

## KYOCERA CERQUAD® PACKAGES



Notes (1) Die Attach Cavity Option: Bare Ceramic Surface or Gold Paste

(2) Leadframe Surface Finish Option: Aluminum Thin Film Deposition on Wire Bond Area or Electrolytic Gold Plating on All the Surface of Leadframes

(3) CERQUAD is a registered trademark of KYOCERA Corporation.

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UNIT : mm [Click here for inch dimensions](#)

R0165B

| LEAD COUNT | CAVITY Length E | CAVITY WIDTH D | CAVITY DEPTH F | CERAMIC LENGTH B | CERAMIC WIDTH A | CERAMIC THICKNESS C | EXTERNAL LEAD PITCH P | EXTERNAL LEAD WIDTH W | LEAD TIP TO TIP | LEAD TIP TO TIP | CORNER SHAPE | WINDOW FRAME | BEND FORM | REFERENCE    | PACKAGE DRAWING NUMBER | MATCHING GLASS SEAL CERAMIC LID | MATCHING EPOXY SEAL CERAMIC LID |
|------------|-----------------|----------------|----------------|------------------|-----------------|---------------------|-----------------------|-----------------------|-----------------|-----------------|--------------|--------------|-----------|--------------|------------------------|---------------------------------|---------------------------------|
| 20         | 5.21            | 5.21           | 0.38           | 9.52             | 9.52            | 0.91                | 1.27                  | 0.48                  | 10.29           | 10.29           | A            |              | J         |              | QC-020203-J            | BE-02404                        |                                 |
| 28         | 6.35            | 6.35           | 0.38           | 11.43            | 11.43           | 1.27                | 1.27                  | 0.48                  | 12.40           | 12.40           | B            |              | J         |              | QC-028237-J            | KKC-10682                       |                                 |
| 28         | 6.86            | 6.86           | 0.38           | 11.43            | 11.43           | 1.27                | 1.27                  | 0.48                  | 12.40           | 12.40           | B            |              | J         |              | QC-028232-J-2          | KKC-10682                       |                                 |
| 28         | 7.87            | 7.87           | 0.38           | 11.43            | 11.43           | 1.27                | 1.27                  | 0.48                  | 12.40           | 12.40           | B            |              | J         |              | QC-028235-J            | KKC-10682                       |                                 |
| 32         | 7.37            | 5.72           | 0.38           | 13.97            | 11.43           | 1.02                | 1.27                  | 0.48                  | 14.94           | 12.40           | B            |              | J         |              | QC-032233-J            | KKC-10712                       |                                 |
| 32         | 7.62            | 7.11           | 0.38           | 13.97            | 11.43           | 1.02                | 1.27                  | 0.48                  | 14.94           | 12.40           | B            |              | J         |              | QC-032215-J            | KKC-10712                       |                                 |
| 32         | 8.56            | 8.03           | 0.38           | 13.97            | 11.43           | 1.02                | 1.27                  | 0.48                  | 14.94           | 12.40           | B            |              | J         |              | QC-032211-J Rev.1      | KKC-10712                       |                                 |
| 44         | 5.60            | 5.60           | 0.38           | 10.00            | 10.00           | 1.27                | 0.80                  | 0.40                  |                 |                 | B            | YES          | F         |              | QC-044341-W            | KKC-10774                       | KE-91301                        |
| 44         | 7.24            | 7.24           | 0.38           | 13.97            | 13.97           | 1.27                | 1.00                  | 0.40                  | 29.40           | 28.40           | C            | YES          | Z         | WITH TIE-BAR | QC-044301-WZ           | KKC-10453                       | KE-81714                        |
| 44         | 7.62            | 7.62           | 0.38           | 16.51            | 16.51           | 1.27                | 1.27                  | 0.48                  | 17.48           | 17.48           | B            |              | J         |              | QC-044248-J-1          | KKC-10683                       |                                 |
| 44         | 10.16           | 10.16          | 0.38           | 16.51            | 16.51           | 1.27                | 1.27                  | 0.48                  | 17.48           | 17.48           | B            |              | J         |              | QC-044249-J-1          | KKC-10683                       |                                 |
| 44         | 10.92           | 10.92          | 0.38           | 16.51            | 16.51           | 1.27                | 1.27                  | 0.48                  | 17.48           | 17.48           | B            |              | J         |              | QC-044253-J-1          | KKC-10683                       |                                 |
| 44         | 11.43           | 11.43          | 0.38           | 16.51            | 16.51           | 1.27                | 1.27                  | 0.48                  | 17.48           | 17.48           | B            |              | J         |              | QC-044250-J-1          | KKC-10683                       |                                 |
| 44         | 6.35            | 6.35           | 0.38           | 16.51            | 16.51           | 1.27                | 1.27                  | 0.48                  | 17.48           | 17.48           | B            |              | J         |              | QC-044276-J            | KKC-10683                       |                                 |
| 48         | 7.24            | 7.24           | 0.38           | 13.97            | 13.97           | 1.02                | 1.02                  | 0.48                  | 15.24           | 15.24           | B            |              | J         |              | QC-048303-J            | KKC-10497                       |                                 |
| 48         | 7.24            | 7.24           | 0.38           | 13.97            | 13.97           | 0.95                | 1.00                  | 0.35                  | 29.40           | 28.40           | B            | YES          | Z         | WITH TIE-BAR | QC-048304-WZ Rev.2     | KKC-10497                       | KE-91473-1                      |
| 48         | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 1.00                  | 0.35                  | 29.40           | 28.40           | B            | YES          | Z         | WITH TIE-BAR | QC-048305-WZ Rev.2     | KKC-10497                       | KE-91473-1                      |
| 52         | 7.24            | 7.24           | 0.38           | 13.97            | 13.97           | 1.27                | 1.00                  | 0.40                  | 18.62           | 18.62           | C            | YES          | Z         |              | QC-052305-WZ           | KKC-10453                       | KE-81714                        |
| 52         | 10.16           | 10.16          | 0.38           | 19.05            | 19.05           | 1.27                | 1.27                  | 0.48                  | 20.02           | 20.02           | B            |              | J         |              | QC-052215-J-1          | KKC-10671                       |                                 |
| 52         | 13.97           | 13.97          | 0.38           | 19.05            | 19.05           | 1.27                | 1.27                  | 0.48                  | 20.02           | 20.02           | B            |              | J         |              | QC-052218-J            | KKC-10671                       |                                 |
| 64         | 5.60            | 5.60           | 0.38           | 10.00            | 10.00           | 1.25                | 0.50                  | 0.20                  | 12.40           | 12.40           | B            | YES          | Z         |              | QC-064347-WZ           | KKC-10774                       | KE-91301                        |
| 64         | 7.24            | 7.24           | 0.38           | 13.97            | 13.97           | 0.95                | 0.80                  | 0.35                  | 29.40           | 28.40           | B            | YES          | Z         | WITH TIE-BAR | QC-064307-WZ           | KKC-10497                       | KE-91473-1                      |
| 64         | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.80                  | 0.35                  | 29.40           | 28.40           | B            | YES          | Z         | WITH TIE-BAR | QC-064308-WZ Rev.1     | KKC-10497                       | KE-91473-1                      |
| 64         | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.80                  | 0.35                  | 16.40           | 16.40           | B            | YES          | Z         |              | QC-064315-WZ           | KKC-10497                       | KE-91473-1                      |
| 64         | 7.11            | 7.11           | 0.40           | 20.00            | 14.00           | 0.95                | 1.00                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR | QC-064305-WZ           | KKC-10384                       | KE-91473-1                      |
| 64         | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 1.00                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR | QC-064306-WZ           | KKC-10384                       | KE-90655                        |
| 64         | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 1.00                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         |              | QC-064311-WZ           | KKC-10384                       | KE-90655                        |
| 68         | 10.16           | 10.16          | 0.38           | 24.13            | 24.13           | 1.27                | 1.27                  | 0.48                  | 25.10           | 25.10           | B            |              | J         |              | QC-068271-J-1          | KKC-10571                       |                                 |
| 68         | 12.07           | 12.07          | 0.38           | 24.13            | 24.13           | 1.27                | 1.27                  | 0.48                  | 25.10           | 25.10           | B            |              | J         |              | QC-068263-J-2          | KKC-10571                       |                                 |
| 68         | 16.51           | 16.51          | 0.38           | 24.13            | 24.13           | 1.27                | 1.27                  | 0.48                  | 25.10           | 25.10           | B            | YES          | J         |              | QC-068285-WJ           | KKC-10899 Rev.1                 | KE-90456                        |
| 80         | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.65                  | 0.30                  | 17.00           | 17.00           | B            | YES          | Z         |              | QC-080324-WZ           | KKC-10497                       | KE-91473-1                      |
| 80         | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.65                  | 0.30                  | 30.14           | 29.14           | B            | YES          | Z         | WITH TIE-BAR | QC-080333-WZ           | KKC-10497                       | KE-91473-1                      |
| 80         | 7.11            | 7.11           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR | QC-080312-WZ           | KKC-10384                       | KE-90655                        |
| 80         | 7.11            | 7.11           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 26.80           | 20.90           | B            | YES          | Z         |              | QC-080314-WZ           | KKC-10384                       | KE-90655                        |
| 80         | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR | QC-080311-WZ Rev.1     | KKC-10384                       | KE-90655                        |
| 80         | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         |              | QC-080318-WZ           | KKC-10384                       | KE-90655                        |
| 80         | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR | QC-080306-WZ Rev.3     | KKC-10384                       | KE-90655                        |
| 80         | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.80                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         |              | QC-080326-WZ           | KKC-10384                       | KE-90655                        |
| 84         | 7.62            | 7.62           | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 29.97           | 29.97           | B            |              | J         |              | QC-084222-J            | KKC-10577                       |                                 |
| 84         | 10.16           | 10.16          | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 29.97           | 29.97           | B            | YES          | J         |              | QC-084206-WJ Rev.1     | KKC-10312                       | KE-91175                        |
| 84         | 11.43           | 11.43          | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 29.97           | 29.97           | B            | YES          | J         |              | QC-084202-WJ-1         | KKC-10312                       | KE-91175                        |
| 84         | 11.43           | 11.43          | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 30.18           | 30.18           | B            |              | J         |              | QC-084228-J            | KKC-10577                       |                                 |

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R0165B

| LEAD COUNT | CAVITY Length E | CAVITY WIDTH D | CAVITY DEPTH F | CERAMIC LENGTH B | CERAMIC WIDTH A | CERAMIC THICKNESS C | EXTERNAL LEAD PITCH P | EXTERNAL LEAD WIDTH W | LEAD TIP TO TIP | LEAD TIP TO TIP | CORNER SHAPE | WINDOW FRAME | BEND FORM | REFERENCE             | PACKAGE DRAWING NUMBER | MATCHING GLASS SEAL CERAMIC LID | MATCHING EPOXY SEAL CERAMIC LID |
|------------|-----------------|----------------|----------------|------------------|-----------------|---------------------|-----------------------|-----------------------|-----------------|-----------------|--------------|--------------|-----------|-----------------------|------------------------|---------------------------------|---------------------------------|
| 84         | 11.94           | 11.94          | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 29.97           | 29.97           | B            | YES          | J         |                       | QC-084245-WJ           | KKC-10312                       | KE-91175                        |
| 84         | 12.95           | 12.95          | 0.38           | 29.21            | 29.21           | 1.27                | 1.27                  | 0.48                  | 29.97           | 29.97           | B            |              | J         |                       | QC-084224-J            | KKC-10577                       |                                 |
| 100        | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.50                  | 0.20                  | 17.00           | 17.00           | B            | YES          | Z         |                       | QC-100364-WZ           | KKC-10497                       | KE-91473-1                      |
| 100        | 9.80            | 9.80           | 0.38           | 13.97            | 13.97           | 0.95                | 0.50                  | 0.20                  | 30.00           | 29.00           | B            | YES          | Z         | WITH TIE-BAR          | QC-100367-WZ           | KKC-10497                       | KE-91473-1                      |
| 100        | 7.11            | 7.11           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 26.80           | 20.90           | B            | YES          | Z         |                       | QC-100322-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 7.11            | 7.11           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR          | QC-100338-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 7.90            | 7.90           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | No.1 PIN WITH TIE-BAR | QC-100348-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | WITH TIE-BAR          | QC-100316-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 8.99            | 8.99           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         |                       | QC-100333-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 32.80           | 25.70           | B            | YES          | Z         | No.1 PIN WITH TIE-BAR | QC-100346-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         |                       | QC-100334-WZ           | KKC-10384                       | KE-90655                        |
| 100        | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.65                  | 0.35                  | 23.90           | 17.91           | B            | YES          | Z         | No.1 PIN              | QC-100354-WZ           | KKC-10384                       | KE-90655                        |
| 120        | 8.13            | 8.13           | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-120309-WZ           | KKC-10430                       | KE-91033                        |
| 120        | 10.20           | 10.20          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-120312-WZ           | KKC-10430                       | KE-91033                        |
| 120        | 11.68           | 11.68          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-120304-WZ           | KKC-10430                       | KE-91033                        |
| 120        | 11.68           | 11.68          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-120308-WZ           | KKC-10430                       | KE-91033                        |
| 120        | 14.00           | 14.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-120319-WZ           | KKC-10430                       | KE-91033                        |
| 120        | 14.00           | 14.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-120368-WZ           | KKC-10430                       | KE-91033                        |
| 124        | 11.43           | 11.43          | 0.38           | 24.13            | 24.13           | 1.27                | 0.635                 | 0.30                  | 30.73           | 30.73           | C            | YES          | Z         |                       | QC-124416-WZ           | KKC-10312                       | KE-91250                        |
| 128        | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.50                  | 0.20                  | 23.90           | 17.91           | B            | YES          | Z         |                       | QC-128318-WZ           | KKC-10384                       | KE-90655                        |
| 128        | 11.00           | 9.00           | 0.40           | 20.00            | 14.00           | 0.95                | 0.50                  | 0.20                  | 32.80           | 25.70           | B            | YES          |           | WITH TIE-BAR          | QC-128325-WZ           | KKC-10384                       | KE-90655                        |
| 128        | 10.20           | 10.20          | 0.38           | 27.20            | 27.20           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-128337-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-128351-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 10.20           | 10.20          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  |                 |                 | B            | YES          | F         | No.1 PIN              | QC-128309-W Rev.1      | KKC-10430                       | KE-91033                        |
| 128        | 10.20           | 10.20          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | No.1 PIN WITH TIE-BAR | QC-128311-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-128303-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-128307-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-128312-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-128317-WZ           | KKC-10430                       | KE-91033                        |
| 128        | 10.20           | 10.20          | 0.38           | 28.00            | 28.00           | 1.27                | 0.80                  | 0.35                  | 32.00           | 32.00           | B            | YES          | Z         | No.1 PIN              | QC-128321-WZ           | KKC-10430                       | KE-91033                        |
| 132        | 11.43           | 11.43          | 0.38           | 22.15            | 22.15           | 1.27                | 0.64                  | 0.30                  |                 |                 | A            | YES          | F         |                       | QC-132414-W Rev.1      | KKC-10444                       | KE-90163                        |
| 132        | 11.43           | 11.43          | 0.38           | 24.13            | 24.13           | 1.27                | 0.635                 | 0.30                  |                 |                 | C            | YES          | F         |                       | QC-132419-W            | KKC-10312                       | KE-91250                        |
| 132        | 14.73           | 14.73          | 0.38           | 24.13            | 24.13           | 1.27                | 0.635                 | 0.30                  |                 |                 | B            | YES          | F         |                       | QC-132431-W            | KKC-10899 Rev.1                 | KE-91321-P-2                    |
| 144        | 13.00           | 13.00          | 0.38           | 19.20            | 19.20           | 1.10                | 0.50                  | 0.20                  | 22.00           | 22.00           | B            | YES          | Z         |                       | QC-144362-WZ           | KKC-10312                       | KE-91175                        |
| 144        | 13.00           | 13.00          | 0.38           | 19.20            | 19.20           | 1.10                | 0.50                  | 0.20                  | 42.18           | 41.18           | B            | YES          | Z         | WITH TIE-BAR          | QC-144381-WZ           | KKC-10312                       | KE-91175                        |
| 144        | 12.00           | 12.00          | 0.38           | 19.20            | 19.20           | 1.10                | 0.50                  | 0.20                  | 42.18           | 41.18           | B            | YES          | Z         | WITH TIE-BAR          | QC-144398-WZ           | KKC-10312                       | KE-91175                        |
| 144        | 14.00           | 14.00          | 0.38           | 19.20            | 19.20           | 1.10                | 0.50                  | 0.20                  | 22.00           | 22.00           | B            | YES          | Z         |                       | QC-144528-WZ           | KKC-10312                       | KE-91175                        |
| 144        | 10.20           | 10.20          | 0.38           | 27.20            | 27.20           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-144375-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 10.41           | 10.41          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-144320-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 10.41           | 10.41          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-144321-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-144308-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | No.1 PIN WITH TIE-BAR | QC-144322-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-144310-WZ           | KKC-10430                       | KE-91033                        |
| 144        | 16.25           | 16.25          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  |                 |                 | B            | YES          | F         |                       | QC-144327-W            | KKC-10430                       | KE-91033                        |
| 144        | 10.41           | 10.41          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  |                 |                 | B            | YES          | F         |                       | QC-144343-W            | KKC-10430                       | KE-91033                        |

Notes (1) Die Attach Cavity Option: Bare Ceramic Surface or Gold Paste

(2) Leadframe Surface Finish Option: Aluminum Thin Film Deposition on Wire Bond Area or Electrolytic Gold Plating on All the Surface of Leadframes

(3) CERQUAD is a registered trademark of KYOCERA Corporation.



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R0165B

| LEAD COUNT | CAVITY Length E | CAVITY WIDTH D | CAVITY DEPTH F | CERAMIC LENGTH B | CERAMIC WIDTH A | CERAMIC THICKNESS C | EXTERNAL LEAD PITCH P | EXTERNAL LEAD WIDTH W | LEAD TIP TO TIP | LEAD TIP TO TIP | CORNER SHAPE | WINDOW FRAME | BEND FORM | REFERENCE             | PACKAGE DRAWING NUMBER | MATCHING GLASS SEAL CERAMIC LID | MATCHING EPOXY SEAL CERAMIC LID |
|------------|-----------------|----------------|----------------|------------------|-----------------|---------------------|-----------------------|-----------------------|-----------------|-----------------|--------------|--------------|-----------|-----------------------|------------------------|---------------------------------|---------------------------------|
| 144        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-144309-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 12.00           | 12.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | No.1 PIN WITH TIE-BAR | QC-160323-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-160305-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 13.00           | 13.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-160310-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-160321-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 12.00           | 12.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-160345-WZ           | KKC-10430                       | KE-91033                        |
| 160        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.65                  | 0.30                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-160351-WZ           | KKC-10430                       | KE-91033                        |
| 176        | 15.00           | 15.00          | 0.38           | 23.20            | 23.20           | 1.27                | 0.50                  | 0.20                  | 26.60           | 26.60           | B            | YES          | Z         |                       | QC-176307-WZ           | KKC-10456                       | KE-91403                        |
| 176        | 13.00           | 13.00          | 0.38           | 23.20            | 23.20           | 1.27                | 0.50                  | 0.20                  | 26.60           | 26.60           | B            | YES          | Z         |                       | QC-176316-WZ           | KKC-10456                       | KE-91403                        |
| 176        | 13.00           | 13.00          | 0.38           | 23.20            | 23.20           | 1.27                | 0.50                  | 0.20                  | 41.62           | 40.62           | B            | YES          | Z         | WITH TIE-BAR          | QC-176319-WZ           | KKC-10456                       | KE-91403                        |
| 176        | 12.00           | 12.00          | 0.38           | 23.20            | 23.20           | 1.27                | 0.50                  | 0.20                  | 41.87           | 40.87           | B            | YES          | Z         | WITH TIE-BAR          | QC-176334-WZ           | KKC-10456                       | KE-91403                        |
| 176        | 12.00           | 12.00          | 0.38           | 23.20            | 23.20           | 1.27                | 0.50                  | 0.20                  | 26.00           | 26.00           | B            | YES          | Z         |                       | QC-176335-WZ           | KKC-10456                       | KE-91403                        |
| 208        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.00           | 30.00           | B            | YES          | Z         |                       | QC-208314-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208347-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 14.00           | 14.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208349-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208350-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.00           | 30.00           | B            | YES          | Z         |                       | QC-208388-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 18.50           | 18.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208398-WZ           | KKC-10430                       | KE-91461                        |
| 208        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.60           | 30.60           | B            | YES          | Z         |                       | QC-2083103-WZ          | KKC-10430                       | KE-91033                        |
| 208        | 18.50           | 18.50          | 0.38           | 27.20            | 27.20           | 1.20                | 0.50                  | 0.20                  | 40.81           | 39.81           | B            | YES          | Z         | WITH TIE-BAR CAV DOWN | QC-208525-WZ           | KKC-10430                       | KE-91461                        |
| 208        | 12.00           | 12.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208527-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.60           | 30.60           | B            | YES          | Z         |                       | QC-208346-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 14.00           | 14.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.60           | 30.60           | B            | YES          | Z         |                       | QC-208366-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 15.00           | 15.00          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-208506-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.50                  | 0.20                  | 30.60           | 30.60           | B            | YES          | Z         |                       | QC-208526-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 14.00           | 14.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208309-WZ           | KKC-10430                       | KE-91033                        |
| 208        | 15.00           | 15.00          | 0.38           | 28.00            | 28.00           | 1.27                | 0.50                  | 0.20                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-208319-WZ           | KKC-10430                       | KE-91033                        |
| 240        | 15.50           | 15.50          | 0.38           | 31.20            | 31.20           | 1.40                | 0.50                  | 0.20                  | 34.60           | 34.60           | B            | YES          | Z         |                       | QC-240309-WZ           | KKC-10799                       | KE-91287                        |
| 240        | 15.50           | 15.50          | 0.38           | 31.20            | 31.20           | 1.40                | 0.50                  | 0.20                  | 50.00           | 49.00           | B            | YES          | Z         | WITH TIE-BAR          | QC-240326-WZ Rev.1     | KKC-10799                       | KE-91287                        |
| 240        | 17.00           | 17.00          | 0.38           | 31.20            | 31.20           | 1.40                | 0.50                  | 0.20                  | 34.60           | 34.60           | B            | YES          | Z         |                       | QC-240310-WZ           | KKC-10799                       | KE-91287                        |
| 240        | 17.00           | 17.00          | 0.38           | 31.20            | 31.20           | 1.40                | 0.50                  | 0.20                  | 50.00           | 49.00           | B            | YES          | Z         | WITH TIE-BAR          | QC-240332-WZ           | KKC-10799                       | KE-91287                        |
| 256        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.40                  | 0.15                  | 41.75           | 40.75           | B            | YES          | Z         | WITH TIE-BAR          | QC-256319-WZ           | KKC-10430                       | KE-91033                        |
| 256        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.40                  | 0.15                  | 30.60           | 30.60           | B            | YES          | Z         |                       | QC-256329-WZ           | KKC-10430                       | KE-91033                        |
| 256        | 16.50           | 16.50          | 0.38           | 27.20            | 27.20           | 1.27                | 0.40                  | 0.15                  | 32.00           | 32.00           | B            | YES          | Z         |                       | QC-256315-WZ           | KKC-10430                       | KE-91033                        |
| 296        | 20.00           | 20.00          | 0.38           | 31.20            | 31.20           | 1.40                | 0.40                  | 0.18                  | 50.00           | 49.00           | B            | YES          | Z         | WITH TIE-BAR          | QC-296306-WZ           | KKC-10799                       | KE-91287                        |
| 304        | 20.00           | 20.00          | 0.38           | 39.20            | 39.20           | 1.35                | 0.50                  | 0.20                  | 42.60           | 42.60           | B            | YES          | Z         |                       | QC-304304-WZ           | KKC-11160                       | KE-91867                        |
| 304        | 20.00           | 20.00          | 0.38           | 39.20            | 39.20           | 1.35                | 0.50                  | 0.20                  | 56.09           | 55.09           | B            | YES          | Z         | WITH TIE-BAR          | QC-304333-WZ           | KKC-11160                       | KE-91867                        |

Notes (1) Die Attach Cavity Option: Bare Ceramic Surface or Gold Paste

(2) Leadframe Surface Finish Option: Aluminum Thin Film Deposition on Wire Bond Area or Electrolytic Gold Plating on All the Surface of Leadframes

(3) CERQUAD is a registered trademark of KYOCERA Corporation.

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R0165B

| LEAD COUNT | CAVITY Length E | CAVITY WIDTH D | CAVITY DEPTH F | CERAMIC LENGTH B | CERAMIC WIDTH A | CERAMIC THICKNESS C | EXTERNAL LEAD PITCH P | EXTERNAL LEAD WIDTH W | LEAD TIP TO TIP | LEAD TIP TO TIP | CORNER SHAPE | WINDOW FRAME | BEND FORM | REFERENCE | PACKAGE DRAWING NUMBER | MATCHING GLASS SEAL CERAMIC LID | MATCHING EPOXY SEAL CERAMIC LID |
|------------|-----------------|----------------|----------------|------------------|-----------------|---------------------|-----------------------|-----------------------|-----------------|-----------------|--------------|--------------|-----------|-----------|------------------------|---------------------------------|---------------------------------|
|------------|-----------------|----------------|----------------|------------------|-----------------|---------------------|-----------------------|-----------------------|-----------------|-----------------|--------------|--------------|-----------|-----------|------------------------|---------------------------------|---------------------------------|

