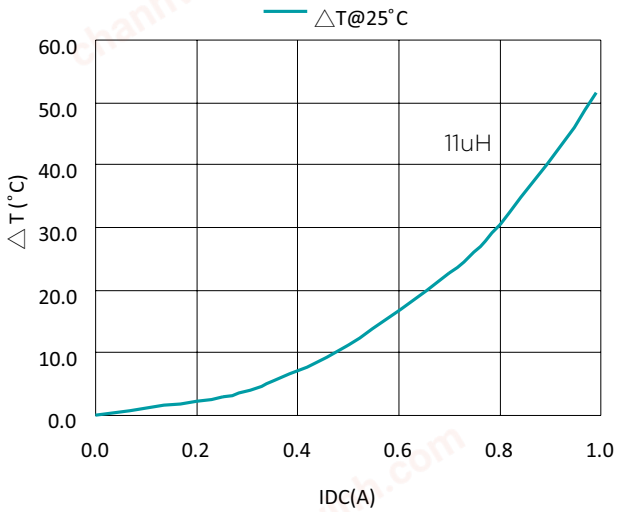
PE-1812ACC110STS

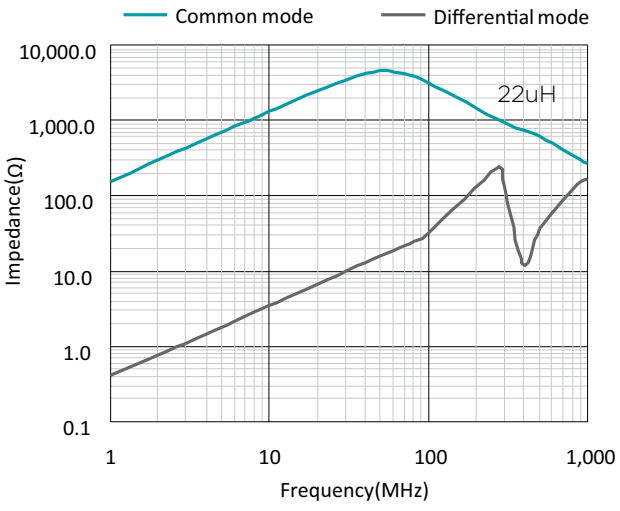
Impedance vs Frequency

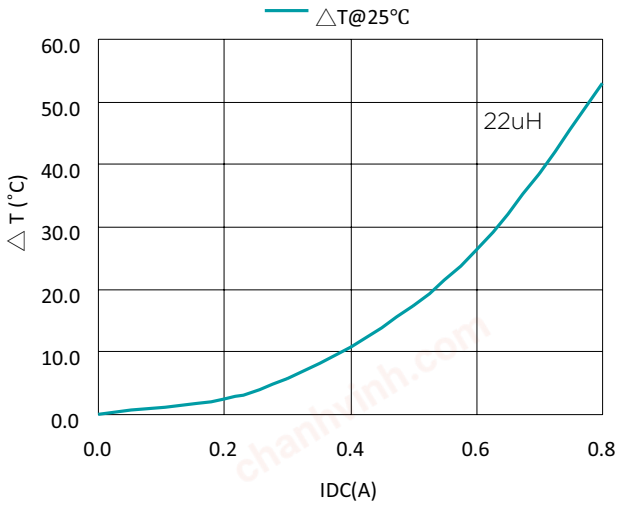


Temp vs DC Current



PE-1812ACC220STS





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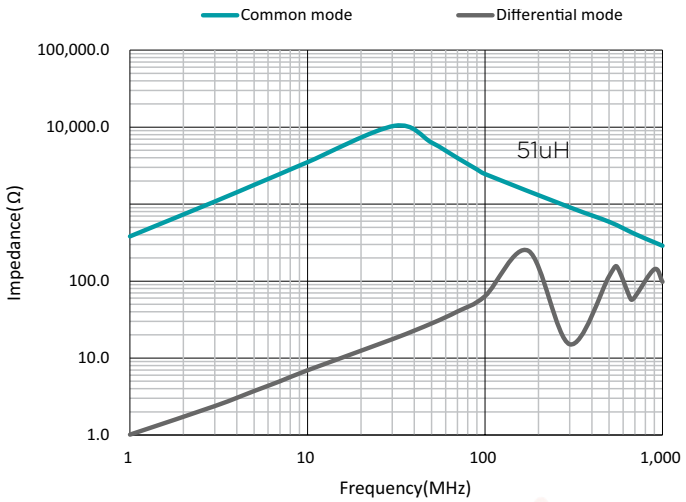
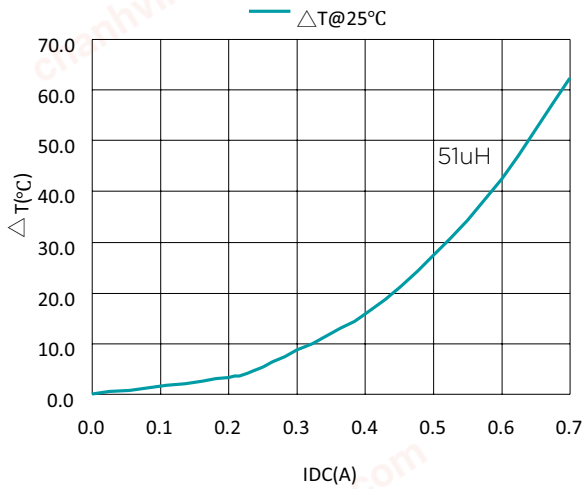
PE-1812ACC510STS

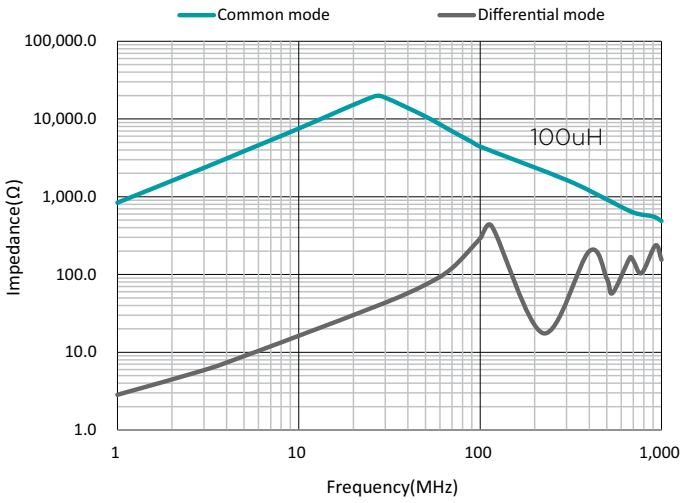
Impedance vs Frequency

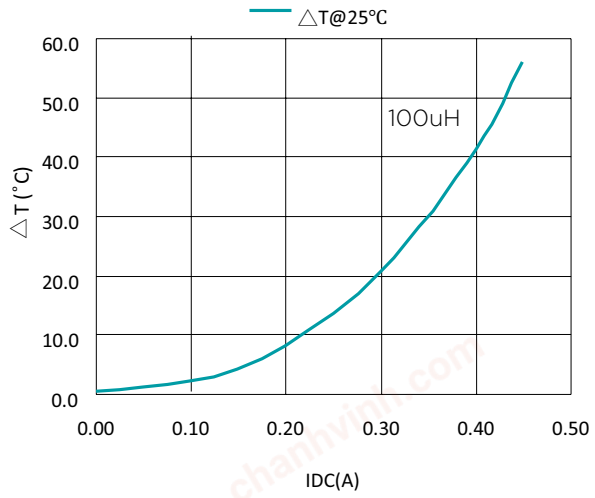


Temp vs DC Current



PE-1812ACC101STS





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Reliability Test

Item	Reference documents	Test Condition	Test Specification
1. High Temperature Exposure	MIL-STD-202 Method 108	1. Temperature: 125˚C 2. Time: 1000 hours	1. No mechanical and electrical damage 2. Inductance shall be within specification
2. Temperature Cycling	JESD22 Method JA-104	1. Temperature: -40˚C~125˚C 2. Number of cycles: 1000 cycle 3.Dwell time: 30 minutes	1. No mechanical and electrical damage 2. Inductance shall be within specification
3. Biased Humidity Test	MIL-STD-202 Method 103	1. Temperature: 85±5˚C 2. Time: 1000 hours 3. Humidity: 85±5% RH	1. No mechanical and electrical damage 2. Inductance shall be within specification
4. Operational Life	MIL-PRF-27	1. Temperature: 125˚C 2. Time: 1000 hours 3. Apply DC current reference	1. No mechanical and electrical damage 2. Inductance shall be within specification
5. External Visual	MIL-STD-883 Method 2009	Inspect product construction, marking and workmanship	Per product specification standard
6. Physical Dimensions	JESD22 Method JB-100	Verify physical dimensions to the applicable product detail specification	Per product specification standard
7. Vibration Test	MIL-STD-202 Method 204	1. Frequency and Amplified: 10-2000-10 Hz, 1.5mm 2. Direction: X, Y, Z 3. Test duration: 2 hours for each direction, 6 hours in total	1. No mechanical and electrical damage 2. Inductance shall be within specification
8. Resistance to Soldering Heat Test	MIL-STD-202 Method 210	1. Temperature: 250±5˚C 2. Time: (temp.≥217˚C) 60-160 seconds 3. IR reflow times: 3 times	1. No mechanical and electrical damage 2. Inductance shall be within specification
9. Solderability Test	J-STD-002	1. Bakeing in pre-testing: 150±5˚C / 16Hours±30min. 2. Peak temperature: 245˚C 3. Time: (temp.≥217˚C) 60-160 seconds 4. IR reflow times: 1 time	The terminal shall be at least 95% covered with fresh solder.
10. Electrical Characterization	User Spec.	1. Operating temperature: -40˚C~125˚C 2. Room Temperature: 25˚C	1. No mechanical and electrical damage 2. Inductance shall be within specification
11. Mechanical Shock	MIL-STD-202 Method 213	Figure 1 of Method 213. Condition C	1. No mechanical and electrical damage 2. Inductance shall be within specification
12. Board Flex Test	AEC-Q200-005	60 Seconds minimum holding time	After test, inductors shall be no mechanical damage.
13. Terminal Strength Test	AEC-Q200-006	1. Apply push force to samples mounted on PCB. 2. Force of 1.8 kg for 60±1 seconds.	After test, inductors shall be no mechanical damage.

Notes:

1. Inductance is measure, where applicable, with both primary windings connected in series (2 to 5, with 3 and 4 shorted).
2. Leakage inductance is measured with both primary windings connected in series (where applicable) with all other windings shorted.

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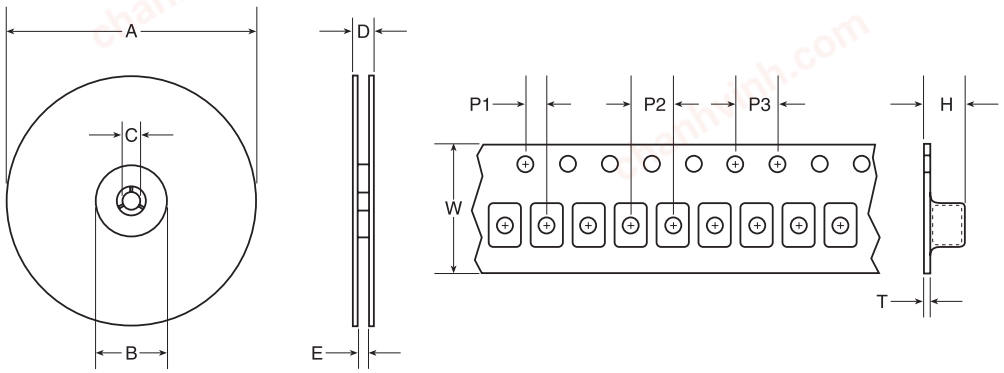
Tape and Reel Specifications



		Reel Dimensions (mm)					Tape Dimensions (mm)					
Series	Parts per Reel	A	B	C	D	E	W	P1	P2	P3	H	T
1812 ACC	500	178	60	13	17	14	12	2	8	4	4	0.35

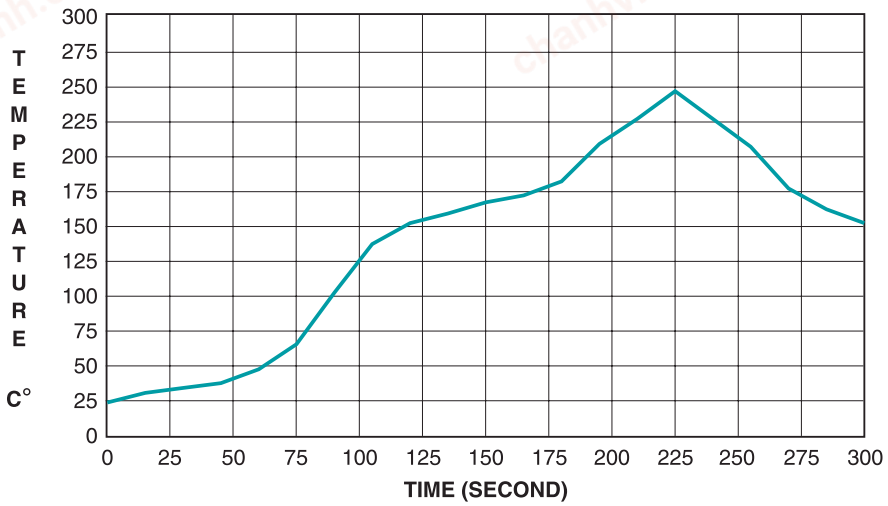
I. Description:

a. Ferrite drum core construction
b. Magnetically shielded
c. Enameled copper wire: H class
d. Product weight: 0.15g (ref.)
e. Moisture sensitivity Level 1
f. Products comply with RoHS' requirements
g. Halogen Free available

II. General specification:

a. Storage temp: -40˚C to +125˚C
b. Operating temp: -40˚C to +125˚C
(Temp. rise included)
c. Resistance to solder heat: 250˚C 10 secs.

Recommended Solder Heat Resistance Profile



For More Information:
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