

STANDARD PROCEDURES AND PRACTICES

NUMBER: SPP-025, Issue B

SUBJECT: Package Variation Designators

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BACKGROUND:

Currently, package variation designators use one or more letter codes to designate various package variations and summarized in a look-up table. These codes have no relationship whatsoever to the body size or other package features. Moreover, addition of new body sizes that falls in between pre-assigned body size codes result to those new variations to be listed out of alphabetical sequence in a variation table. JC-11 recognizes the need to provide a new designator scheme that addresses these shortcomings.

PRACTICE:

All new and revisions to existing package outlines for BGA and LGA will be assigned a package variation designator according to the variation scheme outlined in this SPP specification.

BGA and LGA packages will take the following package variation designator format:

P-DD.DxEE.E-eb-nF

P = package profile height code (dimension A).

Profile heights ascend in 0.10 mm increments

140 = $1.30 < A \leq 1.40$

130 = $1.20 < A \leq 1.30$

120 = $1.10 < A \leq 1.20$

110 = $1.00 < A \leq 1.10$

100 = $0.90 < A \leq 1.00$

090 = $0.80 < A \leq 0.90$

080 = $0.70 < A \leq 0.80$

070 = $0.60 < A \leq 0.70$

060 = $0.50 < A \leq 0.60$

050 = $0.40 < A \leq 0.50$

040 = $0.30 < A \leq 0.40$

030 = $0.25 < A \leq 0.30$

025 = $0.20 < A \leq 0.25$

020 = $0.15 < A \leq 0.20$

015 = $0.10 < A \leq 0.15$

010 = $0.05 < A \leq 0.10$

005 = $0.00 < A \leq 0.05$

DD.D = package body size in the D dimension to 1 decimal place.

EE.E = package body size in the E dimension to 1 decimal place

Example: D = 55.00 mm to be listed as 55.0

D = 5.50 mm to be listed as 5.5

e = ball pitch per the following codes:

A = (future new pitch)

B = (future new pitch)

C = 1.50 mm

D = 1.27 mm

E = 1.00 mm

F = 0.80 mm

G = 0.75 mm

H = 0.65 mm

J = (future new pitch)

K = 0.50 mm

L = 0.40 mm

If the ball pitch is different in the D and E dimensions then the pitch variation will be added to the variation scheme as D pitch x E pitch

Example: D pitch = G: 0.75mm

E pitch = K: 0.50mm

Variation scheme = PDD.DxEE.E-**GxK**b-nF

b = nominal ball diameter (not used in LGA packages)

A = (future new ball diameter)

B = (future new ball diameter)

C = 0.75 mm

D = 0.70 mm

E = 0.65 mm

F = 0.60 mm

G = 0.55 mm

H = 0.50 mm

J = 0.45 mm

K = 0.40 mm

L = 0.35 mm

M = 0.30 mm

N = 0.25 mm

P = 0.20 mm

R = 0.17 mm

n = actual ball count

F = footprint letter