

# MIL-C-11015 & 39014 Multilayer Ceramic Capacitors

## CK and CKR Military Grade Capacitors



MIL-C-11015 & 39014 - CK and CKR - military grade capacitors are available as radial and axial leaded capacitors with the option of hot solder dipped leads on the CKRs.

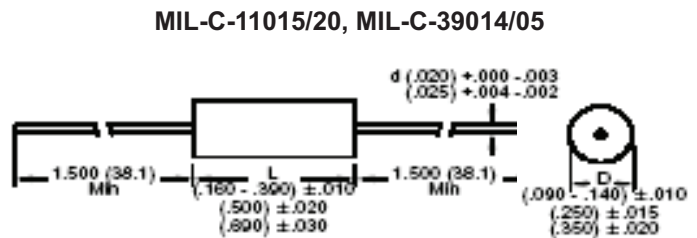
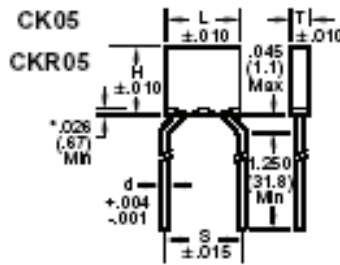
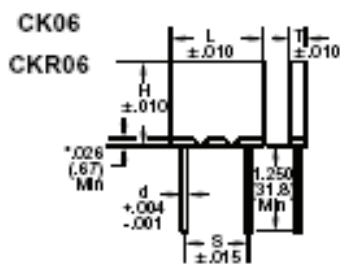
### Highlights

- Available on tape and reel
- Molded case construction
- CKR available with stand-off
- Hot solder dip leads on Type CKR

### Specifications

**Capacitance Range:** 10 pF to 3.3  $\mu$ F  
**Voltage Range:** 50, 100, 200 Vdc  
**Temperature Coefficient:** X7R (Mil BX or BR)

### Outline Drawings



#### Radial

#### Axial

| Type  | Inches |      |      |      |      | mm  |     |     |     |     |
|-------|--------|------|------|------|------|-----|-----|-----|-----|-----|
|       | L      | H    | T    | S    | d    | L   | H   | T   | S   | d   |
| CK05  | .190   | .190 | .090 | .200 | .025 | 4.8 | 4.8 | 2.3 | 5.1 | .64 |
| CKR05 | .190   | .190 | .090 | .200 | .025 | 4.8 | 4.8 | 2.3 | 5.1 | .64 |
| CK06  | .290   | .290 | .090 | .200 | .025 | 7.4 | 7.4 | 2.3 | 5.1 | .64 |
| CKR06 | .290   | .290 | .090 | .200 | .025 | 7.4 | 7.4 | 2.3 | 5.1 | .64 |

| Type  | Inches |      |      | mm  |      |     |
|-------|--------|------|------|-----|------|-----|
|       | D      | L    | d    | D   | L    | d   |
| CK12  | .090   | .160 | .020 | 2.3 | 4.0  | .51 |
| CKR11 | .090   | .160 | .020 | 2.3 | 4.0  | .51 |
| CK13  | .090   | .250 | .020 | 2.3 | 6.4  | .51 |
| CKR12 | .090   | .250 | .020 | 2.3 | 6.4  | .51 |
| CK14  | .140   | .390 | .025 | 3.6 | 9.9  | .64 |
| CKR14 | .140   | .390 | .025 | 3.6 | 9.9  | .64 |
| CK15  | .250   | .500 | .025 | 6.4 | 12.7 | .64 |
| CKR15 | .250   | .500 | .025 | 6.4 | 12.7 | .64 |
| CK16  | .350   | .690 | .025 | 8.9 | 17.5 | .64 |
| CKR16 | .350   | .690 | .025 | 8.9 | 17.5 | .64 |

#### TO ORDER MIL-C-11015 PARTS:

Order by CK part number shown in Ratings Table  
Example: CK05BX104M

#### TO ORDER MIL-C-39014 PARTS:

Indicate the prefix M39014/-- followed by the applicable MIL dash number. Example: For M39014/01-1594 (CKR05BX104MS); order M39014/011594

# MIL-C-11015 & 39014 Multilayer Ceramic Capacitors

## Ratings

| Cap                                      | Tol. | MIL-C-11015/18 | MIL-C-39014/01 | 39014/01 Failure Rate Levels |      |      |      | Cap                                      | Tol. | MIL-C-11015/18 | MIL-C-39014/01 | 39014/01 Failure Rate Levels |      |      |      |
|------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
|                                          | %    |                | References     | M                            | P    | R    | S    |                                          | %    |                | References     | M                            | P    | R    | S    |
| 50 Vdc - Radial Leaded - CK05/M39014/01  |      |                |                |                              |      |      |      | 200 Vdc - Radial Leaded - CK05/M39014/01 |      |                |                |                              |      |      |      |
| .012 uF                                  | 10   | CK05BX123K     | CKR05BX123K*   | 1457                         | 1497 | 1537 | 1577 | 10 pF                                    | 10   | CK05BX100K     | CKR05BX100K*   | 1201                         | 1241 | 1281 | 1321 |
| .015 uF                                  | 10   | CK05BX153K     | CKR05BX153K*   | 1458                         | 1498 | 1538 | 1578 | 10 pF                                    | 20   | CK05BX100M     | CKR05BX100M*   | 1202                         | 1242 | 1282 | 1322 |
| .015 uF                                  | 20   | CK05BX153M     | CKR05BX153M*   | 1459                         | 1499 | 1539 | 1579 | 12 pF                                    | 10   | CK05BX120K     | CKR05BX120K*   | 1203                         | 1243 | 1283 | 1323 |
| .018 uF                                  | 10   | CK05BX183K     | CKR05BX183K*   | 1460                         | 1500 | 1540 | 1580 | 15 pF                                    | 10   | CK05BX150K     | CKR05BX150K*   | 1204                         | 1244 | 1284 | 1324 |
| .022 uF                                  | 10   | CK05BX223K     | CKR05BX223K*   | 1461                         | 1501 | 1541 | 1581 | 15 pF                                    | 20   | CK05BX150M     | CKR05BX150M*   | 1205                         | 1245 | 1285 | 1325 |
| .022 uF                                  | 20   | CK05BX223M     | CKR05BX223M*   | 1462                         | 1502 | 1542 | 1582 | 18 pF                                    | 10   | CK05BX180K     | CKR05BX180K*   | 1206                         | 1246 | 1286 | 1326 |
| .027 uF                                  | 10   | CK05BX273K     | CKR05BX273K*   | 1463                         | 1503 | 1543 | 1583 | 22 pF                                    | 10   | CK05BX220K     | CKR05BX220K*   | 1207                         | 1247 | 1287 | 1327 |
| .033 uF                                  | 10   | CK05BX333K     | CKR05BX333K*   | 1464                         | 1504 | 1544 | 1584 | 22 pF                                    | 20   | CK05BX220M     | CKR05BX220M*   | 1208                         | 1248 | 1288 | 1328 |
| .033 uF                                  | 20   | CK05BX333M     | CKR05BX333M*   | 1465                         | 1505 | 1545 | 1585 | 27 pF                                    | 10   | CK05BX270K     | CKR05BX270K*   | 1209                         | 1249 | 1289 | 1329 |
| .039 uF                                  | 10   | CK05BX393K     | CKR05BX393K*   | 1466                         | 1506 | 1546 | 1586 | 33 pF                                    | 10   | CK05BX330K     | CKR05BX330K*   | 1210                         | 1250 | 1290 | 1330 |
| .047 uF                                  | 10   | CK05BX473K     | CKR05BX473K*   | 1467                         | 1507 | 1547 | 1587 | 33 pF                                    | 20   | CK05BX330M     | CKR05BX330M*   | 1211                         | 1251 | 1291 | 1331 |
| .047 uF                                  | 20   | CK05BX473M     | CKR05BX473M*   | 1468                         | 1508 | 1548 | 1588 | 39 pF                                    | 10   | CK05BX390K     | CKR05BX390K*   | 1212                         | 1252 | 1292 | 1332 |
| .056 uF                                  | 10   | CK05BX563K     | CKR05BX563K*   | 1469                         | 1509 | 1549 | 1589 | 47 pF                                    | 10   | CK05BX470K     | CKR05BX470K*   | 1213                         | 1253 | 1293 | 1333 |
| .068 uF                                  | 10   | CK05BX683K     | CKR05BX683K*   | 1470                         | 1510 | 1550 | 1590 | 47 pF                                    | 20   | CK05BX470M     | CKR05BX470M*   | 1214                         | 1254 | 1294 | 1334 |
| .068 uF                                  | 20   | CK05BX683M     | CKR05BX683M*   | 1471                         | 1511 | 1551 | 1591 | 56 pF                                    | 10   | CK05BX560K     | CKR05BX560K*   | 1215                         | 1255 | 1295 | 1335 |
| .082 uF                                  | 10   | CK05BX823K     | CKR05BX823K*   | 1472                         | 1512 | 1552 | 1592 | 68 pF                                    | 10   | CK05BX680K     | CKR05BX680K*   | 1216                         | 1256 | 1296 | 1336 |
| .10 uF                                   | 10   | CK05BX104K     | CKR05BX104K*   | 1473                         | 1513 | 1553 | 1593 | 68 pF                                    | 20   | CK05BX680M     | CKR05BX680M*   | 1217                         | 1257 | 1297 | 1337 |
| .10 uF                                   | 20   | CK05BX104M     | CKR05BX104M*   | 1474                         | 1514 | 1554 | 1594 | 82 pF                                    | 10   | CK05BX820K     | CKR05BX820K*   | 1218                         | 1258 | 1298 | 1338 |
| 100 Vdc - Radial Leaded - CK05/M39014/01 |      |                |                |                              |      |      |      | 100 pF                                   | 10   | CK05BX101K     | CKR05BX101K*   | 1219                         | 1259 | 1299 | 1339 |
| 1200 pF                                  | 10   | CK05BX122K     | CKR05BX122K*   | 1239                         | 1279 | 1319 | 1359 | 100 pF                                   | 20   | CK05BX101M     | CKR05BX101M*   | 1220                         | 1260 | 1300 | 1340 |
| 1500 pF                                  | 10   | CK05BX152K     | CKR05BX152K*   | 1240                         | 1280 | 1320 | 1360 | 120 pF                                   | 10   | CK05BX121K     | CKR05BX121K*   | 1221                         | 1261 | 1301 | 1341 |
| 1500 pF                                  | 20   | CK05BX152M     | CKR05BX152M*   | 1441                         | 1481 | 1521 | 1561 | 150 pF                                   | 10   | CK05BX151K     | CKR05BX151K*   | 1222                         | 1262 | 1302 | 1342 |
| 1800 pF                                  | 10   | CK05BX182K     | CKR05BX182K*   | 1442                         | 1482 | 1522 | 1562 | 150 pF                                   | 20   | CK05BX151M     | CKR05BX151M*   | 1223                         | 1263 | 1303 | 1343 |
| 2200 pF                                  | 10   | CK05BX222K     | CKR05BX222K*   | 1443                         | 1483 | 1523 | 1563 | 180 pF                                   | 10   | CK05BX181K     | CKR05BX181K*   | 1224                         | 1264 | 1304 | 1344 |
| 2200 pF                                  | 20   | CK05BX222M     | CKR05BX222M*   | 1444                         | 1484 | 1524 | 1564 | 220 pF                                   | 10   | CK05BX221K     | CKR05BX221K*   | 1225                         | 1265 | 1305 | 1345 |
| 2700 pF                                  | 10   | CK05BX272K     | CKR05BX272K*   | 1445                         | 1485 | 1525 | 1565 | 220 pF                                   | 20   | CK05BX221M     | CKR05BX221M*   | 1226                         | 1266 | 1306 | 1346 |
| 3300 pF                                  | 10   | CK05BX332K     | CKR05BX332K*   | 1446                         | 1486 | 1526 | 1566 | 270 pF                                   | 10   | CK05BX271K     | CKR05BX271K*   | 1227                         | 1267 | 1307 | 1347 |
| 3300 pF                                  | 20   | CK05BX332M     | CKR05BX332M*   | 1447                         | 1487 | 1527 | 1567 | 330 pF                                   | 10   | CK05BX331K     | CKR05BX331K*   | 1228                         | 1268 | 1308 | 1348 |
| 3900 pF                                  | 10   | CK05BX392K     | CKR05BX392K*   | 1448                         | 1488 | 1528 | 1568 | 330 pF                                   | 20   | CK05BX331M     | CKR05BX331M*   | 1229                         | 1269 | 1309 | 1349 |
| 4700 pF                                  | 10   | CK05BX472K     | CKR05BX472K*   | 1449                         | 1489 | 1529 | 1569 | 390 pF                                   | 10   | CK05BX391K     | CKR05BX391K*   | 1230                         | 1270 | 1310 | 1350 |
| 4700 pF                                  | 20   | CK05BX472M     | CKR05BX472M*   | 1450                         | 1490 | 1530 | 1570 | 470 pF                                   | 10   | CK05BX471K     | CKR05BX471K*   | 1231                         | 1271 | 1311 | 1351 |
| 5600 pF                                  | 10   | CK05BX562K     | CKR05BX562K*   | 1451                         | 1491 | 1531 | 1571 | 470 pF                                   | 20   | CK05BX471M     | CKR05BX471M*   | 1232                         | 1272 | 1312 | 1352 |
| 6800 pF                                  | 10   | CK05BX682K     | CKR05BX682K*   | 1452                         | 1492 | 1532 | 1572 | 560 pF                                   | 10   | CK05BX561K     | CKR05BX561K*   | 1233                         | 1273 | 1313 | 1353 |
| 6800 pF                                  | 20   | CK05BX682M     | CKR05BX682M*   | 1453                         | 1493 | 1533 | 1573 | 680 pF                                   | 10   | CK05BX681K     | CKR05BX681K*   | 1234                         | 1274 | 1314 | 1354 |
| 8200 pF                                  | 10   | CK05BX822K     | CKR05BX822K*   | 1454                         | 1494 | 1534 | 1574 | 680 pF                                   | 20   | CK05BX681M     | CKR05BX681M*   | 1235                         | 1275 | 1315 | 1355 |
| .01 uF                                   | 10   | CK05BX103K     | CKR05BX103K*   | 1455                         | 1495 | 1535 | 1575 | 820 pF                                   | 10   | CK05BX821K     | CKR05BX821K*   | 1236                         | 1276 | 1316 | 1356 |
| .01 uF                                   | 20   | CK05BX103M     | CKR05BX103M*   | 1456                         | 1496 | 1536 | 1576 | 1000 pF                                  | 10   | CK05BX102K     | CKR05BX102K*   | 1237                         | 1277 | 1317 | 1357 |
|                                          |      |                |                |                              |      |      |      | 1000 pF                                  | 20   | CK05BX102M     | CKR05BX102M*   | 1238                         | 1278 | 1318 | 1358 |

Insert proper letter symbol for Failure Rate Designator

\*Insert proper letter symbol for Failure Rate Designator

M = 1% / 1000 Hours, P = 0.1% / 1000 Hours

R = 0.01% / 1000 Hours, S = 0.001% / 1000 Hours

Add 'V' at end of failure rate designator if stand-off design is required, (CKR only)

Add 'TR' to end of part number for Tape & Reel

Leads will be trimmed to .625' length

CK05 - 2,000 per reel

CKR05 - 1,700 per reel

(Available in full reels only)

# MIL-C-11015 & 39014 Multilayer Ceramic Capacitors

## Ratings

| Cap                                             | Tol. |                | MIL-C-39014/02 | 39014/02 Failure Rate Levels |      |      |      |
|-------------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                             | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| <b>50 Vdc - Radial Leaded - CK06/M39014/02</b>  |      |                |                |                              |      |      |      |
| .12 uF                                          | 10   | CK06BX124K     | CKR06BX124K*   | 1233                         | 1273 | 1313 | 1353 |
| .15 uF                                          | 10   | CK06BX154K     | CKR06BX154K*   | 1234                         | 1274 | 1314 | 1354 |
| .15 uF                                          | 20   | CK06BX154M     |                |                              |      |      |      |
| .18 uF                                          | 10   | CK06BX184K     | CKR06BX184K*   | 1235                         | 1275 | 1315 | 1355 |
| .22 uF                                          | 10   | CK06BX224K     | CKR06BX224K*   | 1236                         | 1276 | 1316 | 1356 |
| .22 uF                                          | 20   | CK06BX224M     |                |                              |      |      |      |
| .27 uF                                          | 10   | CK06BX274K     | CKR06BX274K*   | 1237                         | 1277 | 1317 | 1357 |
| .33 uF                                          | 10   | CK06BX334K     | CKR06BX334K*   | 1238                         | 1278 | 1318 | 1358 |
| .33 uF                                          | 20   | CK06BX334M     |                |                              |      |      |      |
| .39 uF                                          | 10   | CK06BX394K     | CKR06BX394K*   | 1239                         | 1279 | 1319 | 1359 |
| .47 uF                                          | 10   | CK06BX474K     | CKR06BX474K*   | 1240                         | 1280 | 1320 | 1360 |
| .47 uF                                          | 20   | CK06BX474M     |                |                              |      |      |      |
| .56 uF                                          | 10   | CK06BX564K     | CKR06BX564K*   | 1404                         | 1408 | 1412 | 1416 |
| .68 uF                                          | 10   | CK06BX684K     | CKR06BX684K*   | 1405                         | 1409 | 1413 | 1417 |
| .68 uF                                          | 20   | CK06BX684M     |                |                              |      |      |      |
| .82 uF                                          | 10   | CK06BX824K     | CKR06BX824K*   | 1406                         | 1410 | 1414 | 1418 |
| 1.0 uF                                          | 10   | CK06BX105K     | CKR06BX105K*   | 1407                         | 1411 | 1415 | 1419 |
| 1.0 uF                                          | 20   | CK06BX105M     |                |                              |      |      |      |
| <b>100 Vdc - Radial Leaded - CK06/M39014/02</b> |      |                |                |                              |      |      |      |
| .012 uF                                         | 10   | CK06BX123K     | CKR06BX123K*   | 1231                         | 1271 | 1311 | 1351 |
| .015 uF                                         | 10   | CK06BX153K     | CKR06BX153K*   | 1220                         | 1260 | 1300 | 1340 |
| .015 uF                                         | 20   | CK06BX153M     |                |                              |      |      |      |
| .018 uF                                         | 10   | CK06BX183K     | CKR06BX183K*   | 1221                         | 1261 | 1301 | 1341 |
| .022 uF                                         | 10   | CK06BX223K     | CKR06BX223K*   | 1222                         | 1262 | 1302 | 1342 |
| .022 uF                                         | 20   | CK06BX223M     |                |                              |      |      |      |
| .027 uF                                         | 10   | CK06BX273K     | CKR06BX273K*   | 1232                         | 1272 | 1312 | 1352 |
| .033 uF                                         | 10   | CK06BX333K     | CKR06BX333K*   | 1223                         | 1263 | 1303 | 1343 |
| .033 uF                                         | 20   | CK06BX333M     |                |                              |      |      |      |
| .039 uF                                         | 10   | CK06BX393K     | CKR06BX393K*   | 1224                         | 1264 | 1304 | 1344 |

\*Insert proper letter symbol for Failure Rate Designator

M = 1% / 1000 Hours, P = 0.1% / 1000 Hours

R = 0.01% / 1000 Hours, S = 0.001% / 1000 Hours

Add 'V' at end of failure rate designator if stand-off design is required, (CKR only)

| Cap                                             | Tol. |                | MIL-C-39014/02 | 39014/02 Failure Rate Levels |      |      |      |
|-------------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                             | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| <b>100 Vdc - Radial Leaded - CK05/M39014/02</b> |      |                |                |                              |      |      |      |
| .047 uF                                         | 10   | CK06BX473K     | CKR06BX473K*   | 1225                         | 1265 | 1305 | 1345 |
| .047 uF                                         | 20   | CK06BX473M     |                |                              |      |      |      |
| .056 uF                                         | 10   | CK06BX563K     | CKR06BX563K*   | 1226                         | 1266 | 1306 | 1346 |
| .068 uF                                         | 10   | CK06BX683K     | CKR06BX683K*   | 1227                         | 1267 | 1307 | 1347 |
| .068 uF                                         | 20   | CK06BX683M     |                |                              |      |      |      |
| .082 uF                                         | 10   | CK06BX823K     | CKR06BX823K*   | 1229                         | 1269 | 1309 | 1349 |
| .10 uF                                          | 10   | CK06BX104K     | CKR06BX104K*   | 1230                         | 1270 | 1310 | 1350 |
| .10 uF                                          | 20   | CK06BX104M     |                |                              |      |      |      |
| <b>200 Vdc - Radial Leaded - CK06/M39014/02</b> |      |                |                |                              |      |      |      |
| 1200 pF                                         | 10   | CK06BX122K     | CKR06BX122K*   | 1201                         | 1241 | 1281 | 1321 |
| 1500 pF                                         | 10   | CK06BX152K     | CKR06BX152K*   | 1202                         | 1242 | 1282 | 1322 |
| 1500 pF                                         | 20   | CK06BX152M     | CKR06BX152M*   | 1203                         | 1243 | 1283 | 1323 |
| 1800 pF                                         | 10   | CK06BX182K     | CKR06BX182K*   | 1204                         | 1244 | 1284 | 1324 |
| 2200 pF                                         | 10   | CK06BX222K     | CKR06BX222K*   | 1206                         | 1246 | 1286 | 1326 |
| 2200 pF                                         | 20   | CK06BX222M     | CKR06BX222M*   | 1207                         | 1247 | 1287 | 1327 |
| 2700 pF                                         | 10   | CK06BX272K     | CKR06BX272K*   | 1208                         | 1248 | 1288 | 1328 |
| 3300 pF                                         | 10   | CK06BX332K     | CKR06BX332K*   | 1209                         | 1249 | 1289 | 1329 |
| 3300 pF                                         | 20   | CK06BX332M     | CKR06BX332M*   | 1210                         | 1250 | 1290 | 1330 |
| 3900 pF                                         | 10   | CK06BX392K     | CKR06BX392K*   | 1211                         | 1251 | 1291 | 1331 |
| 4700 pF                                         | 10   | CK06BX472K     | CKR06BX472K*   | 1212                         | 1252 | 1292 | 1332 |
| 4700 pF                                         | 20   | CK06BX472M     | CKR06BX472M*   | 1213                         | 1253 | 1293 | 1333 |
| 5600 pF                                         | 10   | CK06BX562K     | CKR06BX562K*   | 1214                         | 1254 | 1294 | 1334 |
| 6800 pF                                         | 10   | CK06BX682K     | CKR06BX682K*   | 1215                         | 1255 | 1295 | 1335 |
| 6800 pF                                         | 20   | CK06BX682M     | CKR06BX682M*   | 1216                         | 1256 | 1296 | 1336 |
| 8200 pF                                         | 10   | CK06BX822K     | CKR06BX822K*   | 1217                         | 1257 | 1297 | 1337 |
| .01 uF                                          | 10   | CK06BX103K     | CKR06BX103K*   | 1218                         | 1258 | 1298 | 1338 |
| .01 uF                                          | 20   | CK06BX103M     | CKR06BX103M*   | 1219                         | 1259 | 1299 | 1339 |

Add 'TR' to end of part number for Tape & Reel

Leads will be trimmed to .625" length

CK06 & CKR06 1,500 per reel

(Available in full reels only)

| Cap                                           | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                           | %    | MIL-C-11015/20 | References     | M                            | P    | R    | S    |
| <b>50 Vdc - Axial Leaded - CK12/M39014/05</b> |      |                |                |                              |      |      |      |
| 5600 pF                                       | 10   | CK12BX562K     | CKR11BX562K*   | 2651                         | 2851 | 2051 | 2251 |
| 6800 pF                                       | 10   | CK12BX682K     | CKR11BX682K*   | 2652                         | 2852 | 2052 | 2252 |
| 6800 pF                                       | 20   | CK12BX682M     | CKR11BX682M*   | 2653                         | 2853 | 2053 | 2253 |
| 8200 pF                                       | 10   | CK12BX822K     | CKR11BX822K*   | 2654                         | 2854 | 2054 | 2254 |
| 0.01 uF                                       | 10   | CK12BX103K     | CKR11BX103K*   | 2655                         | 2855 | 2055 | 2255 |
| 0.01 uF                                       | 20   | CK12BX103M     | CKR11BX103M*   | 2656                         | 2856 | 2056 | 2256 |

| Cap                                            | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|------------------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                            | %    | MIL-C-11015/20 | References     | M                            | P    | R    | S    |
| <b>100 Vdc - Axial Leaded - CK12/M39014/05</b> |      |                |                |                              |      |      |      |
| 10 pF                                          | 10   | CK12BX100K     | CKR11BX100K*   | 2601                         | 2801 | 2001 | 2201 |
| 10 pF                                          | 20   | CK12BX100M     | CKR11BX100M*   | 2602                         | 2802 | 2002 | 2202 |
| 12 pF                                          | 10   | CK12BX120K     | CKR11BX120K*   | 2603                         | 2803 | 2003 | 2203 |
| 15 pF                                          | 10   | CK12BX150K     | CKR11BX150K*   | 2604                         | 2804 | 2004 | 2204 |
| 15 pF                                          | 20   | CK12BX150M     | CKR11BX150M*   | 2605                         | 2805 | 2005 | 2205 |
| 18 pF                                          | 10   | CK12BX180K     | CKR11BX180K*   | 2606                         | 2806 | 2006 | 2206 |

# MIL-C-11015 & 39014 Multilayer Ceramic Capacitors

## Ratings

| Cap                                     | Tol. | MIL-C-11015/20 | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
|                                         | %    |                | References     | M                            | P    | R    | S    |
| 100 Vdc - Axial Leaded - CK12/M39014/05 |      |                |                |                              |      |      |      |
| 22 pF                                   | 10   | CK12BX220K     | CKR11BX220K*   | 2607                         | 2807 | 2007 | 2207 |
| 22 pF                                   | 20   | CK12BX220M     | CKR11BX220M*   | 2608                         | 2808 | 2008 | 2208 |
| 27 pF                                   | 10   | CK12BX270K     | CKR11BX270K*   | 2609                         | 2809 | 2009 | 2209 |
| 33 pF                                   | 10   | CK12BX330K     | CKR11BX330K*   | 2610                         | 2810 | 2010 | 2210 |
| 33 pF                                   | 20   | CK12BX330M     | CKR11BX330M*   | 2611                         | 2811 | 2011 | 2211 |
| 39 pF                                   | 10   | CK12BX390K     | CKR11BX390K*   | 2612                         | 2812 | 2012 | 2212 |
| 47 pF                                   | 10   | CK12BX470K     | CKR11BX470K*   | 2613                         | 2813 | 2013 | 2213 |
| 47 pF                                   | 20   | CK12BX470M     | CKR11BX470M*   | 2614                         | 2814 | 2014 | 2214 |
| 56 pF                                   | 10   | CK12BX560K     | CKR11BX560K*   | 2615                         | 2815 | 2015 | 2215 |
| 68 pF                                   | 10   | CK12BX680K     | CKR11BX680K*   | 2616                         | 2816 | 2016 | 2216 |
| 68 pF                                   | 20   | CK12BX680M     | CKR11BX680M*   | 2617                         | 2817 | 2017 | 2217 |
| 82 pF                                   | 10   | CK12BX820K     | CKR11BX820K*   | 2618                         | 2818 | 2018 | 2218 |
| 100 pF                                  | 10   | CK12BX101K     | CKR11BX101K*   | 2619                         | 2819 | 2019 | 2219 |
| 100 pF                                  | 20   | CK12BX101M     | CKR11BX101M*   | 2620                         | 2820 | 2020 | 2220 |
| 120 pF                                  | 10   | CK12BX121K     | CKR11BX121K*   | 2621                         | 2821 | 2021 | 2221 |
| 150 pF                                  | 10   | CK12BX151K     | CKR11BX151K*   | 2622                         | 2822 | 2022 | 2222 |
| 150 pF                                  | 20   | CK12BX151M     | CKR11BX151M*   | 2623                         | 2823 | 2023 | 2223 |
| 180 pF                                  | 10   | CK12BX181K     | CKR11BX181K*   | 2624                         | 2824 | 2024 | 2224 |
| 220 pF                                  | 10   | CK12BX221K     | CKR11BX221K*   | 2625                         | 2825 | 2025 | 2225 |
| 220 pF                                  | 20   | CK12BX221M     | CKR11BX221M*   | 2626                         | 2826 | 2026 | 2226 |
| 270 pF                                  | 10   | CK12BX271K     | CKR11BX271K*   | 2627                         | 2827 | 2027 | 2227 |
| 330 pF                                  | 10   | CK12BX331K     | CKR11BX331K*   | 2628                         | 2828 | 2028 | 2228 |

\*Insert proper letter symbol for Failure Rate Designator

M = 1% / 1000 Hours, P = 0.1% / 1000 Hours

R = 0.01% / 1000 Hours, S = 0.001% / 1000 Hours

|                                         | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/20 | References     | M                            | P    | R    | S    |
| 100 Vdc - Axial Leaded - CK12/M39014/05 |      |                |                |                              |      |      |      |
| 330 pF                                  | 20   | CK12BX331M     | CKR11BX331M*   | 2629                         | 2829 | 2029 | 2229 |
| 390 pF                                  | 10   | CK12BX391K     | CKR11BX391K*   | 2630                         | 2830 | 2030 | 2230 |
| 470 pF                                  | 10   | CK12BX471K     | CKR11BX471K*   | 2631                         | 2831 | 2031 | 2231 |
| 470 pF                                  | 20   | CK12BX471M     | CKR11BX471M*   | 2632                         | 2832 | 2032 | 2232 |
| 560 pF                                  | 10   | CK12BX561K     | CKR11BX561K*   | 2633                         | 2833 | 2033 | 2233 |
| 680 pF                                  | 10   | CK12BX681K     | CKR11BX681K*   | 2634                         | 2834 | 2034 | 2234 |
| 680 pF                                  | 20   | CK12BX681M     | CKR11BX681M*   | 2635                         | 2835 | 2035 | 2235 |
| 820 pF                                  | 10   | CK12BX821K     | CKR11BX821K*   | 2636                         | 2836 | 2036 | 2236 |
| 1000 pF                                 | 10   | CK12BX102K     | CKR11BX102K*   | 2637                         | 2837 | 2037 | 2237 |
| 1000 pF                                 | 20   | CK12BX102M     | CKR11BX102M*   | 2638                         | 2838 | 2038 | 2238 |
| 1200 pF                                 | 10   | CK12BX122K     | CKR11BX122K*   | 2639                         | 2839 | 2039 | 2239 |
| 1500 pF                                 | 10   | CK12BX152K     | CKR11BX152K*   | 2640                         | 2840 | 2040 | 2240 |
| 1500 pF                                 | 20   | CK12BX152M     | CKR11BX152M*   | 2641                         | 2841 | 2041 | 2241 |
| 1800 pF                                 | 10   | CK12BX182K     | CKR11BX182K*   | 2642                         | 2842 | 2042 | 2242 |
| 2200 pF                                 | 10   | CK12BX222K     | CKR11BX222K*   | 2643                         | 2843 | 2043 | 2243 |
| 2200 pF                                 | 20   | CK12BX222M     | CKR11BX222M*   | 2644                         | 2844 | 2044 | 2244 |
| 2700 pF                                 | 10   | CK12BX272K     | CKR11BX272K*   | 2645                         | 2845 | 2045 | 2245 |
| 3300 pF                                 | 10   | CK12BX332K     | CKR11BX332K*   | 2646                         | 2846 | 2046 | 2246 |
| 3300 pF                                 | 20   | CK12BX332M     | CKR11BX332M*   | 2647                         | 2847 | 2047 | 2247 |
| 3900 pF                                 | 10   | CK12BX392K     | CKR11BX392K*   | 2648                         | 2848 | 2048 | 2248 |
| 4700 pF                                 | 10   | CK12BX472K     | CKR11BX472K*   | 2649                         | 2849 | 2049 | 2249 |
| 4700 pF                                 | 20   | CK12BX472M     | CKR11BX472M*   | 2650                         | 1850 | 2050 | 2250 |

Add 'TR' to end of part number for Tape & Reel

CK12 & CKR11 5,000 per reel

(Available in full reels only)

| Cap                                    | Tol. | MIL-C-11015/19 | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
|                                        | %    |                | References     | M                            | P    | R    | S    |
| 50 Vdc - Axial Leaded - CK13/M39014/05 |      |                |                |                              |      |      |      |
| .012 uF                                | 10   | CK13BX123K     | CKR12BX123K*   | 2663                         | 2863 | 2063 | 2263 |
| .015 uF                                | 10   | CK13BX153K     | CKR12BX153K*   | 2664                         | 2864 | 2064 | 2264 |
| .015 uF                                | 20   | CK13BX153M     | CKR12BX153M*   | 2665                         | 2865 | 2065 | 2265 |
| .018 uF                                | 10   | CK13BX183K     | CKR12BX183K*   | 2666                         | 2866 | 2066 | 2266 |
| .022 uF                                | 10   | CK13BX223K     | CKR12BX223K*   | 2667                         | 2867 | 2067 | 2267 |
| .022 uF                                | 20   | CK13BX223M     | CKR12BX223M*   | 2668                         | 2868 | 2068 | 2268 |
| .027 uF                                | 10   | CK13BR273K     | CKR12BX273K*   | 2669                         | 2869 | 2069 | 2269 |
| .033 uF                                | 10   | CK13BR333K     | CKR12BX333K*   | 2670                         | 2870 | 2070 | 2270 |
| .033 uF                                | 20   | CK13BR333M     | CKR12BX333M*   | 2671                         | 2871 | 2071 | 2271 |

| Cap                                     | Tol. | MIL-C-11015/19 | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
|                                         | %    |                | References     | M                            | P    | R    | S    |
| 50 Vdc - Axial Leaded - CK13/M39014/05  |      |                |                |                              |      |      |      |
| .039 uF                                 | 10   | CK13BR393K     | CKR12BX393K*   | 2672                         | 2872 | 2072 | 2272 |
| .047 uF                                 | 10   | CK13BR473K     | CKR12BX473K*   | 2673                         | 2873 | 2073 | 2273 |
| .047 uF                                 | 20   | CK13BR473M     | CKR12BX473M*   | 2674                         | 2874 | 2074 | 2274 |
| 100 Vdc - Axial Leaded - CK13/M39014/05 |      |                |                |                              |      |      |      |
| 5600 pF                                 | 10   | CK13BX562K     | CKR12BX562K*   | 2657                         | 2857 | 2057 | 2257 |
| 6800 pF                                 | 10   | CK13BX682K     | CKR12BX682K*   | 2658                         | 2858 | 2058 | 2258 |
| 6800 pF                                 | 20   | CK13BX682M     | CKR12BX682M*   | 2659                         | 2859 | 2059 | 2259 |
| 8200 pF                                 | 10   | CK13BX822K     | CKR12BX822K*   | 2660                         | 2860 | 2060 | 2260 |
| .01 uF                                  | 10   | CK13BX103K     | CKR12BX103K*   | 2661                         | 2861 | 2061 | 2261 |
| .01 uF                                  | 20   | CK13BX103M     | CKR12BX103M*   | 2662                         | 2862 | 2062 | 2262 |

# MIL-C-11015 & 39014 Multilayer Ceramic Capacitors

## Ratings

|                                         | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| 50 Vdc - Axial Leaded - CK14/M39014/05  |      |                |                |                              |      |      |      |
| .056 uF                                 | 10   |                | CKR14BX563K*   | 2687                         | 2887 | 2087 | 2287 |
| .068 uF                                 | 10   |                | CKR14BX683K*   | 2688                         | 2888 | 2088 | 2288 |
| .068 uF                                 | 20   |                | CKR14BX683M*   | 2689                         | 2889 | 2089 | 2289 |
| .082 uF                                 | 10   |                | CKR14BX823K*   | 2690                         | 2890 | 2090 | 2290 |
| .10 uF                                  | 10   |                | CKR14BX104K*   | 2691                         | 2891 | 2091 | 2291 |
| .10 uF                                  | 20   |                | CKR14BX104M*   | 2692                         | 2892 | 2092 | 2292 |
| .12 uF                                  | 10   | CK14BR124K     | CKR14BR124K*   | 2699                         | 2899 | 2099 | 2299 |
| .15 uF                                  | 10   | CK14BR154K     | CKR14BR154K*   | 2700                         | 2900 | 2100 | 2300 |
| .15 uF                                  | 20   | CK14BR154M     | CKR14BR154M*   | 2701                         | 2901 | 2101 | 2301 |
| .18 uF                                  | 10   | CK14BR184K     | CKR14BR184K*   | 2702                         | 2902 | 2102 | 2302 |
| .22 uF                                  | 10   | CK14BR224K     | CKR14BR224K*   | 2703                         | 2903 | 2103 | 2303 |
| .22 uF                                  | 20   | CK14BR224M     | CKR14BR224M*   | 2704                         | 2904 | 2104 | 2304 |
| .27 uF                                  | 10   | CK14BR274K     | CKR14BR274K*   | 2705                         | 2905 | 2105 | 2305 |
| 100 Vdc - Axial Leaded - CK14/M39014/05 |      |                |                |                              |      |      |      |
| .012 uF                                 | 10   | CK14BX123K     | CKR14BX123K*   | 2675                         | 2875 | 2075 | 2275 |
| .015 uF                                 | 10   | CK14BX153K     | CKR14BX153K*   | 2676                         | 2876 | 2076 | 2276 |

|                                         | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| 100 Vdc - Axial Leaded - CK14/M39014/05 |      |                |                |                              |      |      |      |
| .015 uF                                 | 20   | CK14BX153M     | CKR14BX153M*   | 2677                         | 2877 | 2077 | 2277 |
| .018 uF                                 | 10   | CK14BX183K     | CKR14BX183K*   | 2678                         | 2878 | 2078 | 2278 |
| .022 uF                                 | 10   | CK14BX223K     | CKR14BX223K*   | 2679                         | 2879 | 2079 | 2279 |
| .022 uF                                 | 20   | CK14BX223M     | CKR14BX223M*   | 2680                         | 2880 | 2080 | 2280 |
| .027 uF                                 | 10   | CK14BX273K     | CKR14BX273K*   | 2681                         | 2881 | 2081 | 2281 |
| .033 uF                                 | 10   | CK14BX333K     | CKR14BX333K*   | 2682                         | 2882 | 2082 | 2282 |
| .033 uF                                 | 20   | CK14BX333M     | CKR14BX333M*   | 2683                         | 2883 | 2083 | 2283 |
| .039 uF                                 | 10   | CK14BX393K     | CKR14BX393K*   | 2684                         | 2884 | 2084 | 2284 |
| .047 uF                                 | 10   | CK14BX473K     | CKR14BX473K*   | 2685                         | 2885 | 2085 | 2285 |
| .047 uF                                 | 20   | CK14BX473M     | CKR14BX473M*   | 2686                         | 2886 | 2086 | 2286 |
| .056 uF                                 | 10   | CK14BR563K     | CKR14BR563K*   | 2693                         | 2893 | 2093 | 2293 |
| .068 uF                                 | 10   | CK14BR683K     | CKR14BR683K*   | 2694                         | 2894 | 2094 | 2294 |
| .068 uF                                 | 20   | CK14BR683M     | CKR14BR683M*   | 2695                         | 2895 | 2095 | 2295 |
| .082 uF                                 | 10   | CK14BR823K     | CKR14BR823K*   | 2696                         | 2896 | 2096 | 2296 |
| .1 uF                                   | 10   | CK14BR104K     | CKR14BR104K*   | 2697                         | 2897 | 2097 | 2297 |
| .1 uF                                   | 20   | CK14BR104M     | CKR14BR104M*   | 2698                         | 2898 | 2098 | 2298 |

|                                         | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| 50 Vdc - Axial Leaded - CK15/M39014/05  |      |                |                |                              |      |      |      |
| .33 uF                                  | 10   | CK15BR334K     | CKR15BR334K*   | 2719                         | 2919 | 2119 | 2319 |
| .33 uF                                  | 20   | CK15BR334M     | CKR15BR334M*   | 2720                         | 2920 | 2120 | 2320 |
| .47 uF                                  | 10   | CK15BR474K     | CKR15BR474K*   | 2721                         | 2921 | 2121 | 2321 |
| .47 uF                                  | 20   | CK15BR474M     | CKR15BR474M*   | 2722                         | 2922 | 2122 | 2322 |
| .68 uF                                  | 10   |                | CKR15BR684K*   | 2723                         | 2923 | 2123 | 2323 |
| .68 uF                                  | 20   |                | CKR15BR684M*   | 2724                         | 2924 | 2124 | 2324 |
| 1.0 uF                                  | 10   | CK15BR105K     | CKR15BR105K*   | 2725                         | 2925 | 2125 | 2325 |
| 1.0 uF                                  | 20   | CK15BR105M     | CKR15BR105M*   | 2726                         | 2926 | 2126 | 2326 |
| 100 Vdc - Axial Leaded - CK15/M39014/05 |      |                |                |                              |      |      |      |
| .056 uF                                 | 10   |                | CKR15BX563K*   | 2706                         | 2906 | 2106 | 2306 |
| .068 uF                                 | 10   |                | CKR15BX683K*   | 2707                         | 2907 | 2107 | 2307 |

|                                         | Tol. |                | MIL-C-39014/05 | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|----------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/19 | References     | M                            | P    | R    | S    |
| 100 Vdc - Axial Leaded - CK15/M39014/05 |      |                |                |                              |      |      |      |
| .068 uF                                 | 20   |                | CKR15BX683M*   | 2708                         | 2908 | 2108 | 2308 |
| .082 uF                                 | 10   |                | CKR15BX823K*   | 2709                         | 2909 | 2109 | 2309 |
| .10 uF                                  | 10   | CK15BX104K     | CKR15BX104K*   | 2710                         | 2910 | 2110 | 2310 |
| .10 uF                                  | 20   | CK15BX104M     | CKR15BX104M*   | 2711                         | 2911 | 2111 | 2311 |
| .12 uF                                  | 10   | CK15BR124K     | CKR15BR124K*   | 2712                         | 2912 | 2112 | 2312 |
| .15 uF                                  | 10   | CK15BR154K     | CKR15BR154K*   | 2713                         | 2913 | 2113 | 2313 |
| .15 uF                                  | 20   | CK15BR154M     | CKR15BR154M*   | 2714                         | 2914 | 2114 | 2314 |
| .18 uF                                  | 10   | CK15BR184K     | CKR15BR184K*   | 2715                         | 2915 | 2115 | 2315 |
| .22 uF                                  | 10   | CK15BR224K     | CKR15BR224K*   | 2716                         | 2916 | 2116 | 2316 |
| .22 uF                                  | 20   | CK15BR224M     | CKR15BR224M*   | 2717                         | 2917 | 2117 | 2317 |
| .27 uF                                  | 10   | CK15BR274K     | CKR15BR274K*   | 2718                         | 2918 | 2118 | 2318 |

| Cap                                    | Tol. | MIL-C-39014/05 |              | 39014/05 Failure Rate Levels |      |      |      |
|----------------------------------------|------|----------------|--------------|------------------------------|------|------|------|
| Cap                                    | %    | MIL-C-11015/19 | References   | M                            | P    | R    | S    |
| 50 Vdc - Axial Leaded - CK16/M39014/05 |      |                |              |                              |      |      |      |
| 10 uF                                  | 10   | CK16BR105K     | CKR16BR105K* | 2731                         | 2931 | 2131 | 2331 |
| 10 uF                                  | 20   | CK16BR105M     | CKR16BR105M* | 2732                         | 2932 | 2132 | 2332 |
| 2.2 uF                                 | 10   | CK16BR225K     | CKR16BR225K* | 2733                         | 2933 | 2133 | 2333 |
| 2.2 uF                                 | 20   | CK16BR225M     | CKR16BR225M* | 2734                         | 2934 | 2134 | 2334 |
| 3.3 uF                                 | 10   | CK16BR335K     | CKR16BR335K* | 2735                         | 2935 | 2135 | 2335 |
| 3.3 uF                                 | 20   | CK16BR335M     | CKR16BR335M* | 2736                         | 2936 | 2136 | 2336 |

| Cap                                     | Tol. | MIL-C-39014/05 |              | 39014/05 Failure Rate Levels |      |      |      |
|-----------------------------------------|------|----------------|--------------|------------------------------|------|------|------|
| Cap                                     | %    | MIL-C-11015/19 | References   | M                            | P    | R    | S    |
| 100 Vdc - Axial Leaded - CK16/M39014/05 |      |                |              |                              |      |      |      |
| .47 uF                                  | 10   | CK16BR474K     | CKR16BR474K* | 2727                         | 2927 | 2127 | 2327 |
| .47 uF                                  | 20   | CK16BR474M     | CKR16BR474M* | 2728                         | 2928 | 2128 | 2328 |
| .68 uF                                  | 10   |                | CKR16BR684K* | 2729                         | 2929 | 2129 | 2329 |
| .68 uF                                  | 20   |                | CKR16BR684M* | 2730                         | 2930 | 2130 | 2330 |

Add 'TR' to end of part number for Tape & Reel  
Leads will be trimmed to .625" length

\*Insert proper letter symbol for Failure Rate Designator

M = 1% / 1000 Hours, P = 0.1% / 1000 Hours

R = 0.01% / 1000 Hours, S = 0.001% / 1000 Hours

Add 'V' at end of failure rate designator if stand-off design is required, (CKR only)

Add 'TR' to end of part number for Tape & Reel

Leads will be trimmed to .625' length

CK13 - 5,000 per reel

CK14 - 3,000 per reel

CK15 - 500 per reel

CK16 - 300 per reel

(Available in full reels only)