



HUGE CURRENT INDUCTOR

GPQ28XX-Series

1. Part No. Expression:

GPQ 28XX 150 K

(a) (b) (c) (d)

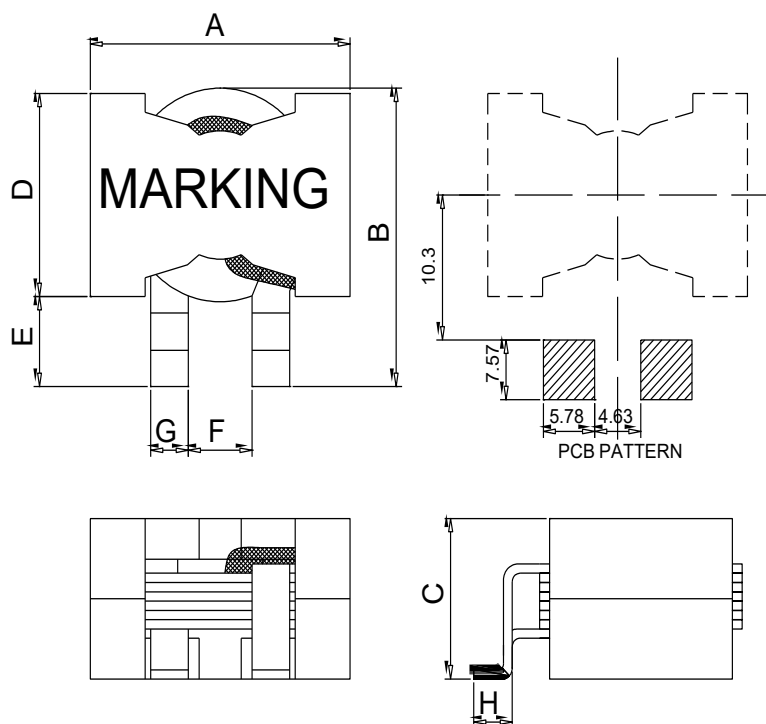
(a)Series code : GPQ28

(b)Heigh : 14.5 or 17mm Max

(c)Inductance code:1R5= 1.5uH, 150=15uH

(d)Tolerance code:K=±10%

2. Configuration & Dimensions : (Unit: mm)

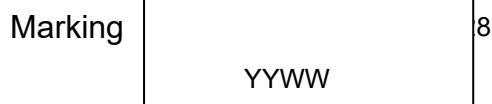


Size C
GPQ2814-K 14.50 max
GPQ2817-K 17.00 max

A	B	D	E	F	G	H
28.0 max	28.0 max	19.30 max	7.0 ± 0.2	6.7 ± 0.2	3.75 ± 0.2	4.7 ± 0.2

Note

1. Recommend solder paste thickness at 0.12 mm and above
2. Product weight typical : 34.5 g ref (GPQ2817)
32.0 g ref

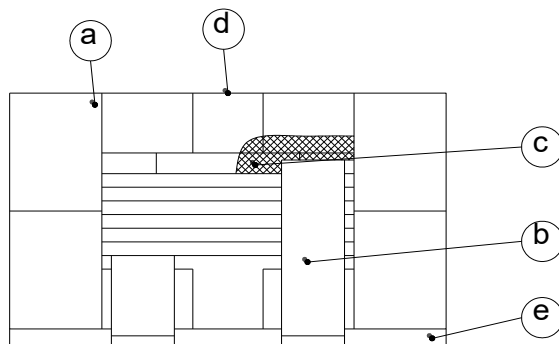


3. Schematic





4. Material List



No.	Description	Specification	Manufacturer	UL File No.
a	Core	Ferrite Core P47 PQ26 or Equivalent	ACME	
b	Wire	Enamelled Copper Wire AIW or Equivalent	WELL ASCENT	E318511
c	Adhesive	Epoxy or Equivalent #6020H-6(NH)/S-9001-6G(NH)	WELLS	
d	Ink	Black	CHEN YAO	

5. General Specification

- (a) Storage Temp.: -40°C - 125°C
- (b) Operating Temp. : -40°C - 85°C (including self temp rise)
- (c) Humidity Range : 60% RH
- (d) Storage condition (component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity : 60% RH



6. Electrical Characteristics

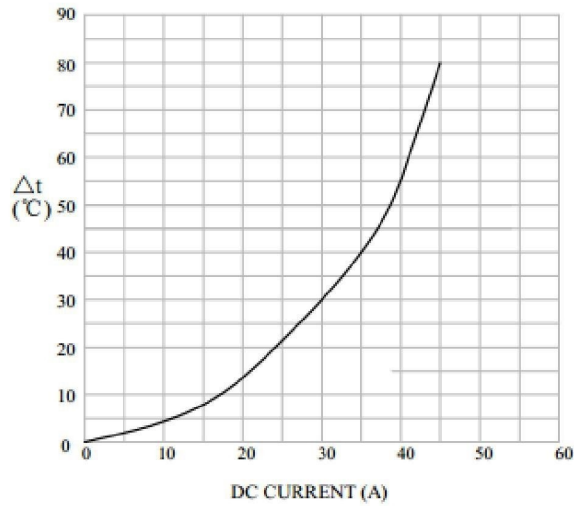
Part No.:	Inductance (uH) @500KHz/0.1V	I rms(A)		I sat(A)			DCR (mΩ) max	SRF (MHz) typ
		20°C typ	40°C typ	10% typ	20% typ	30% typ		
GPQ28141R5K	1.5±10%	20.0	30.0	100	>100	>100	2.0	60.0
GPQ28142R2K	2.2±10%	20.0	30.0	82.0	84.0	84.8	2.0	50.0
GPQ28143R3K	3.3±10%	20.0	30.0	48.0	54.0	57.0	2.0	40.0
GPQ28144R7K	4.7±10%	20.0	30.0	33.0	36.9	39.0	2.0	30.0
GPQ28146R8K	6.8±10%	20.0	30.0	22.0	26.0	27.8	2.0	25.0
GPQ2814100K	10.0±10%	20.0	30.0	13.0	16.2	17.6	2.0	20.0
GPQ2814150K	15.0±10%	20.0	30.0	7.5	9.8	11.0	2.0	15.0
GPQ2814220K	22.0±10%	20.0	30.0	4.5	6.0	6.8	2.0	10.0
GPQ2814330K	33.0±10%	20.0	30.0	2.0	2.60	3.30	2.0	7.0

Part No.:	Inductance (uH) @500KHz/0.1V	I rms(A)		I sat(A)			DCR (mΩ) max	SRF (MHz) typ
		20°C typ	40°C typ	10% typ	20% typ	30% typ		
GPQ28173R3K	3.3±10%	20.0	28.0	91.0	92.5	93.6	2.82	40.0
GPQ28174R7K	4.7±10%	20.0	28.0	59.0	61.2	62.4	2.82	30.0
GPQ28176R8K	6.8±10%	20.0	28.0	42.0	45.0	45.9	2.82	25.0
GPQ2817100K	10.0±10%	20.0	28.0	28.0	31.2	32.1	2.82	20.0
GPQ2817150K	15.0±10%	20.0	28.0	18.0	21.2	21.9	2.82	16.0
GPQ2817220K	22.0±10%	20.0	28.0	12.0	14.0	15.0	2.82	15.0
GPQ2817330K	33.0±10%	20.0	28.0	7.0	8.7	9.6	2.82	10.0

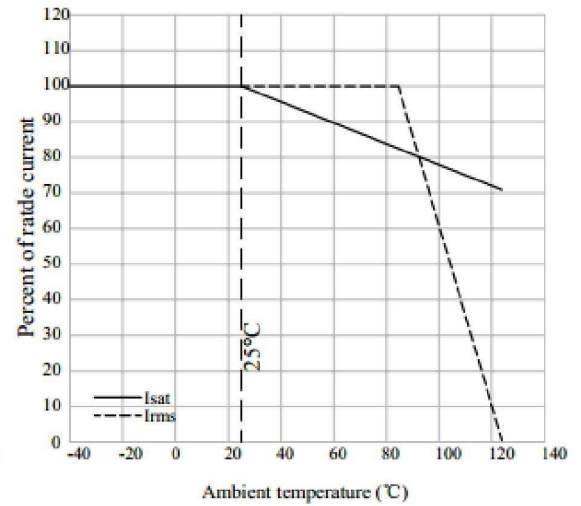


7. Characteristics Curves

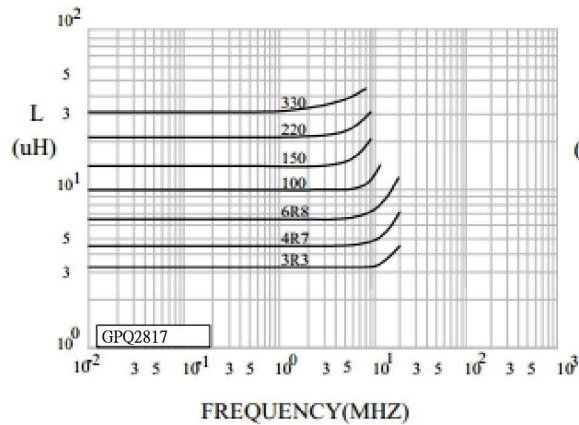
@ TEMP. RISE VS. DC CURRENT RESPONSE CURVE



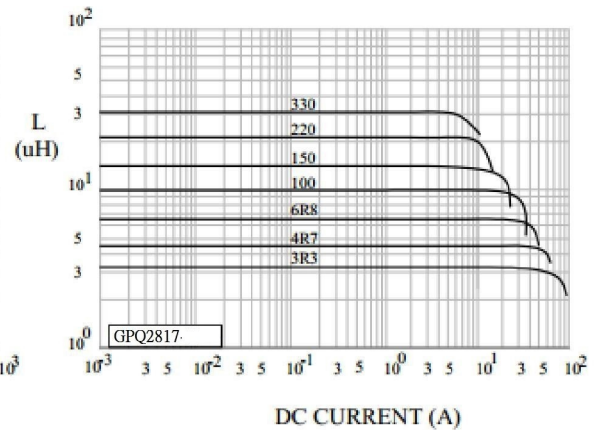
@ CURRENT DERATING RESPONSE CURVE



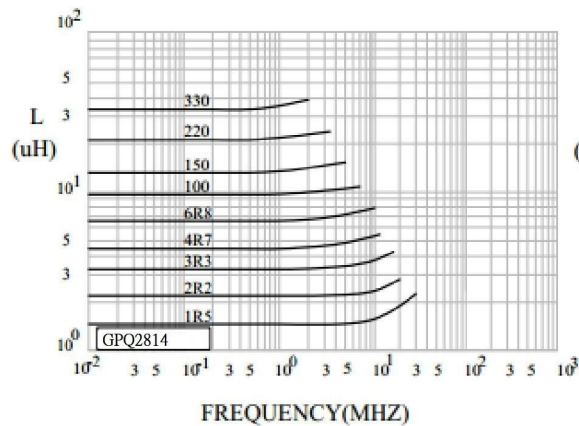
@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



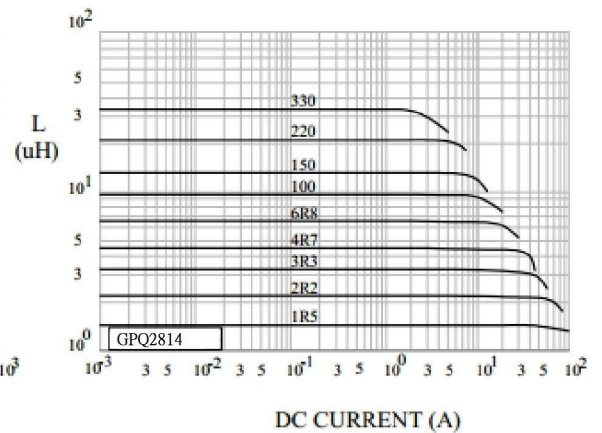
@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



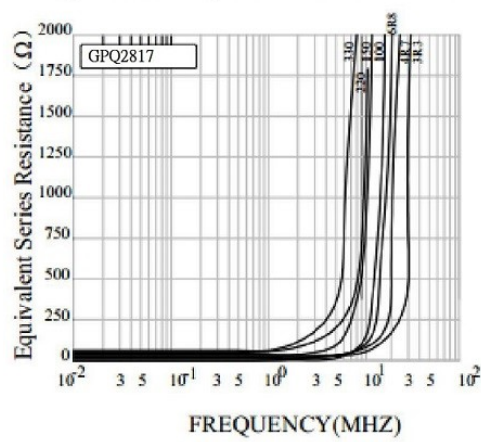
@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



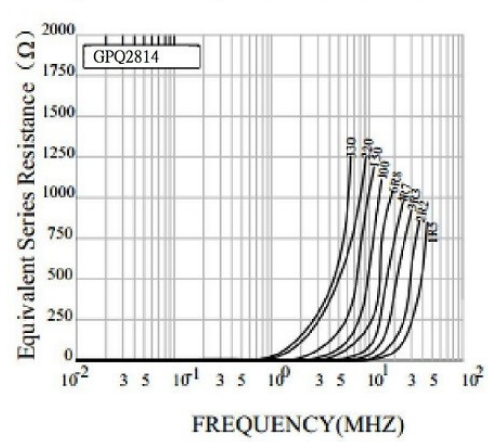


GENERAL COMPONENTS INDUSTRY CORP.

@ ESR VS. FREQUENCY RESPONSE CURVE



@ ESR VS. FREQUENCY RESPONSE CURVE





8. Reliability and Test Condition

TEST ITEM	SPECIFICATION	TEST CONDITION
SOLDERABILITY	MORE THAN 90% OF THE TERMINAL ELECTRODE SHALL BE COVERED WITH FRESH SOLDER.	PREHEAT : $125 \pm 25^{\circ}\text{C}$ FOR 60 SECONDS SOLDER : 99%Sn/0.3%Ag/0.7%Cu OR EQUIVALENT SOLDER TEMP. : $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ FLUX : ROSIN DIP TIME : 4 ± 1 SECONDS
THERMAL SHOCK TEST (TEMP. CYCLE)	INDUCTANCE SHALL NOT CHANGE MORE THAN $\pm 20\%$	ROOM TEMP. $\longrightarrow$ $\frac{-40 \pm 2^{\circ}\text{C}}{30 \text{ MINUTES}}$ ROOM TEMP. $\longrightarrow$ $\frac{125 \pm 2^{\circ}\text{C}}{30 \text{ MINUTES}}$ TOTAL : 50 CYCLES
HUMIDITY RESISTANCE TEST		TEMPERATURE : $40 \pm 2^{\circ}\text{C}$ HUMIDITY : 90 ~ 95% APPLIED CURRENT : PER SPEC. TIME : 500 HOURS
HIGH TEMP. RESISTANCE TEST		TEMPERATURE : $125 \pm 2^{\circ}\text{C}$ APPLIED CURRENT : PER SPEC. TIME : 500 HOURS



9. Soldering and Mounting

Mildly activated rosin fluxes are preferred. The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate. Our terminations are suitable for all re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air.

9-1.1 Solder Re-flow:

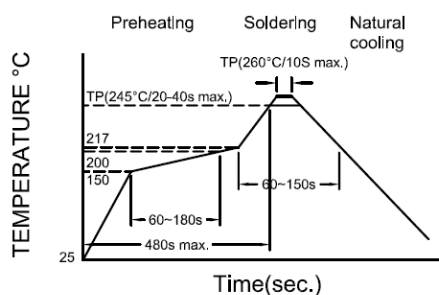
Recommended temperature profiles for re-flow soldering in Figure 1.

9-1.2 Soldering Iron (Figure 2):

Products attachment with soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

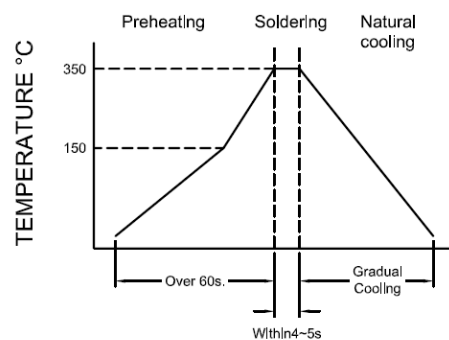
Note :

- Preheat circuit and products to 150°C.
- 355°C tip temperature (max)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (max)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5 secs.



Reflow times: 3 times max

Fig.1



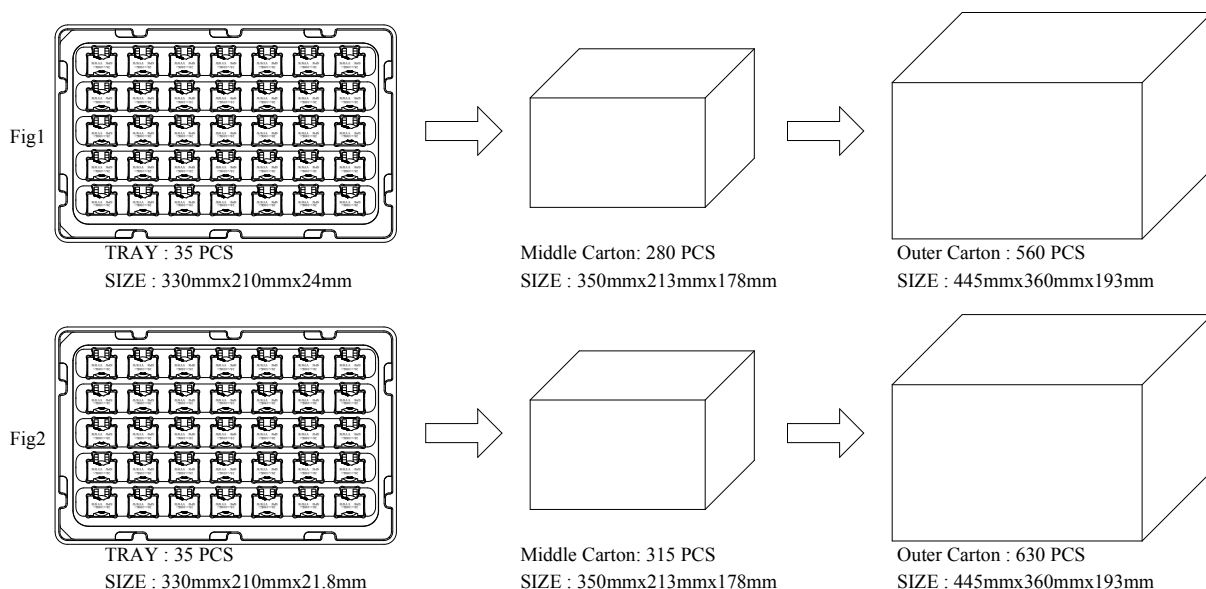
Iron Soldering times: 1 times max

Fig.2



10. Packaging Information

CODE	INNER PACKAGE Q'TY	MIDDLE PACKAGE Q'TY	OUTER PACKAGE Q'TY	Fig
GPQ2817	35 PCS	280 PCS	560 PCS	1
GPQ2814	35 PCS	315 PCS	630 PCS	2



Application Notice:

1. Storage Conditions:

To maintain the solderability of terminal electrodes:

- Recommended products should be used within 12 months from the time of delivery.
- The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation:

- Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- Vacuum pick up is strongly recommended for individual components.
- Bulk handling should ensure that abrasion and mechanical shock are minimized.