

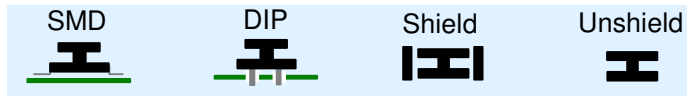


| | | | |
|------------------|------------------|-------------|------------------------|
| Product Series | GMBT | Brand | GOTREND |
| File Version | GMBT-SERIES-V2R4 | Editor | Teddy |
| Established Date | 2009.05.08 | Description | Dip Choke High-Current |
| Latest Edit Date | 2020.06.19 | Pages | Page : 2 |

Features & Application:

- * High-Current, Low DCR,
- * Magnetic Shielded for excellent EMI effect
- * No air-space and large energy storage capability
- * Through-hole high-current
- * PWM circuit inductance & isolation
- * M/B, NB, IPC various switching power application

Product Structure



2005 RoHS Compliant - SGS Certified Result

| | | | | | |
|----------|----|----|------|-----|------|
| Pb | Cd | Hg | Cr+6 | PBB | PBDE |
| <1000ppm | ND | ND | ND | ND | ND |

Part No Example:

GMBT 121208 P - R40 M

1 2 3 4 5

1. Product Code : GMBT
2. Size Code : 121208 = 12.0 x 12.0 x 8.0
3. P = Pb Free < 1000ppm
4. [L] Value : Inductance Ex. : R40 = 0.4 uH
5. [L] Tolerance : M = +/-20%, N = +/-30%

Test Equipment :

* HP4284A , HP42841A - L , DCR , Isat , Irms

Standard Atmospheric Conditions :
 Ambient Temp : 25 +/- 15°C
 Relative Humidity : 65 +/- 20%
 If there may be any doubt on the result,
 measurement shall be made within the following limits :
 Ambient Temp : 25 +/- 5°C
 Relative Humidity : 75 +/- 10%

Operating & Storage Condition:

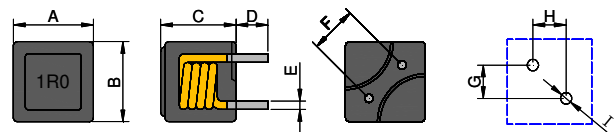
Operating Temp : -25 ~ +125°C
 Storage Temp : -25 ~ +125°C
 Storage Life Time: 12 Month @25°C , RH 40~65%

Attention & Caution:

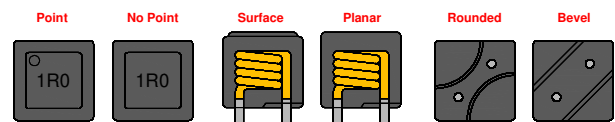
Please avoid following matters:

- * Splashing water or salt water
- * Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- * Vibrations or shocks which exceed the specified condition
- * Dew condenses
- * Please be careful for the stress to this product by board flexure or something after the mounting.
- * This product meet IPC/JEDEC J-STD-020D standard-MSL , level 2a. It is recommended to bake and dehumidify at 150 degrees for 90 minutes or refer to IPC / JEDEC J-STD-033 corresponding to the baking conditions of MSL 2a level before use.

DIMENSION : [mm]



In response to different production molds will look slightly difference.



| TYPE | A[Max.] | B[Max.] | C[Max.] | D[+/-0.5] | E[+/-0.1] | F[+/-0.5] | G[Ref.] | H[Ref.] | I[Ref.] |
|------------|---------|---------|---------|-----------|-----------|-----------|---------|---------|---------|
| GMBT080808 | 8.80 | 8.80 | 8.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT101010 | 11.00 | 11.00 | 10.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT121208 | 12.00 | 12.00 | 8.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT121209 | 12.00 | 12.00 | 9.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT121210 | 12.00 | 12.00 | 10.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT121212 | 12.00 | 12.00 | 12.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |
| GMBT131211 | 13.00 | 13.00 | 11.00 | 3.50 | By P/N | By P/N | By P/N | By P/N | By P/N |

[C] Dimension : GMBT080808P-1R2M ~ 2R2M = 8.5 mm Max. ; 3R3M = 9.0 mm Max. ; GMBT131211P-3R3M = 12.0 mm Max.

Wave Solder Condition :

Pre-heat TEMP. 1 : 110 +/- 5 °C
 Pre-heat TEMP. 2 : 90 °C ~ 145 °C
 Peak TEMP. : 260 °C ~ 265 °C / 3 ~ 6 sec.



| | | | |
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| Established Date | 2009.05.08 | Description | Dip Choke High-Current |
| Latest Edit Date | 2020.06.19 | Pages | Page : 3 |

Electrical Characteristics :

| PART NO. | L (uH) ± 20% @100KHz,1V | Isat (Amp) | Irms (Amp) | DCR (m Ohm) | Dimension (mm) | | | | |
|------------------|----------------------------|---------------|---------------|----------------|----------------|---------------|-------------|-------------|-------------|
| | | (TYP.) | (TYP.) | (TYP./MAX.) | E (+/-0.1) | F (+/-0.5) | G (REF.) | H (REF.) | I (REF.) |
| GMBT080808P-R20M | 0.20 | 35 | 25 | 1.80 / 2.00 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R30M | 0.30 | 30 | 22 | 2.40 / 2.80 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R36M | 0.36 | 28 | 22 | 2.40 / 2.80 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R39M | 0.39 | 26 | 22 | 2.40 / 2.80 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R47M | 0.47 | 24 | 20 | 3.00 / 3.60 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R60M | 0.60 | 23 | 20 | 3.00 / 3.60 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R68M | 0.68 | 22 | 20 | 3.00 / 3.60 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-R80M | 0.80 | 20 | 18 | 3.60 / 4.00 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-1R0M | 1.00 | 19 | 18 | 3.60 / 4.00 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-1R2M | 1.20 | 17 | 17 | 4.00 / 4.75 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-1R5M | 1.50 | 16 | 16 | 5.00 / 5.50 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-1R8M | 1.80 | 15 | 16 | 5.00 / 5.50 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-2R2M | 2.20 | 14 | 14 | 5.60 / 6.20 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT080808P-3R3M | 3.30 | 12 | 12 | 6.30 / 7.00 | 0.70 | 6.30 | 4.50 | 4.40 | 1.10 |
| GMBT101010P-R20M | 0.20 | 60 | 50 | 0.45 / 0.60 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R25M | 0.25 | 60 | 40 | 0.65 / 0.75 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R30M | 0.30 | 60 | 40 | 0.65 / 0.75 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R33M | 0.33 | 60 | 40 | 0.65 / 0.75 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R36M | 0.36 | 50 | 40 | 0.65 / 0.75 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R39M | 0.39 | 50 | 40 | 0.65 / 0.75 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R47M | 0.47 | 50 | 35 | 0.90 / 1.10 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R60M | 0.60 | 50 | 35 | 0.90 / 1.10 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-R80M | 0.80 | 40 | 33 | 1.10 / 1.30 | 1.40 | 7.50 | 4.50 | 6.00 | 1.90 |
| GMBT101010P-1R0M | 1.00 | 40 | 27 | 1.55 / 1.80 | 1.20 | 7.50 | 4.50 | 6.00 | 1.70 |
| GMBT101010P-1R5M | 1.50 | 30 | 21 | 2.70 / 3.00 | 1.00 | 7.50 | 4.50 | 6.00 | 1.50 |
| GMBT101010P-1R8M | 1.80 | 30 | 21 | 2.70 / 3.00 | 1.00 | 7.50 | 4.50 | 6.00 | 1.50 |
| GMBT101010P-2R2M | 2.20 | 30 | 18 | 3.70 / 4.00 | 1.00 | 7.50 | 4.50 | 6.00 | 1.50 |
| GMBT121208P-R25M | 0.25 | 80 | 45 | 0.70 / 0.80 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121208P-R30M | 0.30 | 80 | 45 | 0.70 / 0.80 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121208P-R33M | 0.33 | 70 | 45 | 0.70 / 0.80 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121208P-R36M | 0.36 | 60 | 45 | 0.70 / 0.80 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121208P-R40M | 0.40 | 65 | 38 | 0.75 / 0.90 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121209P-R47M | 0.47 | 60 | 40 | 0.90 / 1.00 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121209P-R50M | 0.50 | 60 | 40 | 0.90 / 1.00 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121209P-R56M | 0.56 | 50 | 40 | 0.90 / 1.00 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121209P-R60M | 0.60 | 50 | 40 | 0.90 / 1.00 | 1.50 | 8.50 | 5.70 | 6.30 | 2.00 |
| GMBT121209P-R68M | 0.68 | 40 | 35 | 0.90 / 1.00 | 1.40 | 8.50 | 5.70 | 6.30 | 1.90 |
| GMBT121210P-R80M | 0.80 | 45 | 25 | 1.30 / 1.60 | 1.40 | 8.50 | 5.70 | 6.30 | 1.90 |
| GMBT121210P-1R0M | 1.00 | 45 | 25 | 1.40 / 1.80 | 1.40 | 8.50 | 5.70 | 6.30 | 1.90 |
| GMBT121210P-1R2M | 1.20 | 33 | 23 | 1.70 / 2.00 | 1.20 | 8.50 | 5.70 | 6.30 | 1.70 |
| GMBT121210P-1R5M | 1.50 | 32 | 21 | 2.20 / 2.50 | 1.20 | 8.50 | 5.70 | 6.30 | 1.70 |
| GMBT121210P-2R0M | 2.00 | 27 | 15 | 3.30 / 4.00 | 1.00 | 8.50 | 5.70 | 6.30 | 1.50 |
| GMBT121210P-2R2M | 2.20 | 40 | 15 | 4.50 / 5.00 | 1.00 | 8.50 | 5.70 | 6.30 | 1.50 |
| GMBT121210P-2R5M | 2.50 | 30 | 15 | 4.50 / 5.00 | 1.00 | 8.50 | 5.70 | 6.30 | 1.50 |
| GMBT121212P-4R7M | 4.70 | 20 | 10 | 5.50 / 6.00 | 1.00 | 8.50 | 5.70 | 6.30 | 1.50 |

* Test Condition@100KHz,1Vrms, 25°C Ambient

* Isat=Current loading caused L value drop approximately 20%

* Iirms=Current loading caused the parts temperature rise about 40°C



| | | | |
|------------------|------------------|-------------|------------------------|
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| Established Date | 2009.05.08 | Description | Dip Choke High-Current |
| Latest Edit Date | 2020.06.19 | Pages | Page : 4 |

Electrical Characteristics :

| PART NO. | L (uH) ± 20% @100KHz,1V | Isat (Amp) | Irms (Amp) | DCR (m Ohm) | Dimension (mm) | | | | |
|------------------|----------------------------|---------------|---------------|----------------|----------------|---------------|-------------|-------------|-------------|
| | | (TYP.) | (TYP.) | (TYP./MAX.) | E (+/-0.1) | F (+/-0.5) | G (REF.) | H (REF.) | I (REF.) |
| GMBT131211P-R22M | 0.22 | 60 | 45 | 0.40 / 0.55 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R30M | 0.30 | 60 | 40 | 0.55 / 0.70 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R33M | 0.33 | 60 | 40 | 0.55 / 0.70 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R39M | 0.39 | 60 | 40 | 0.55 / 0.70 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R47M | 0.47 | 60 | 40 | 0.70 / 0.80 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R50M | 0.50 | 60 | 40 | 0.70 / 0.80 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R56M | 0.56 | 60 | 40 | 0.70 / 0.80 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R60M | 0.60 | 60 | 40 | 0.70 / 0.80 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R68M | 0.68 | 50 | 40 | 0.70 / 0.80 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-R80M | 0.80 | 50 | 40 | 0.70 / 0.85 | 1.70 | 10.00 | 6.50 | 7.60 | 2.20 |
| GMBT131211P-1R0M | 1.00 | 50 | 30 | 1.20 / 1.35 | 1.50 | 10.00 | 6.50 | 7.60 | 2.00 |
| GMBT131211P-1R2M | 1.20 | 40 | 30 | 1.20 / 1.50 | 1.50 | 10.00 | 6.50 | 7.60 | 2.00 |
| GMBT131211P-1R5M | 1.50 | 40 | 30 | 1.50 / 1.70 | 1.40 | 10.00 | 6.50 | 7.60 | 1.90 |
| GMBT131211P-2R0M | 2.00 | 25 | 17 | 2.90 / 3.30 | 1.20 | 10.00 | 6.50 | 7.60 | 1.70 |
| GMBT131211P-2R2M | 2.20 | 25 | 17 | 2.90 / 3.30 | 1.20 | 10.00 | 6.50 | 7.60 | 1.70 |
| GMBT131211P-3R3M | 3.30 | 20 | 15 | 3.30 / 4.00 | 1.20 | 10.00 | 6.50 | 7.60 | 1.70 |

* Test Condition@100KHz,1Vrms, 25°C Ambient

* Isat=Current loading caused L value drop approximately 20%

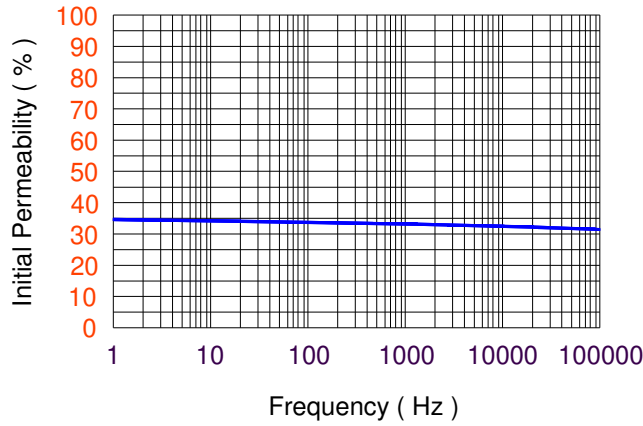
* Irms=Current loading caused the parts temperature rise about 40°C



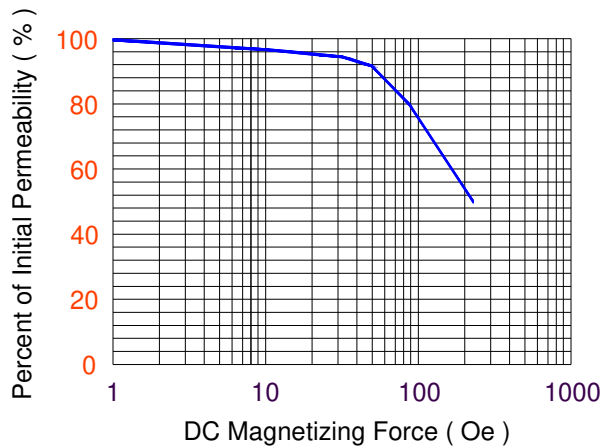
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Material Character Curve:

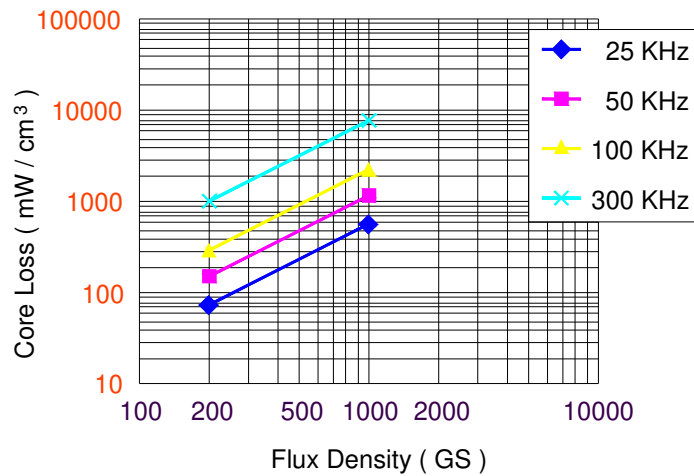
Initial permeability VS Frequency




Percent of Initial Permeability VS DC Magnetizing Force



Core Loss VS Flux Density



| | | | | |
|---|------------------|-------------------------|-------------|-------------------------------|
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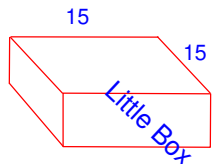
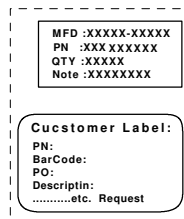
Reliability :

| NO | ITEM | TEST CONDITIONS | Sample Qty/pcs | Specification | Result | | | | | | | | | | | | | | | | |
|------|-----------------------------------|---|----------------|--|----------|------|---|-----------|----------|-------|---|-----------|----------|-------|---|-----------|----------|-------|----|--|----|
| 1 | Dimension | Actual Size ... | 10 | Meet Spec | ok | | | | | | | | | | | | | | | | |
| 2 | Thermal Shock (Temperature Cycle) | Temperature : -25 ° C~+125 ° C kept stabilized for 30 minutes each Cycle : 100 Cycle (Power off) | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |
| 3 | Humidity Resistance | Humidity: 90%~ 95% RH Temperature: 40± 2 ° C Test Time: 96± 2 Hours | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |
| 4 | HighTemperature | Temperature: 125± 2 ° C Testing Time: 96± 2 Hours | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |
| 5 | Low Temperature | Temperature: -25 ± 2 ° C Time: 96± 2 Hours | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |
| 6 | Temperature and Humidity Cycle | <table border="1"> <thead> <tr> <th>Step</th> <th>Temp</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25± 2 ° C</td> <td>90-95%RH</td> <td>3.0Hr</td> </tr> <tr> <td>2</td> <td>55± 2 ° C</td> <td>95-96%RH</td> <td>5.0Hr</td> </tr> <tr> <td>3</td> <td>25± 2 ° C</td> <td>90-95%RH</td> <td>3.0Hr</td> </tr> </tbody> </table> Cycle: 20 Cycles | Step | Temp | Humidity | Time | 1 | 25± 2 ° C | 90-95%RH | 3.0Hr | 2 | 55± 2 ° C | 95-96%RH | 5.0Hr | 3 | 25± 2 ° C | 90-95%RH | 3.0Hr | 10 | Elec. no variation Appearance no deformation | ok |
| Step | Temp | Humidity | Time | | | | | | | | | | | | | | | | | | |
| 1 | 25± 2 ° C | 90-95%RH | 3.0Hr | | | | | | | | | | | | | | | | | | |
| 2 | 55± 2 ° C | 95-96%RH | 5.0Hr | | | | | | | | | | | | | | | | | | |
| 3 | 25± 2 ° C | 90-95%RH | 3.0Hr | | | | | | | | | | | | | | | | | | |
| 7 | Vibration | Frequency: 10Hz~50Hz Amplitude: 1.5mm Direction: X,Y,Z Time: 2 Hours each | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |
| 8 | Solderability | Solder : Sn96.5 / Ag3.0 / Cu0.5 Per-Heating : 150± 10 ° C / 1min. to 2min. Solder Temperature: 245± 5 ° C Immersion Time 4s ± 1s Electrode shall be at least 75% | 10 | Elec. no variation Appearance no deformation | ok | | | | | | | | | | | | | | | | |

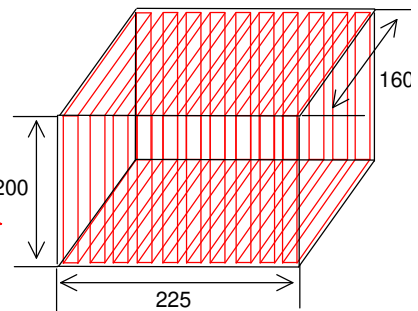
Package Information:

BOX Package: cm

Small Tray:1200 pcs
Large Box:2400 pcs



10 Little Box in



- * 1 Large Box (2400)= 2 Small Boxes (1200 x2)=20 Component Holders (120 x20)
- * Each collection box carries 10 plastic holder
- * Each packaging box holds 2 collection box
- * Every packing box has the maximum capacity of carrying 2400 pcs

