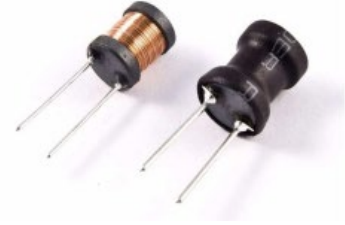




●FEATURE

1. Drum Choke with low cost and high reliability.
2. Fit for power line & signal line circuit
3. Go pass the CE/FCC standard.
4. Operating Temperature -40 ~ +125°C
5. Compliant with AEC-Q200



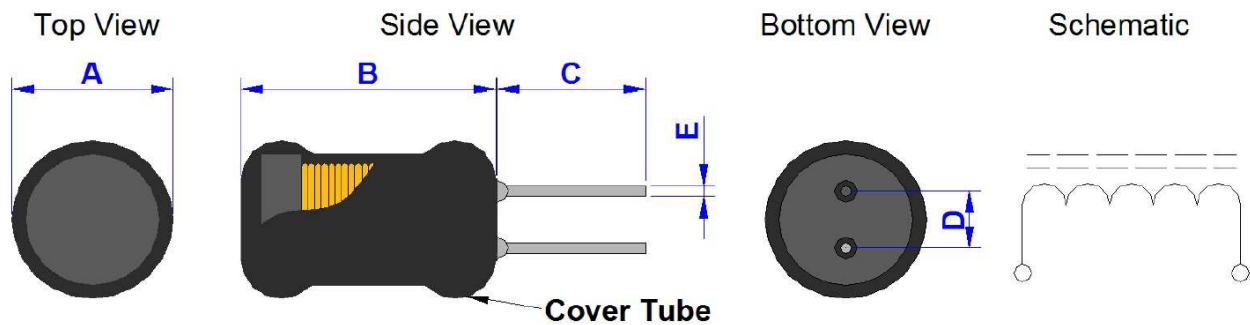
●APPLICATION

Mobile Device, Handheld Device, Low Profile Device, Panel.

●ORDERING INFORMATION

<u>DPR</u>	<u>0608</u>	<u>U</u>	<u>-1R0</u>	<u>T</u>	<u>Q</u>
Series	Dimension (L*W)	UL Tube	Inductance(L) (uH) @ 1KHz/0.25V	Tolerance(T) J=±5%, K=±10% L=±15%, M=±20% Y=±30%	AEC-Q

●SHAPE AND DIMENSION



●SPECIFICATION

Unit: mm

TYPE	ØA	B	C	D	ØE
0406	6.00 Max.	7.50 Max.	15.00±1.50	2.00±0.50	0.50±0.05
0608	8.00 Max.	10.00 Max.	15.00±1.50	3.00±0.50	0.65±0.05
0810	10.00 Max.	11.50 Max.	15.00±1.50	5.00±0.50	0.65±0.05
0912	11.00 Max.	13.50 Max.	15.00±1.50	5.00±0.50	0.80±0.05
1012	12.00 Max.	13.50 Max.	15.00±1.50	6.00±0.50	0.80±0.05
1016	12.50 Max.	18.00 Max.	15.00±1.50	6.00±0.50	0.80±0.05

**•ELECTRICAL CHARACTERISTICS**

Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR0406U-1R0T	1.0	0.030	3.00
DPR0406U-1R5T	1.5	0.035	2.80
DPR0406U-1R8T	1.8	0.040	2.70
DPR0406U-2R2T	2.2	0.045	2.50
DPR0406U-2R7T	2.7	0.050	2.50
DPR0406U-3R3T	3.3	0.055	2.20
DPR0406U-3R9T	3.9	0.055	2.20
DPR0406U-4R7T	4.7	0.065	2.00
DPR0406U-5R6T	5.6	0.070	1.80
DPR0406U-6R8T	6.8	0.080	1.70
DPR0406U-8R2T	8.2	0.090	1.50
DPR0406U-100T	10.0	0.110	1.40
DPR0406U-120T	12.0	0.140	1.20
DPR0406U-150T	15.0	0.160	1.00
DPR0406U-180T	18.0	0.180	1.00
DPR0406U-220T	22.0	0.250	0.90
DPR0406U-270T	27.0	0.370	0.80
DPR0406U-330T	33.0	0.420	0.70
DPR0406U-390T	39.0	0.450	0.70
DPR0406U-470T	47.0	0.500	0.60
DPR0406U-560T	56.0	0.560	0.60
DPR0406U-680T	68.0	0.630	0.55
DPR0406U-820T	82.0	0.770	0.50
DPR0406U-101T	100	0.850	0.40
DPR0406U-121T	120	1.300	0.40
DPR0406U-151T	150	1.400	0.30
DPR0406U-181T	180	2.200	0.30
DPR0406U-221T	220	2.500	0.28
DPR0406U-271T	270	2.700	0.25
DPR0406U-331T	330	3.000	0.22
DPR0406U-391T	390	3.400	0.21
DPR0406U-471T	470	3.900	0.20
DPR0406U-561T	560	5.000	0.16
DPR0406U-681T	680	7.000	0.15
DPR0406U-821T	820	7.700	0.14
DPR0406U-102T	1000	8.700	0.12

* Inductance drop: 10% typ. at IDC.

* U = UL Tube

* T = Tolerance: J = 5%, K = 10%, L = 15%, M = 20%, Y = 30%



Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR0608-1R0T	1.0	0.015	3.00
DPR0608-1R2T	1.2	0.015	2.80
DPR0608-1R5T	1.5	0.015	2.70
DPR0608-2R2T	2.2	0.015	2.60
DPR0608-2R7T	2.7	0.020	2.50
DPR0608-3R3T	3.3	0.020	2.50
DPR0608-3R9T	3.9	0.025	2.50
DPR0608-4R7T	4.7	0.025	2.30
DPR0608-5R6T	5.6	0.030	2.10
DPR0608-6R8T	6.8	0.030	1.80
DPR0608-8R2T	8.2	0.035	1.20
DPR0608-100T	10.0	0.045	1.00
DPR0608-120T	12.0	0.050	1.00
DPR0608-150T	15.0	0.055	0.90
DPR0608-180T	18.0	0.090	0.90
DPR0608-220T	22.0	0.095	0.80
DPR0608-270T	27.0	0.110	0.75
DPR0608-330T	33.0	0.125	0.70
DPR0608-390T	39.0	0.140	0.65
DPR0608-470T	47.0	0.160	0.60
DPR0608-560T	56.0	0.180	0.60
DPR0608-680T	68.0	0.200	0.56
DPR0608-820T	82.0	0.270	0.48
DPR0608-101T	100	0.310	0.45
DPR0608-121T	120	0.370	0.43
DPR0608-151T	150	0.470	0.40
DPR0608-181T	180	0.540	0.40
DPR0608-221T	220	0.730	0.38
DPR0608-271T	270	0.830	0.32
DPR0608-331T	330	0.950	0.30
DPR0608-391T	390	1.220	0.25
DPR0608-471T	470	1.630	0.22
DPR0608-561T	560	1.800	0.20
DPR0608-681T	680	2.100	0.18
DPR0608-821T	820	2.900	0.17
DPR0608-102T	1000	3.200	0.15
DPR0608-222T	2200	11.200	0.20
DPR0608-472T	4700	15.000	0.05

* Inductance drop: 10% typ. at IDC.

* U = UL Tube

* T = Tolerance: J = 5%, K= 10%, L= 15%, M= 20%, Y= 30%



Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR0810-1R0T	1.0	0.015	4.50
DPR0810-1R5T	1.5	0.020	4.50
DPR0810-2R2T	2.2	0.020	4.20
DPR0810-2R7T	2.7	0.020	4.20
DPR0810-3R3T	3.3	0.020	4.00
DPR0810-3R9T	3.9	0.020	4.00
DPR0810-4R7T	4.7	0.025	4.00
DPR0810-5R6T	5.6	0.025	4.00
DPR0810-6R8T	6.8	0.025	4.00
DPR0810-8R2T	8.2	0.035	3.80
DPR0810-100T	10.0	0.040	3.80
DPR0810-120T	12.0	0.040	3.20
DPR0810-150T	15.0	0.045	2.80
DPR0810-180T	18.0	0.060	2.50
DPR0810-220T	22.0	0.070	2.10
DPR0810-270T	27.0	0.085	2.00
DPR0810-330T	33.0	0.090	1.80
DPR0810-390T	39.0	0.100	1.60
DPR0810-470T	47.0	0.110	1.50
DPR0810-560T	56.0	0.150	1.30
DPR0810-680T	68.0	0.190	1.00
DPR0810-820T	82.0	0.210	0.90
DPR0810-101T	100	0.240	0.80
DPR0810-121T	120	0.260	0.80
DPR0810-151T	150	0.310	0.75
DPR0810-181T	180	0.380	0.70
DPR0810-201T	200	0.460	0.65
DPR0810-221T	220	0.430	0.65
DPR0810-271T	270	0.490	0.63
DPR0810-331T	330	0.660	0.60
DPR0810-391T	390	0.790	0.58
DPR0810-471T	470	0.910	0.52
DPR0810-561T	560	1.130	0.50
DPR0810-681T	680	1.300	0.40
DPR0810-821T	820	1.530	0.30
DPR0810-102T	1000	1.800	0.27
DPR0810-202T	2000	4.300	0.20
DPR0810-302T	3000	7.000	0.20
DPR0810-402T	4000	8.210	0.20
DPR0810-502T	5000	9.880	0.15
DPR0810-602T	6000	10.90	0.10

* Inductance drop: 10% typ. at IDC.

* T = Tolerance: J = 5%, K= 10%, L= 15%, M= 20%, Y= 30%



Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR0912-1R0T	1.0	0.015	5.00
DPR0912-1R5T	1.5	0.015	5.00
DPR0912-1R8T	1.8	0.015	5.00
DPR0912-2R2T	2.2	0.015	5.00
DPR0912-3R3T	3.3	0.020	4.80
DPR0912-3R9T	3.9	0.020	4.80
DPR0912-4R7T	4.7	0.020	4.50
DPR0912-5R6T	5.6	0.025	4.00
DPR0912-6R8T	6.8	0.025	3.90
DPR0912-8R2T	8.2	0.025	3.50
DPR0912-100T	10.0	0.030	3.40
DPR0912-120T	12.0	0.030	3.20
DPR0912-150T	15.0	0.040	3.00
DPR0912-180T	18.0	0.045	2.80
DPR0912-220T	22.0	0.050	2.70
DPR0912-270T	27.0	0.055	2.50
DPR0912-330T	33.0	0.055	2.50
DPR0912-390T	39.0	0.060	2.00
DPR0912-470T	47.0	0.070	1.80
DPR0912-560T	56.0	0.080	1.70
DPR0912-680T	68.0	0.090	1.50
DPR0912-820T	82.0	0.110	1.40
DPR0912-101T	100	0.160	1.20
DPR0912-121T	120	0.170	1.10
DPR0912-151T	150	0.200	1.00
DPR0912-181T	180	0.220	0.90
DPR0912-221T	220	0.260	0.80
DPR0912-271T	270	0.390	0.70
DPR0912-331T	330	0.450	0.50
DPR0912-391T	390	0.490	0.45
DPR0912-471T	470	0.620	0.43
DPR0912-561T	560	0.640	0.40
DPR0912-681T	680	0.790	0.38
DPR0912-821T	820	1.340	0.35
DPR0912-102T	1000	1.820	0.30
DPR0912-202T	2000	3.530	0.30
DPR0912-302T	3000	6.110	0.23
DPR0912-402T	4000	8.190	0.20
DPR0912-502T	5000	10.400	0.15
DPR0912-602T	6000	12.610	0.10

* Inductance drop: 10% typ. at IDC.

* T = Tolerance: J = 5%, K = 10%, L = 15%, M = 20%, Y = 30%



Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR1012-1R0T	1.0	0.010	6.00
DPR1012-1R5T	1.5	0.010	6.00
DPR1012-1R8T	1.8	0.015	6.00
DPR1012-2R7T	2.7	0.015	5.50
DPR1012-3R3T	3.3	0.015	5.50
DPR1012-3R9T	3.9	0.020	5.00
DPR1012-4R2T	4.2	0.020	5.00
DPR1012-4R7T	4.7	0.020	5.00
DPR1012-5R6T	5.6	0.025	4.80
DPR1012-6R8T	6.8	0.025	4.80
DPR1012-8R2T	8.2	0.025	4.50
DPR1012-100T	10.0	0.025	4.50
DPR1012-120T	12.0	0.025	4.30
DPR1012-150T	15.0	0.035	4.30
DPR1012-180T	18.0	0.040	4.00
DPR1012-220T	22.0	0.045	3.70
DPR1012-270T	27.0	0.045	3.50
DPR1012-330T	33.0	0.055	3.00
DPR1012-390T	39.0	0.060	2.50
DPR1012-470T	47.0	0.080	2.30
DPR1012-560T	56.0	0.085	2.00
DPR1012-680T	68.0	0.095	2.00
DPR1012-820T	82.0	0.110	1.80
DPR1012-101T	100	0.140	1.70
DPR1012-121T	120	0.160	1.50
DPR1012-151T	150	0.180	1.40
DPR1012-181T	180	0.250	1.30
DPR1012-221T	220	0.280	1.00
DPR1012-271T	270	0.420	0.90
DPR1012-331T	330	0.540	0.80
DPR1012-391T	390	0.600	0.80
DPR1012-471T	470	0.660	0.70
DPR1012-561T	560	0.740	0.60
DPR1012-681T	680	0.840	0.50
DPR1012-821T	820	1.080	0.50
DPR1012-102T	1000	1.390	0.50
DPR1012-152T	1500	1.960	0.30
DPR1012-302T	3000	3.900	0.30
DPR1012-402T	4000	5.460	0.25

* Inductance drop: 10% typ. at IDC.

* T = Tolerance: J = 5%, K = 10%, L = 15%, M = 20%, Y = 30%



Part Number	Inductance(L) (uH) @ 1KHz/0.25V	DCR (Ω) Max.	IDC (Amp) Max.
DPR1016-1R0T	1.0	0.010	9.00
DPR1016-1R5T	1.5	0.015	9.00
DPR1016-1R8T	1.8	0.015	9.00
DPR1016-2R7T	2.7	0.015	9.00
DPR1016-3R3T	3.3	0.015	8.50
DPR1016-3R9T	3.9	0.015	8.00
DPR1016-4R7T	4.7	0.020	7.50
DPR1016-5R6T	5.6	0.025	7.50
DPR1016-6R8T	6.8	0.025	7.50
DPR1016-8R2T	8.2	0.025	7.20
DPR1016-100T	10.0	0.030	7.20
DPR1016-120T	12.0	0.030	7.00
DPR1016-150T	15.0	0.035	6.50
DPR1016-180T	18.0	0.035	6.30
DPR1016-220T	22.0	0.045	5.50
DPR1016-270T	27.0	0.050	4.50
DPR1016-330T	33.0	0.070	4.00
DPR1016-390T	39.0	0.070	3.80
DPR1016-470T	47.0	0.070	3.60
DPR1016-560T	56.0	0.080	3.20
DPR1016-680T	68.0	0.090	3.00
DPR1016-820T	82.0	0.095	2.60
DPR1016-101T	100	0.120	2.50
DPR1016-121T	120	0.140	2.30
DPR1016-151T	150	0.170	2.10
DPR1016-181T	180	0.190	2.00
DPR1016-221T	220	0.250	1.80
DPR1016-271T	270	0.340	1.50
DPR1016-331T	330	0.450	1.50
DPR1016-391T	390	0.510	1.30
DPR1016-471T	470	0.560	1.20
DPR1016-561T	560	0.640	1.00
DPR1016-681T	680	0.710	1.00
DPR1016-821T	820	1.010	0.90
DPR1016-102T	1000	1.200	0.80
DPR1016-222T	2200	5.000	0.50
DPR1016-332T	3300	5.700	0.40
DPR1016-472T	4700	8.000	0.35

* Inductance drop: 10% typ. at IDC.

* T = Tolerance: J = 5%, K= 10%, L= 15%, M= 20%, Y= 30%



●RELIABILITY

ITEM	TEST CONDITIONS	Spec												
Dimension	Actual Size ...	Meet Spec												
Thermal Shock (Temperature Cycle)	Temperature:-40°C/ +125°C kept stabilized for 30 minutes each Cycle: 100 Cycles (power off)	Elec. no variation Appearance no deformation												
Humidity Resistance	Humidity: 90%~ 95% RH Temperature: 60± 2°C Test Time: 96± 2 Hours	Elec. no variation Appearance no deformation												
High Temperature	Temperature: 125± 2°C Testing Time: 96± 2 Hours	Elec. no variation Appearance no deformation												
Low Temperature	Temperature: -40 ± 2°C Time: 96± 2 Hours	Elec. no variation Appearance no deformation												
Temperature and Humidity Cycle	<table border="1"> <thead> <tr> <th>Temp</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>25°C</td> <td>90~95%RH</td> <td>3.0Hr</td> </tr> <tr> <td>55°C</td> <td>95~96%RH</td> <td>5.0Hr</td> </tr> <tr> <td>25°C</td> <td>90~95%RH</td> <td>3.0Hr</td> </tr> </tbody> </table>	Temp	Humidity	Time	25°C	90~95%RH	3.0Hr	55°C	95~96%RH	5.0Hr	25°C	90~95%RH	3.0Hr	Elec. no variation Appearance no deformation
	Temp	Humidity	Time											
	25°C	90~95%RH	3.0Hr											
	55°C	95~96%RH	5.0Hr											
25°C	90~95%RH	3.0Hr												
Vibration	Frequency: 10Hz~55Hz , Amplitude: 1.5mm Direction: X, Y, Z , Time: 2 Hours each	Elec. no variation Appearance no deformation												
Solderability	Go through real SMT IR-Reflow The profile like our suggest profile. Preheat : 160 ± 10°C (90 sec) Peak : 245 ± 5°C Peak Time: 50 Sec. / up 217°C	Elec. no variation Appearance no deformation												
High-Voltage	100 V DC between core & winding	Elec. no variation Appearance no deformation												
Load life	Temperature : 25 ± 3°C Load : Allowed DC Current , Test Time : 96 ± 2 Hours	Elec. no variation Appearance no deformation												



● **TEST EQUIPMENT**

1. HP4284A, HP42841A - L, Q, DCR, IDC
2. HP8753D Network analyzer – SRF

● **OPERATING & STORAGE CONDITION**

1. Operating Temp: -40 ~ +125°C (Including self - temperature rise)
2. Storage Temp: a. Product with Taping: -10 ~ 45°C, 50 ~ 60% RH
b. On Board: -40 ~ +125°C
3. Storage Life Time: 12 Month (Less than 40°C and 60% RH)

Standard Atmosphere Conditions:

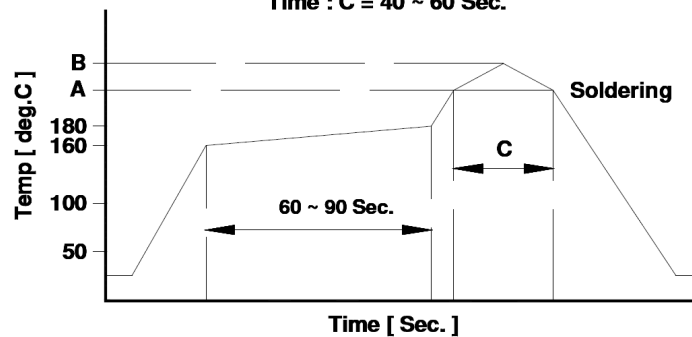
Ambient Temperature 20 ± 15°C; Humidity RH 65 ± 20%

If there may be any doubt on the test result, Measurement shall be made within the following limits:

Ambient Temperature 25 ± 5°C; Humidity RH 75 ± 10%

● **RECOMMEND REFLOW CURVE (TIME: Second)**

Lead Free Solder : A = 217 deg.C , B = 245+/-5 deg.C
Time : C = 40 ~ 60 Sec.



Notice: Iron Soldering, Solder < 30 Watt,
Direct touch the terminal x 3 Sec. Max. @ 350°C

● **ATTENTION & CAUTION:**

- * Keep out of Splashing water or salt water
- * Avoid Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- * Vibrations or shocks which exceed the specified condition
- * Dew condense
- * Layout near the edge of PCB
- * Over flexure after SMT mounting & PCBA
- * Pin foot or SMD pad solder ability: Pb free type is best within 6 months after delivery
- * Humidity sensitive, IPC/JEDEC J-STD-020 MSL if over Level 1, recommend bake 30mins@150°C before PCBA
- * Caution for human life relative applications: PLS contact & consult with AiT team in design stage.



Care Note for Use:

- (1) Storage Condition:
Temperature 25 to 35°C, Humidity 45 to 60% RH
- (2) Use Temperature:
 - a. Minimum Temperature: -40°C Ambient temperature of this product.
 - b. Maximum Temperature: +125°C The value of temperature including ambient and temperature rise of this product.
 - c. Reliability test temperature range from -40 ~ +125°C
 - d. However, this is not meant as temperature grade guarantee for UL.
- (3) Model:
When this product was used in a similar or as new product to the original one, sometimes it might be unable to satisfy the specifications due to difference in condition of usage.
- (4) Drop:
If this product suffered mechanical stress such as drop, characteristics may become poor (due to damage on coil / bobbin / ferrite ... etc.)
Never use such stressed product.

Care Note for Safety:

- (1) Provision to Abnormal Condition:
This product itself does not have any protective function in abnormal condition such as overload, short-circuit and open-circuit conditions, etc.
Therefore, it shall be confirmed from the end product that there is no risk of smoking, fire, dielectric withstand voltage insulation resistance, etc. in abnormal conditions to provide protective devices and /or protection circuit in the end product.
- (2) Temperature Rise:
Temperature rise on this product depends on the installation condition on end products.
It shall be confirmed on the actual end product that temperature rise of this product is within the specified temperature class limit.
- (3) Dielectric Strength:
Dielectric withstanding test with higher voltage than specific value will damage insulating material and shorten its life.
- (4) Water:
This product must not be used in wet condition resulted from water, coffee or any liquid contact because insulation strength becomes very low under such condition.
- (5) Potting:
If this product is potted in some compound, coating material of magnet wire might be occasionally damaged. Please ask us if you intend to pot this product.
- (6) Detergent:
Please consult AiT Semi immediately once under such circumstances because product reliability confirmation etc. is needed when this product come in contact with these chemicals.



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.