



Cypress Semiconductor Corporation, 198 Champion Court, San Jose, CA 95134. Tel: (408) 943-2600

PRODUCT INFORMATION NOTIFICATION

PIN: PIN172101

Date: May 30, 2017

Subject: Qualification of Hwa Shu Tape & Reel Materials for DFN and QFN Packages at ASE-Kaohsiung (ASE-KH)

To:

Change Type: Minor

Description of Change:

Cypress has qualified new tape & reel materials at Subcon ASE Kaohsiung (ASE-KH) for Dual Flat No-Lead (DFN) and Quad Flat No-lead (QFN) products. The new tape & reel materials have the applications below:

| MATERIAL | SUPPLIER | APPLICATION | WIDTH |
|--------------|----------|---|-----------------|
| Carrier Tape | Hwa Shu | 14 DFN 2.5x3.5x0.60mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 24 QFN 4x4x0.55mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 32 QFN 5x5x0.55mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 32 QFN 5x5x1.00mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 36 QFN 5x5x0.60mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 40 QFN 6x6x0.60mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 40 QFN 6x6x0.90mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 40 QFN 6x6x1.00mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 44 QFN 5x5x0.60mm package | 12.0mm |
| Carrier Tape | Hwa Shu | 48 QFN 6x6x0.60mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 48 QFN 6x6x1.00mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 48 QFN 7x7x1.00mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 56 QFN 6x6x0.60mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 56 QFN 7x7x0.60mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 56 QFN 8x8x1.00mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 68 QFN 8x8x0.85mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 68 QFN 8x8x1.00mm package | 16.0mm |
| Carrier Tape | Hwa Shu | 88 QFN 10x10x1.00mm package | 24.0mm |
| Cover Tape | Hwa Shu | Applicable to all DFN and QFN packages that uses 12.0mm, 16.0mm and 24.0mm carrier tape | 9.3mm 13.3mm |

| | | | |
|-----------|---------|---|--------------------------|
| | | width | 21.3mm |
| Lock Reel | Hwa Shu | Applicable to all DFN and QFN packages that uses 12.0mm, 16.0mm and 24.0mm carrier tape width | 4 inch hub 7 inch hub |

The newly qualified carrier tapes (Hwa Shu) have identical pocket designs and dimensions with the current carrier tapes (Advantek).

No changes were made to the following attributes:

- Unit orientation on carrier pocket
- Color of carrier tape
- Length and width
- EIA compliance

The newly qualified cover tape (Hwa Shu) has minor differences from the current cover tape (Advantek) as below:

- The color of the newly qualified cover tape is transparent allowing for better inspection of units inside the sealed carrier tape.
- The widths of the newly qualified cover tapes (9.2mm versus 9.3mm and 21.0mm versus 21.3mm) are wider to have more sealing area.

These minor differences have no effect on the application of the cover tapes. The newly qualified cover tapes pass the peel back force test requirement, and follow the EIA standard. This newly qualified cover tape is available in the standard 300m length. Refer to the below cover tape comparison:

| | CURRENT COVER TAPE | NEWLY QUALIFIED COVER TAPE |
|----------------------|--|--|
| Cover Tape Supplier | Advantek | Hwa Shu |
| Material Type | Anti-static, heat activated | Anti-static, heat activated |
| Material Thickness | 0.056 ± 0.005mm | 0.056 ± 0.005mm |
| Cover Tape Width | 9.2 ± 0.10mm 13.3 ± 0.10mm 21.0 ± 0.10mm | 9.3 ± 0.10mm 13.3 ± 0.10mm 21.3 ± 0.10mm |
| Inside Core Diameter | 76.20mm | 76.20mm |
| Color | Transparent pale blue | Transparent |

The newly qualified Hwa Shu lock reels are thinner than the current Advantek lock reels, with no effect on functionality. The new lock reels pass the drop test requirement, and are compliant to the EIA standard.

| | CURRENT LOCK REEL | NEWLY QUALIFIED LOCK REEL |
|--------------------|--------------------------|---------------------------|
| Lock Reel Supplier | Advantek | Hwa Shu |
| Material Type | Polystyrene, anti-static | Polystyrene, anti-static |
| Reel Thickness | 2.30 ± 0.20mm | 1.80 ± 0.20mm |
| Color | Black | Black |
| Lock Reel Diameter | 13 inch | 13 inch |
| Hub Diameter | 4 inch & 7 inch | 4 inch & 7 inch |

The new materials (carrier tape, cover tape and lock reel) have been qualified to have a second source local supplier for DFN and QFN products at ASE Kaohsiung.

Benefit of Change:

The new tape & reel materials supplier provides better technical support and shorter material delivery time. The Hwa Shu factory is located in Kaohsiung Taiwan. The local vendor can provide immediate support for any technical or material shipment problem that may cause production downtime.

Affected Part Numbers: 702

Affected Parts: See the attached 'Affected Parts List' file for a list of all part numbers affected by this notification. Note that any new parts that are introduced after the publication of this PIN will include all changes outlined in this PIN.

Qualification Status:

The changes listed in this PIN have been qualified through a series of tests documented in the Qualification Test Plan (QTP) report 170101. The report can be found as an attachment to this notification.

Approximate Implementation Date:

This change will be implemented from the date of this notification.

Anticipated Impact:

No anticipated impact. The new materials have been certified to be equivalent to the current materials from a functional and quality performance perspective.

Cypress also recommends that customers take this opportunity to review these changes against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

Method of Identification:

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the lot number marked on the package.

Response Required:

This is an information-only announcement. No response is required

For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at pcn_adm@cypress.com.

Sincerely,

Cypress PCN Administration

| Item | Marketing Part Number |
|------|-----------------------|
| 1 | CY22391LTXC-06T |
| 2 | CY22391LTXC-07T |
| 3 | CY24292LFXCT |
| 4 | CY24292LFXIT |
| 5 | CY2542QC002T |
| 6 | CY2542QFCT |
| 7 | CY2544QC011T |
| 8 | CY2544QC013T |
| 9 | CY2544QC014T |
| 10 | CY2544QC016T |
| 11 | CY2544QC023T |
| 12 | CY2544QFCT |
| 13 | CY2544QFIT |
| 14 | CY2545QC009T |
| 15 | CY2545QC010T |
| 16 | CY2545QC020T |
| 17 | CY2545QC021T |
| 18 | CY2545QC022T |
| 19 | CY2545QIT |
| 20 | CY2547QIT |
| 21 | CY2548QC003T |
| 22 | CY2548QC004T |
| 23 | CY2548QIT |
| 24 | CY27410FLTXIT |
| 25 | CY27410LTXI-002T |
| 26 | CY27410LTXI-004T |
| 27 | CY27410LTXI-007T |
| 28 | CY7C60323-LTXCT |
| 29 | CY7C60445-32LQXCT |
| 30 | CY7C63833-LTXCT |
| 31 | CY7C64215-56LTXCT |
| 32 | CY7C64215-56LTXIT |
| 33 | CY7C64343-32LQXCT |
| 34 | CY7C64345-32LQXCT |
| 35 | CY7C64346-32LQXCT |
| 36 | CY7C65210-24LTXIT |
| 37 | CY7C65211-24LTXIT |
| 38 | CY7C65211A-24LTXIT |
| 39 | CY7C65213-32LTXIT |
| 40 | CY7C65213A-32LTXIT |
| 41 | CY7C65215-32LTXIT |
| 42 | CY7C65215A-32LTXIT |
| 43 | CY7C65217-24LTXIT |
| 44 | CY7C65221-24LTXIT |
| 45 | CY7C65620-56LTXAT |
| 46 | CY7C65620-56LTXCT |

| | |
|----|---------------------|
| 47 | CY7C65620-56LTXIT |
| 48 | CY7C65621-56LTXCT |
| 49 | CY7C65621-56LTXIT |
| 50 | CY7C65630-56LTXAT |
| 51 | CY7C65630-56LTXCT |
| 52 | CY7C65630-56LTXIT |
| 53 | CY7C65631-56LTXCT |
| 54 | CY7C65631-56LTXIT |
| 55 | CY7C65640A-LTXCT |
| 56 | CY7C68003-24LQXIT |
| 57 | CY7C68013A-56LTXCT |
| 58 | CY7C68013A-56LTXIT |
| 59 | CY7C68016A-56LTXCT |
| 60 | CY7C68023-56LTXCT |
| 61 | CY8C20324-12LQXIT |
| 62 | CY8C20334-12LQXIT |
| 63 | CY8C20336A-24LQXIT |
| 64 | CY8C20337-24LQXIT |
| 65 | CY8C20346A-24LQXIT |
| 66 | CY8C20347-24LQXIT |
| 67 | CY8C20347S-24LQXIT |
| 68 | CY8C20396A-24LQXIT |
| 69 | CY8C20424-12LQXIT |
| 70 | CY8C20434-12LQXIT |
| 71 | CY8C20436A-24LQXIT |
| 72 | CY8C20436AN-24LQXIT |
| 73 | CY8C20437-24LQXIT |
| 74 | CY8C20446A-24LQXIT |
| 75 | CY8C20447-24LQXIT |
| 76 | CY8C20447S-24LQXIT |
| 77 | CY8C20466A-24LQXIT |
| 78 | CY8C20467-24LQXIT |
| 79 | CY8C20467S-24LQXIT |
| 80 | CY8C20496A-24LQXIT |
| 81 | CY8C20636A-24LQXIT |
| 82 | CY8C20637-24LQXIT |
| 83 | CY8C20646A-24LQXIT |
| 84 | CY8C20646AS-24LQXIT |
| 85 | CY8C20647-24LQXIT |
| 86 | CY8C20647S-24LQXIT |
| 87 | CY8C20666A-24LQXIT |
| 88 | CY8C20666AS-24LQXIT |
| 89 | CY8C20667-24LQXIT |
| 90 | CY8C20667S-24LQXIT |
| 91 | CY8C21323-24LQXIT |
| 92 | CY8C21434-24LQXIT |
| 93 | CY8C21434-24LTXIT |

| | |
|-----|--------------------|
| 94 | CY8C21634-24LTXIT |
| 95 | CY8C23533-24LQXIT |
| 96 | CY8C24423A-24LTXIT |
| 97 | CY8C24794-24LQXIT |
| 98 | CY8C24794-24LTXIT |
| 99 | CY8C24894-24LTXAT |
| 100 | CY8C24894-24LTXIT |
| 101 | CY8C24994-24LTXIT |
| 102 | CY8C28623-24LTXIT |
| 103 | CY8C28643-24LTXIT |
| 104 | CY8C28645-24LTXIT |
| 105 | CY8C3244LTI-123T |
| 106 | CY8C3244LTI-130T |
| 107 | CY8C3245LTI-139T |
| 108 | CY8C3245LTI-144T |
| 109 | CY8C3245LTI-163T |
| 110 | CY8C3246LTI-125T |
| 111 | CY8C3246LTI-128T |
| 112 | CY8C3246LTI-149T |
| 113 | CY8C3246LTI-162T |
| 114 | CY8C3444LTI-110T |
| 115 | CY8C3444LTI-119T |
| 116 | CY8C3445LTI-078T |
| 117 | CY8C3445LTI-079T |
| 118 | CY8C3445LTI-081T |
| 119 | CY8C3446LTI-073T |
| 120 | CY8C3446LTI-074T |
| 121 | CY8C3446LTI-083T |
| 122 | CY8C3446LTI-085T |
| 123 | CY8C3665LTI-044T |
| 124 | CY8C3665LTI-199T |
| 125 | CY8C3666LTI-027T |
| 126 | CY8C3666LTI-050T |
| 127 | CY8C3666LTI-201T |
| 128 | CY8C3666LTI-203T |
| 129 | CY8C3865LTI-014T |
| 130 | CY8C3865LTI-205T |
| 131 | CY8C3866LTI-030T |
| 132 | CY8C3866LTI-067T |
| 133 | CY8C3866LTI-068T |
| 134 | CY8C3866LTI-207T |
| 135 | CY8C3866LTI-209T |
| 136 | CY8C4014LQA-422T |
| 137 | CY8C4014LQI-412T |
| 138 | CY8C4014LQI-422T |
| 139 | CY8C4014LQS-422T |
| 140 | CY8C4024LQI-S401T |

| | |
|-----|----------------------|
| 141 | CY8C4024LQI-S402T |
| 142 | CY8C4024LQI-S403T |
| 143 | CY8C4024LQI-S411T |
| 144 | CY8C4024LQI-S412T |
| 145 | CY8C4024LQI-S413T |
| 146 | CY8C4025LQI-S401T |
| 147 | CY8C4025LQI-S402T |
| 148 | CY8C4025LQI-S411T |
| 149 | CY8C4025LQI-S412T |
| 150 | CY8C4045LQI-S411T |
| 151 | CY8C4045LQI-S412T |
| 152 | CY8C4124LQI-443T |
| 153 | CY8C4124LQI-S412T |
| 154 | CY8C4124LQI-S413T |
| 155 | CY8C4124LQI-S432T |
| 156 | CY8C4124LQI-S433T |
| 157 | CY8C4125LQI-483T |
| 158 | CY8C4125LQI-S412T |
| 159 | CY8C4125LQI-S413T |
| 160 | CY8C4125LQI-S422T |
| 161 | CY8C4125LQI-S423T |
| 162 | CY8C4125LQI-S432T |
| 163 | CY8C4125LQI-S433T |
| 164 | CY8C4128LQI-BL483T |
| 165 | CY8C4128LQI-BL563T |
| 166 | CY8C4146LQI-S422T |
| 167 | CY8C4146LQI-S423T |
| 168 | CY8C4146LQI-S432T |
| 169 | CY8C4146LQI-S433T |
| 170 | CY8C4245LQI-483T |
| 171 | CY8C4245LTI-DM405T |
| 172 | CY8C4248LQI-BL483T |
| 173 | CY8C4248LQI-BL583T |
| 174 | CY8CMBR2010-24LQXIT |
| 175 | CY8CMBR2016-24LQXIT |
| 176 | CY8CMBR2110-24LQXIT |
| 177 | CY8CMBR3106S-LQXIT |
| 178 | CY8CMBR3116-LQXIT |
| 179 | CY8CTMA120-56LTXAT |
| 180 | CY8CTMA140-48LQI-01T |
| 181 | CY8CTMA140-LQI-01T |
| 182 | CY8CTMA140-LQI-09T |
| 183 | CY8CTMA300E-36LQXIT |
| 184 | CY8CTMA300E-48LQXIT |
| 185 | CY8CTMA340-48LQI-01T |
| 186 | CY8CTMA340-48LQI-03T |
| 187 | CY8CTMA340-48LQI-09T |

| | |
|-----|---------------------|
| 188 | CY8CTMA340-LQI-01T |
| 189 | CY8CTMA440-48LQIT |
| 190 | CY8CTMA445-44LQIT |
| 191 | CY8CTMA445-48LQIT |
| 192 | CY8CTMA461-48LQIT |
| 193 | CY8CTMA463-44LQIT |
| 194 | CY8CTMA463-48LQIT |
| 195 | CY8CTMA463-56LQIT |
| 196 | CY8CTMA616LTI-13T |
| 197 | CY8CTMA884LTI-13T |
| 198 | CY8CTMG120-56LTXAT |
| 199 | CY8CTMG120-56LTXIT |
| 200 | CY8CTMG200A-32LQXIT |
| 201 | CY8CTMG201A-32LQXIT |
| 202 | CY8CTMG240-LQI-01T |
| 203 | CY8CTST120-56LTXIT |
| 204 | CY8CTST200A-24LQXIT |
| 205 | CY8CTST200A-32LQXIT |
| 206 | CY8CTST241-LQI-01T |
| 207 | CY8CTST242-LQI-01T |
| 208 | CYBL10161-56LQXIT |
| 209 | CYBL10162-56LQXIT |
| 210 | CYBL10163-56LQXIT |
| 211 | CYBL10461-56LQXIT |
| 212 | CYBL10462-56LQXIT |
| 213 | CYBL10463-56LQXIT |
| 214 | CYBL10561-56LQXIT |
| 215 | CYBL10562-56LQXIT |
| 216 | CYBL10563-56LQXIT |
| 217 | CYBL10573-56LQXIT |
| 218 | CYBL10999-56LQXIT |
| 219 | CYBL11171-56LQXIT |
| 220 | CYBL11172-56LQXIT |
| 221 | CYBL11473-56LQXIT |
| 222 | CYBL11573-56LQXIT |
| 223 | CYPD1120-40LQXIT |
| 224 | CYPD1121-40LQXIT |
| 225 | CYPD1122-40LQXIT |
| 226 | CYPD1134-40LQXIT |
| 227 | CYPD2103-14LHXIT |
| 228 | CYPD2119-24LQXIT |
| 229 | CYPD2120-24LQXIT |
| 230 | CYPD2121-24LQXIT |
| 231 | CYPD2122-24LQXIT |
| 232 | CYPD2125-24LQXIT |
| 233 | CYPD2134-24LQXIT |
| 234 | CYPD2134-24LQXQT |

| | |
|-----|----------------------|
| 235 | CYPD3120-40LQXIT |
| 236 | CYPD3121-40LQXIT |
| 237 | CYPD3122-40LQXIT |
| 238 | CYPD3123-40LQXIT |
| 239 | CYPD3125-40LQXIT |
| 240 | CYPD3135-40LQXIT |
| 241 | CYPD3135-40LQXQT |
| 242 | CYPD4125-40LQXIT |
| 243 | CYPD4126-40LQXIT |
| 244 | CYPD4225-40LQXIT |
| 245 | CYPD4226-40LQXIT |
| 246 | CYSHM35925I-M068LTIT |
| 247 | CYSHM35926P-L068LTIT |
| 248 | CYTMA445-44LQI28AAAT |
| 249 | CYTMA445-44LQI33AAAT |
| 250 | CYTMA445-44LQI33ABAT |
| 251 | CYTMA445-44LQI33ABT |
| 252 | CYTMA445-44LQI33ACAT |
| 253 | CYTMA445-44LQI33AEAT |
| 254 | CYTMA445-44LQI33ZZAT |
| 255 | CYTMA445-44LQI33ZZT |
| 256 | CYTMA445-48LQI36AAAT |
| 257 | CYTMA445-48LQI36ABAT |
| 258 | CYTMA445-48LQI36ACAT |
| 259 | CYTMA445-48LQI36AEAT |
| 260 | CYTMA445-48LQI36AET |
| 261 | CYTMA445-48LQI36ZZAT |
| 262 | CYTMA445A-44LQI28AAT |
| 263 | CYTMA445A-44LQI28ABT |
| 264 | CYTMA445A-44LQI33AAT |
| 265 | CYTMA445A-44LQI33ABT |
| 266 | CYTMA445A-44LQI35AAT |
| 267 | CYTMA445A-44LQI35ABT |
| 268 | CYTMA445A-44LQI35ACT |
| 269 | CYTMA445A-44LQI35AET |
| 270 | CYTMA445A-44LQI35ZZT |
| 271 | CYTMA445A-48LQI36AAT |
| 272 | CYTMA445A-48LQI36ABT |
| 273 | CYTMA445A-48LQI36ACT |
| 274 | CYTMA445A-48LQI36AET |
| 275 | CYTMA445A-48LQI36BAT |
| 276 | CYTMA445A-48LQI36ZZT |
| 277 | CYTMA448-56LQI44AAT |
| 278 | CYTMA448-56LQI44ABT |
| 279 | CYTMA448-56LQI44AET |
| 280 | CYTMA448-56LQI44AWT |
| 281 | CYTMA448-56LQI44ZXT |

| | |
|-----|----------------------|
| 282 | CYTMA545-44LQI33AAAT |
| 283 | CYTMA545-44LQI33ABAT |
| 284 | CYTMA545-48LQI36AAAT |
| 285 | CYTMA545-48LQI36ABAT |
| 286 | CYTMA545-48LQI36BBAT |
| 287 | CYTMA545-48LQI36ZZAT |
| 288 | CYTMA545-48LQI36ZZT |
| 289 | CYTMA568-56LQI44AAAT |
| 290 | CYTMA568-56LQI44ABT |
| 291 | CYTMA568-56LQI44ADT |
| 292 | CYTMA568-56LQI44APT |
| 293 | CYTMA568-56LQI44AWT |
| 294 | CYTMA568-56LQI44BBT |
| 295 | CYTMA568-56LQI44CBT |
| 296 | CYTMA568-56LQI44ZXT |
| 297 | CYTR21100-44LQI28T |
| 298 | CYTR-31001A-44LQI28T |
| 299 | CYTT21100-44LQI28T |
| 300 | CYTT21100-44LQI33T |
| 301 | CYTT21100-44LQI35T |
| 302 | CYTT21100-48LQI36T |
| 303 | CYTT21100-56LQI40T |
| 304 | CYTT21100-56LQI44T |
| 305 | CYTT21100-56LQI48T |
| 306 | CYTT21401-44LQI28T |
| 307 | CYTT21401-44LQI33T |
| 308 | CYTT21401-44LQI35T |
| 309 | CYTT21401-48LQI36T |
| 310 | CYTT21401-56LQI40T |
| 311 | CYTT21401-56LQI44T |
| 312 | CYTT21401-56LQI48T |
| 313 | CYTT21402-44LQI28T |
| 314 | CYTT21402-44LQI33T |
| 315 | CYTT21402-44LQI35T |
| 316 | CYTT21402-48LQI36T |
| 317 | CYTT21402-56LQI40T |
| 318 | CYTT21402-56LQI44T |
| 319 | CYTT21402-56LQI48T |
| 320 | CYTT21403-44LQI35T |
| 321 | CYTT21403-48LQI36T |
| 322 | CYTT21403-56LQI40T |
| 323 | CYTT21403-56LQI44T |
| 324 | CYTT21403-56LQI48T |
| 325 | CYTT31401-56LQI48T |
| 326 | CYTT31702-56LQI48T |
| 327 | CYTT31802-56LQI48T |
| 328 | CYTT32302-56LQI48T |

| | |
|-----|--------------------|
| 329 | CYUSB2302-68LTXIT |
| 330 | CYUSB2304-68LTXIT |
| 331 | CYUSB3302-68LTXCT |
| 332 | CYUSB3302-68LTXIT |
| 333 | CYUSB3304-68LTXCT |
| 334 | CYUSB3304-68LTXIT |
| 335 | CYUSB3312-88LTXCT |
| 336 | CYUSB3312-88LTXIT |
| 337 | CYUSB3314-88LTXCT |
| 338 | CYUSB3314-88LTXIT |
| 339 | CYUSB3324-88LTXCT |
| 340 | CYUSB3324-88LTXIT |
| 341 | CYUSB3326-88LTXCT |
| 342 | CYUSB3326-88LTXIT |
| 343 | CYUSB3328-88LTXCT |
| 344 | CYUSB3328-88LTXIT |
| 345 | TMA140-48LQI-01T |
| 346 | TMA140-LQI-01T |
| 347 | TMA140-LQI-09T |
| 348 | TMA300E-36LQXIT |
| 349 | TMA300E-48LQXIT |
| 350 | TMA340-48LQI-01T |
| 351 | TMA340-48LQI-03T |
| 352 | TMA340-48LQI-09T |
| 353 | TMA340-LQI-01T |
| 354 | TMA440-48LQIT |
| 355 | TMA445-44LQI28AAAT |
| 356 | TMA445-44LQI33AAAT |
| 357 | TMA445-44LQI33ABAT |
| 358 | TMA445-44LQI33ABT |
| 359 | TMA445-44LQI33ACAT |
| 360 | TMA445-44LQI33AEAT |
| 361 | TMA445-44LQI33ZZAT |
| 362 | TMA445-44LQI33ZZT |
| 363 | TMA445-44LQIT |
| 364 | TMA445-48LQI36AAAT |
| 365 | TMA445-48LQI36ABAT |
| 366 | TMA445-48LQI36ACAT |
| 367 | TMA445-48LQI36AEAT |
| 368 | TMA445-48LQI36AET |
| 369 | TMA445-48LQI36ZZAT |
| 370 | TMA445-48LQIT |
| 371 | TMA445A-44LQI28AAT |
| 372 | TMA445A-44LQI28ABT |
| 373 | TMA445A-44LQI33AAT |
| 374 | TMA445A-44LQI33ABT |
| 375 | TMA445A-44LQI35AAT |

| | |
|-----|--------------------|
| 376 | TMA445A-44LQI35ABT |
| 377 | TMA445A-44LQI35ACT |
| 378 | TMA445A-44LQI35AET |
| 379 | TMA445A-44LQI35ZZT |
| 380 | TMA445A-48LQI36AAT |
| 381 | TMA445A-48LQI36ABT |
| 382 | TMA445A-48LQI36ACT |
| 383 | TMA445A-48LQI36AET |
| 384 | TMA445A-48LQI36BAT |
| 385 | TMA445A-48LQI36ZZT |
| 386 | TMA448-56LQI44AAT |
| 387 | TMA448-56LQI44ABT |
| 388 | TMA448-56LQI44AET |
| 389 | TMA448-56LQI44AWT |
| 390 | TMA448-56LQI44ZXT |
| 391 | TMA461-48LQIT |
| 392 | TMA463-44LQIT |
| 393 | TMA463-48LQIT |
| 394 | TMA463-56LQIT |
| 395 | TMA545-44LQI33AAAT |
| 396 | TMA545-44LQI33ABAT |
| 397 | TMA545-48LQI36AAAT |
| 398 | TMA545-48LQI36ABAT |
| 399 | TMA545-48LQI36BBAT |
| 400 | TMA545-48LQI36ZZAT |
| 401 | TMA545-48LQI36ZZT |
| 402 | TMA562-56LQI44T |
| 403 | TMA562-56LQI48T |
| 404 | TMA568-56LQI44AAT |
| 405 | TMA568-56LQI44ABT |
| 406 | TMA568-56LQI44ADT |
| 407 | TMA568-56LQI44APT |
| 408 | TMA568-56LQI44AWT |
| 409 | TMA568-56LQI44BBT |
| 410 | TMA568-56LQI44CBT |
| 411 | TMA568-56LQI44ZXT |
| 412 | TMG200A-32LQXIT |
| 413 | TMG201A-32LQXIT |
| 414 | TMG240-LQI-01T |
| 415 | TST200A-24LQXIT |
| 416 | TST200A-32LQXIT |
| 417 | TST241-LQI-01T |
| 418 | TST242-LQI-01T |
| 419 | TT21100-44LQI28T |
| 420 | TT21100-44LQI33T |
| 421 | TT21100-44LQI35T |
| 422 | TT21100-48LQI36T |

| | |
|-----|------------------|
| 423 | TT21100-56LQI40T |
| 424 | TT21100-56LQI44T |
| 425 | TT21100-56LQI48T |
| 426 | TT21401-44LQI28T |
| 427 | TT21401-44LQI33T |
| 428 | TT21401-44LQI35T |
| 429 | TT21401-48LQI36T |
| 430 | TT21401-56LQI40T |
| 431 | TT21401-56LQI44T |
| 432 | TT21401-56LQI48T |
| 433 | TT21402-44LQI28T |
| 434 | TT21402-44LQI33T |
| 435 | TT21402-44LQI35T |
| 436 | TT21402-48LQI36T |
| 437 | TT21402-56LQI40T |
| 438 | TT21402-56LQI44T |
| 439 | TT21402-56LQI48T |
| 440 | TT21403-44LQI35T |
| 441 | TT21403-48LQI36T |
| 442 | TT21403-56LQI40T |
| 443 | TT21403-56LQI44T |
| 444 | TT21403-56LQI48T |
| 445 | TT31401-56LQI48T |
| 446 | TT31702-56LQI48T |
| 447 | TT31802-56LQI48T |
| 448 | TT32302-56LQI48T |
| 449 | CG6897DST |
| 450 | CG7047DAT |
| 451 | CG7153AMT |
| 452 | CG7158DMT |
| 453 | CG7243AMT |
| 454 | CG7272AAT |
| 455 | CG7297AMT |
| 456 | CG7392AMT |
| 457 | CG7459AMT |
| 458 | CG7470AMT |
| 459 | CG7476AFT |
| 460 | CG7479AMT |
| 461 | CG7496AAT |
| 462 | CG7497AAT |
| 463 | CG7527AMT |
| 464 | CG7531AMT |
| 465 | CG7539AMT |
| 466 | CG7541AMT |
| 467 | CG7554AAT |
| 468 | CG7558AAT |
| 469 | CG7560AAT |

| | |
|-----|-----------|
| 470 | CG7561AAT |
| 471 | CG7566AFT |
| 472 | CG7578AAT |
| 473 | CG7605AMT |
| 474 | CG7606AAT |
| 475 | CG7608AAT |
| 476 | CG7609AAT |
| 477 | CG7610AMT |
| 478 | CG7614AAT |
| 479 | CG7625AAT |
| 480 | CG7662AAT |
| 481 | CG7663AAT |
| 482 | CG7680AAT |
| 483 | CG7681AAT |
| 484 | CG7718AMT |
| 485 | CG7720AMT |
| 486 | CG7724AAT |
| 487 | CG7754AAT |
| 488 | CG7764AAT |
| 489 | CG7776AMT |
| 490 | CG7777AAT |
| 491 | CG7784AAT |
| 492 | CG7786AAT |
| 493 | CG7787AAT |
| 494 | CG7788AAT |
| 495 | CG7806BAT |
| 496 | CG7851AAT |
| 497 | CG7884AAT |
| 498 | CG7890AAT |
| 499 | CG7891AAT |
| 500 | CG7911AMT |
| 501 | CG7973AAT |
| 502 | CG8002BAT |
| 503 | CG8081AMT |
| 504 | CG8090AAT |
| 505 | CG8136AMT |
| 506 | CG8152AAT |
| 507 | CG8178AAT |
| 508 | CG8190AMT |
| 509 | CG8328AMT |
| 510 | CG8333AMT |
| 511 | CG8349ATT |
| 512 | CG8352AFT |
| 513 | CG8353AFT |
| 514 | CG8354AFT |
| 515 | CG8360AMT |
| 516 | CG8364AMT |

| | |
|-----|-----------|
| 517 | CG8371AAT |
| 518 | CG8372AMT |
| 519 | CG8374AFT |
| 520 | CG8378AAT |
| 521 | CG8382AFT |
| 522 | CG8382BFT |
| 523 | CG8431AAT |
| 524 | CG8454AMT |
| 525 | CG8458ATT |
| 526 | CG8463ATT |
| 527 | CG8469AMT |
| 528 | CG8472AAT |
| 529 | CG8477AAT |
| 530 | CG8494AAT |
| 531 | CG8496AAT |
| 532 | CG8498AAT |
| 533 | CG8504AAT |
| 534 | CG8506AAT |
| 535 | CG8508AAT |
| 536 | CG8513AAT |
| 537 | CG8515AAT |
| 538 | CG8522AAT |
| 539 | CG8524AAT |
| 540 | CG8526AAT |
| 541 | CG8529AAT |
| 542 | CG8536AAT |
| 543 | CG8548AAT |
| 544 | CG8549AAT |
| 545 | CG8558AAT |
| 546 | CG8560AMT |
| 547 | CG8566AAT |
| 548 | CG8581AAT |
| 549 | CG8584AAT |
| 550 | CG8586AMT |
| 551 | CG8613AAT |
| 552 | CG8646AAT |
| 553 | CG8652AFT |
| 554 | CG8671AAT |
| 555 | CG8672AAT |
| 556 | CG8682AFT |
| 557 | CG8744AMT |
| 558 | CG8751AFT |
| 559 | CG8757AFT |
| 560 | CG8765AFT |
| 561 | CP6759DMT |
| 562 | CP7293ATT |
| 563 | CP7349ATT |

| | |
|-----|-----------|
| 564 | CP7402ATT |
| 565 | CP7437ATT |
| 566 | CP7458CTT |
| 567 | CP7463CTT |
| 568 | CP7464ATT |
| 569 | CP7466ATT |
| 570 | CP7487BTT |
| 571 | CP7488BTT |
| 572 | CP7488DTT |
| 573 | CP7502ATT |
| 574 | CP7502BTT |
| 575 | CP7505ATT |
| 576 | CP7505BTT |
| 577 | CP7581ATT |
| 578 | CP7583ATT |
| 579 | CP7654ATT |
| 580 | CP7669ATT |
| 581 | CP7709ETT |
| 582 | CP7709FTT |
| 583 | CP7709GTT |
| 584 | CP7709KTT |
| 585 | CP7709LTT |
| 586 | CP7741ATT |
| 587 | CP7769ATT |
| 588 | CP7770BTT |
| 589 | CP7771BTT |
| 590 | CP7862ATT |
| 591 | CP7912ATT |
| 592 | CP7914BTT |
| 593 | CP7915BTT |
| 594 | CP7915FTT |
| 595 | CP7949ATT |
| 596 | CP7950ATT |
| 597 | CP7988ATT |
| 598 | CP7989ATT |
| 599 | CP7995ATT |
| 600 | CP7995BTT |
| 601 | CP7996ATT |
| 602 | CP7997ATT |
| 603 | CP8007ATT |
| 604 | CP8011ATT |
| 605 | CP8011BTT |
| 606 | CP8063ATT |
| 607 | CP8064ATT |
| 608 | CP8068ATT |
| 609 | CP8109ATT |
| 610 | CP8112ATT |

| | |
|-----|-----------|
| 611 | CP8121ATT |
| 612 | CP8121BTT |
| 613 | CP8125ATT |
| 614 | CP8125BTT |
| 615 | CP8132ATT |
| 616 | CP8132BTT |
| 617 | CP8132CTT |
| 618 | CP8132DTT |
| 619 | CP8133ATT |
| 620 | CP8133BTT |
| 621 | CP8133CTT |
| 622 | CP8133DTT |
| 623 | CP8151ATT |
| 624 | CP8173ATT |
| 625 | CP8173BTT |
| 626 | CP8173CTT |
| 627 | CP8174ATT |
| 628 | CP8174BTT |
| 629 | CP8175ATT |
| 630 | CP8176ATT |
| 631 | CP8176BTT |
| 632 | CP8329ATT |
| 633 | CP8330ATT |
| 634 | CP8347ATT |
| 635 | CP8355ATT |
| 636 | CP8358ATT |
| 637 | CP8363ATT |
| 638 | CP8366ATT |
| 639 | CP8376ETT |
| 640 | CP8376GTT |
| 641 | CP8377ATT |
| 642 | CP8380ATT |
| 643 | CP8387ATT |
| 644 | CP8388ATT |
| 645 | CP8400ATT |
| 646 | CP8400BTT |
| 647 | CP8400CTT |
| 648 | CP8401ATT |
| 649 | CP8407ATT |
| 650 | CP8412ATT |
| 651 | CP8455ATT |
| 652 | CP8456ATT |
| 653 | CP8461ATT |
| 654 | CP8473ATT |
| 655 | CP8483ATT |
| 656 | CP8483BTT |
| 657 | CP8483CTT |

| | |
|-----|-----------|
| 658 | CP8483DTT |
| 659 | CP8538ATT |
| 660 | CP8551ATT |
| 661 | CP8562ATT |
| 662 | CP8568ATT |
| 663 | CP8570ATT |
| 664 | CP8585ATT |
| 665 | CP8599ATT |
| 666 | CP8617ATT |
| 667 | CP8618ATT |
| 668 | CP8627ATT |
| 669 | CP8627BTT |
| 670 | CP8628ATT |
| 671 | CP8628BTT |
| 672 | CP8628CTT |
| 673 | CP8642ATT |
| 674 | CP8654ATT |
| 675 | CP8654BTT |
| 676 | CP8654CTT |
| 677 | CP8658ATT |
| 678 | CP8659ATT |
| 679 | CP8666ATT |
| 680 | CP8685ATT |
| 681 | CP8688ATT |
| 682 | CP8691ATT |
| 683 | CP8710ATT |
| 684 | CP8742ATT |
| 685 | CS445AT |
| 686 | CS6651DAT |
| 687 | CS6651HAT |
| 688 | CS6651JAT |
| 689 | CS7224AAT |
| 690 | CS7275AAT |
| 691 | CS7453ATT |
| 692 | CS8088AMT |
| 693 | CS8435AAT |
| 694 | CS8481AAT |
| 695 | CS8482AAT |
| 696 | CS8537AAT |
| 697 | CS8541AMT |
| 698 | CS8572AAT |
| 699 | CS8590AMT |
| 700 | CS8687AMT |
| 701 | CS8711AMT |
| 702 | CS8750AMT |