IPC-7351B Naming Convention for Standard SMT Land Patterns

Surface Mount Land Patterns

Component, Category

Land Pattern Name

Ball Grid Array BaA + Pin City + C or N + Cof Pint X Row Pitch P + Ball Columns X Ball Rows		
BGA Nots: The G or N = Collepsing of Non-collaging Balls Capacitors, Chip, Array, Concave CAPCAY + Pitch P + Body Length X Body Width X Height - Pin Oty Capacitors, Chip, Array, Concave CAPCAY + Pitch P + Body Length X Body Width X Height - Pin Oty Capacitors, Chip, More-polarized. CAPCA + Body Length - Rody Width X Height - Pin Oty Capacitors, Chip, More-polarized. CAPCA + Body Length - Body Width X Height - Pin Oty Capacitors, Chip, More-polarized. CAPCA + Body Length - Body Width X Height Capacitors, Molided, Mon-polarized. CAPCA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Capacitors, Molided, Polarized. CAPMA + Body Length - Body Width X Height Column Grid Array, Circular Lead. CGA + Pin Cdy + Pinc P+ Pin Columns X Pin Rows _ Body Length x Body Width X Height Clystals (2 Beads). Divided - Body Length - Body Width X Height Clystals (2 Beads). Divided - Body Length - Body Width X Height Clystals (2 Beads). Divided - Body Length - Body Width X Height Clystals (2 Beads). Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divides, Molided Divided - Body Length - Body Width X Height Divided - Body Length - Body Width X Height Divides, Molided		
BGA Note: The C or N = Collapsing or Non-collapsing Balls Capacitors, Chip, Array, Concave CAPCAF + Pitch P + Body Length X Body Width X Height - Pin Cly Capacitors, Chip, Array, Filat CAPCAF + Pitch P + Body Length X Body Width X Height - Pin Cly Capacitors, Chip, Non-polarized CAPCP + Body Length + Body Width X Height Capacitors, Chip, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Chip, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Chip, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Chip, Wide Rectargle CAPCP + Body Length + Body Width X Height Capacitors, Midded, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Midded, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Midded, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Midded, Polarized CAPCP + Body Length + Body Width X Height Capacitors, Midded, Polarized CAPCP + Body Length + Body Width X Height Column Crary, Circular Lead CAPCP + Body Length + Body Width X Height Column Crary, Circular Lead CGA + Pin City + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Column Crid Array, Circular Lead CGA + Pin City + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Dual-in-Line Packages (Butt Mount). DIP + Pitch P + Lead Span Nominal X Height - Pin City Diodes, Chip. DIOCE Body Length X Body Width X Height Dual-in-Line Packages (Butt Mount). DIOCE Body Length X Body Width X Height Diodes, Mills DIOCE Body Length X Body Width X Height Diodes, Mills DIOCE Body Length X Body Width X Height Inductors, Chip. DIOCE Body Length X Body Width X Height Inductors, Chip, Array, Concave DIOCE Body Length X Body Width X Height Inductors, Chip, Array, Concave DIOCE Body Length X Body Width X Height Inductors, Chip, Array, Concave DIOCE Body Length X Body Width X Height Inductors, Chip, Array, Concave DIOCE Body Length X Body Width X Height Inductors, Chip, Array, Concave DIOCE Body Length X Body Width X Height	BGA w/Dual Pitch . BGA + Pin Qty + C or N + Col Pitch X Re	ow Pitch P + Ball Columns X Ball Rows _ Body Length X Body Width X Height
Capacitors, Chip, Array, Flat I CAPCAV + Pitch P + Body Length X Body Width X Height - Pin Gty Capacitors, Chip, Narry-plotarized		
Capacitors, Chip, Norr-polarized Capacitors, Chip, Norr-polarized Capacitors, Chip, Norr-polarized Capacitors, Chip, Polarized Capacitors, Chip, Polarized Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Molded, Norr-polarized Capacitors, Aluminum Electrolytic Capacitors, Aluminum Capac	BGA Note: The C or N = Collapsing or Non-collapsing Balls	
Capacitors, Chip, Norr-polarized Capacitors, Chip, Norr-polarized Capacitors, Chip, Norr-polarized Capacitors, Chip, Polarized Capacitors, Chip, Polarized Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Chip, Wite Rectargle Capacitors, Molded, Norr-polarized Capacitors, Aluminum Electrolytic Capacitors, Aluminum Capac	Capacitors, Chip, Array, Concave	CAPCAV + Pitch P + Body Length X Body Width X Height - Pin Qty
Capacitors, Chip, Non-polarizaed	Capacitors, Chip. Array, Flat	CAPCAF + Pitch P + Body Length X Body Width X Height - Pin Qty
Capacitors, Chip, Polarized. CAPCMP + Body Length + Body Width X Height Capacitors, Molded, Non-polarized CAPCMR + Body Length + Body Width X Height Capacitors, Molded, Polarized CAPCMR + Body Length + Body Width X Height Capacitors, Molded, Polarized CAPCMP + Body Length + Body Width X Height Capacitors, Aluminum Electrolytic CAPCMP + Body Length + Body Width X Height Capacitors, Aluminum Electrolytic CAPCMP + Body Length + Body Width X Height Capacitors, Aluminum Electrolytic CAPCMP + Body Length + Body Width X Height Column Grid Array, Square Lead CGA + Pin Qly + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Crystals (2 leads) Crystals (2 leads) CRYSTAL + Body Length + Body Width X Height Crystals (2 leads) DIP + Pin Column S Pin Rows Body Length X Body Width X Height Crystals (2 leads) DIP + Pin Column S Pin Rows Body Length X Body Width X Height Diodes, Molded DIP + Body Length + Body Length + Body Width X Height Diodes, Chip. Diodes, Molded DIP + Body Length + Body Length + Body Width X Height Diodes, MELF DIOMELF + Body Length + Body Width X Height Diodes, MELF DIOMELF + Body Length + Body Width X Height Diodes, MELF DIOMELF + Body Length + Body Width X Height Inductors, Molded PISSAN + Body Length + Body Width X Height Inductors, Molded PISSAN + Body Length + Body Width X Height Inductors, Molded PISSAN + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Molded INDP + Body Length + Body Width X Height Inductors, Chip, Array, Flat LEDSA + Body Length X Body Width X Height Inductors, Chip, Array, Flat LEDSA + Body Length X Body Width X Height Inducto		
Capacitors, Chip, Wire Rectangle Capacitors, Molded, Non-polarized. CAPM + Body Length + Body Width X Height Capacitors, Molded, Polarized. CAPM + Body Length + Body Width X Height Capacitors, Molded, Polarized. CAPM + Body Length + Body Width X Height Ceramic Flat Packages. CAPAE + Base Body Size X Height Ceramic Flat Packages. CGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Column Grid Array, Square Lead. CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Column Grid Array, Square Lead. CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Column Grid Array, Square Lead. CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Duali-n-Line Packages (Butt Mount). DIP + Britch P + Lead Span Nominal X Height - Pin Qty Diodes, Chip. Diodes, Chip. Diodes, Chip. Diodes, Chip. Diodes, Chip. Diodes, Chip. Diodes, MELE DIOMELF + Body Length + Body Width X Height Diodes, Side Concave, 2 Pin. Diodes, Mile Pin Quit M Body Length + Body Width X Height Inductors, Chip. NiDC + Body Length + Body Width X Height Inductors, Chip. NiDC + Body Length + Body Width X Height Inductors, Pin Length + Body Length + Body Width X Height Inductors, Pin Length + Body Length + Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length + Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length X Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length X Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length X Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length X Body Width X Height Inductors, Chip. Array, Concave. NiDCAH + Pitch P + Body Length X Body Width X Height Inductors, Chip. Array,		
Capacitors, Moided, Non-polarized. CAPM + Body Length + Body Width X Height Capacitors, Aluminum Electrolytic CAPAE + Base Body Size X Height Capacitors, Aluminum Electrolytic CAPAE + Base Body Size X Height Caramic Flaf Packages. CFP127P + Lead Span Notal X Height - Pin QU Column Grid Array, Circular Lead. CGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height Crystals (2 leads). XTAL + Body Length X Body Width X Height Crystals (2 leads). XTAL + Body Length X Body Width X Height Crystals (2 leads). DIP + Pitch P + Lead Span Notal X Height - Pin Qty Dual Flat No-lead. DFH + Body Length X Body Width X Height Diodes, Moided. DFH + Body Length X Body Width X Height Diodes, Moided. DIOM + Body Length + Body Width X Height Diodes, Moided. DIOMELF + Body Length + Body Width X Height Diodes, Moided. DIOMELF + Body Length + Body Width X Height Diodes, Side Concave, 2 Pin. DIOS - Body Length + Body Width X Height Inductors, Chip. DIOS - Body Length + Body Width X Height Inductors, Chip. DIOS - Body Length + Body Width X Height Inductors, Chip. NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Chip. NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length + Body Width X Height Inductors, Presision Wire Wound NDCAY + Pitch P - INDP + Body Length +		
Capacitors, Molded, Polarizad. Capacitors, Mulmium Electrolytic Column Grid Array, Circular Lead CGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Column Grid Array, Square Lead CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Column Grid Array, Square Lead CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows DIP Pitch P + Lead Span Nominal X Height - Pin Qty Diodes, Chip DIP Pitch P + Lead Span Nominal X Height - Pin Qty Diodes, Chip DIOC + Body Length X Body Width X Height Diodes, Moled DIOC + Body Length B Body Width X Height Diodes, Moled DIOC + Body Length B Body Width X Height Diodes, Side Concave, 2 Pin Diodes, Moled INDE + Body Length + Body Width X Height Inductors, Chip Inductors, Molded INDE + Body Length + Body Width X Height Inductors, Chip Inductors, Chip, Array, Concave INDEAP + Pin Chy Length + Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length + Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length + Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length + Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Body Width X Height Inductors, Chip, Array, Concave INDEAP + Pin Chy Length X Bod		
Capaciors, Aluminum Electrolytic Camel Fial Packages CFP127P+ Lead Span Normal X Height - Pin Qiv Column Grid Array, Circular Lead CGA + Pin Qiv + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Crystals (2 leads). XTAL + Body Length X Body Width X Height Crystals (2 leads). DIP + Pitch P + Lead Span Norminal X Height - Pin Qiv Dual Fial No-lead. DIP + Body Length X Body Width X Height Diodes, Molded. DIOM + Body Length + Body Width X Height Diodes, Molded. DIOMEL + Body Length + Body Width X Height Diodes, Molded. DIOMEL + Body Length + Body Width X Height Diodes, Side Concave, 2 Pin. DIOSC + Body Length + Body Width X Height Inductors, Chip, Min Diodes, Molded. DIOMEL + Body Length + Body Width X Height Inductors, Chip, Min Diodes, Molded. DIOMEL + Body Length + Body Width X Height Inductors, Chip, Min Diodes, Molded. FUSIN + Body Length + Body Width X Height Inductors, Chip, Min Diodes, Molded. Nin Diodes, Molded. N	Capacitors, Moldad, Delarized	
Ceramic Flat Packages. CGA + Pin Qty + C + Pitch P + Pic Columns X Pin Rows Body Length X Body Width X Height Column Grid Array, Circular Lead. CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Column Grid Array, Square Lead. CGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Dualin-Line Packages (Butt Mount). DIP + Rich P + Lead Span Nominal X Height - Pin Qty Diodes, Chip DFN + Body Length X Body Width X Height - Pin Qty Diodes, Chip DFN + Body Length + Body Width X Height - Pin Qty Diodes, Chip DIOM + Body Length + Body Width X Height - Pin Qty Diodes, Melce DIOM + Body Length + Body Width X Height Pin Qty Brasses, Molded. DIOM + Body Length + Body Width X Height Holductors, Chip Diodes, MELF DIOMELF + Body Length + Body Width X Height Holductors, Molded. DIOM + Body Length + Body Width X Height Holductors, Molded. FUSM + Body Length + Body Width X Height Holductors, Molded. INDC + Body Length + Body Width X Height Holductors, Molded. INDC + Body Length + Body Width X Height Holductors, Mided - In MDF + Body Length + Body Width X Height Holductors, Chip, Array, Concave In MDF + Body Length + Body Width X Height Holductors, Chip, Array, Concave In MDF + Body Length + Body Length + Body Width X Height Holductors, Chip, Array, Concave In MDF + Pin Qty - Pin Qty - C+ Pitch P + Pin Columns X Pin Rows Body Length x Body Width X Height Land Grid Array, Square Lead. LGA + Pin Qty - C+ Pitch P + Pin Columns X Pin Rows Body Length x Body Width X Height Land Grid Array, Square Lead. LGA + Pin Qty - C+ Pitch P + Pin Columns X Pin Rows Body Length x Body Width X Height Land Grid Array, Rectangle Lead. LGA + Pin Qty + R + Pitch P + Pin Columns X Pin Rows Body Length x Body Width X Height Land Grid Array, Square Lead. LGA + Pin Qty + R + Pitch P + Pin Columns X Pin Rows Body Length x Body Width X Height LED's Midded A Length S Body Width X Height Pin Qty Solidators, Lead Span Land A Height Pin Qty Solidators, Lead Span Land A Height		
Column Grid Array, Circular Lead	Capacitors, Aluminum Electrolytic	CAPAE + Base Body Size X Height
Column Grid Array, Square Lead	Ceramic Flat Packages	CFP127P + Lead Span Nominal X Height - Pin Qty
Crystals (2 leads).		
DIP + Pitch P + Lead Span Nominal X Height - Pin Qty Dual Flat No-lead	Column Grid Array, Square LeadCGA + Pin Qty +	S + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height
DIP + Pitch P + Lead Span Nominal X Height - Pin Qty Dual Flat No-lead	Crystals (2 leads)	XTAL + Body Length X Body Width X Height
DEN + Body Length X Body Wirdth X Height - Pin Cty Diodes, Chip Diodes, Molded DiOM + Body Length + Body Wirdth X Height Diodes, MELF DioMes, Elf - Body Length + Body Wirdth X Height Diodes, MELF DiOMES, Side Concave, 2 Pin. PUSSH, Body Length + Body Length + Body Diameter Diodes, Side Concave, 2 Pin. PUSSH, Body Length + Body Length + Body Diameter Diodes, Side Concave, 2 Pin. PUSSH, Body Length + Body Wirdth X Height Inductors, Chip. INDC + Body Length + Body Wirdth X Height Inductors, Chip. INDC + Body Length + Body Wirdth X Height Inductors, Chip. INDC + Body Length + Body Wirdth X Height Inductors, Chip, Array, Concave. INDC + Body Length + Body Wirdth X Height Inductors, Chip, Array, Concave. INDC + Body Length + Body Wirdth X Height Inductors, Chip, Array, Filat. INDC + Body Length + Body Wirdth X Height Inductors, Chip, Array, Filat. Inductors, Chip, Array, Filat. Inductors, Chip, Array, Concave. INDCAP + Pitch P + Body Length X Body Wirdth X Height Inductors, Chip, Array, Concave. INDCAP + Pitch P + Body Length X Body Wirdth X Height Lend Grid Array, Square Lead. LGA + Pin Cly + C + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Wirdth X Height LED's, Molded LED's, Molded Lead. LGA + Pin Cly + R + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Wirdth X Height LED's, Side Concave, 2 Pin LED's, Side Concave, 3 Pin Rows _ Body Length X Body Wirdth X Height - Pin City Oscillators, Side Concave, 4 Pin _ LED's, Pitch P + Body Length X Body Wirdth X Height - Pin City Oscillators, Side Concave, 4 Pin _ LED's, Pitch P + Body Length X Body Wirdth X Height - Pin City Oscillators, Side Concave, 4 Pin _ LED's, Pitch P + Body Length X Body Wirdth X Height - Pin City Oscillators, Lead		
Diodes, Chip. Diodes Molded DIOM Hack Body Length Hacky Width X Height Diodes, MELF DIOMELF + Body Length + Body Width X Height Diodes, MELF DIOMS C Hack Concave, 2 Pin. PUSSC + Body Length + Body Width X Height Pin Qty Fuses, Molded Inductors, Chip. INDC + Body Length + Body Width X Height Inductors, Molded Inductors, Molded INDM + Body Length + Body Width X Height Inductors, Molded INDM + Body Length + Body Width X Height Inductors, Pression Wire Wound INDM + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDC + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDC + Pitch P + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDC + Pitch P + Body Length x Body Width X Height Pin Qty Inductors, Chip, Array, Circular Lead LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Land Grid Array, Circular Lead LGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height LED's, Molded LED's, Side Concave, 2 Pin LED's, Side Concave, 2 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 5 Pinch P + Body Length X Body Width X Height - Pin Qty Cocillators, Lend		
DIOM + Body Length + Body Width X Height Plodes, Side Concave, 2 Pin. DIOMES, Side Concave, 2 Pin. DIOSC + Body Length x Body Width X Height - Pin Qty Fuses, Middled FUSM + Body Length + Body Width X Height - Pin Qty Fuses, Middled INDM + Body Length + Body Width X Height - Pin Qty Fuses, Middled INDM + Body Length + Body Width X Height - Pin Qty Houtors, Chip. INDC + Body Length + Body Width X Height - Pin Qty Inductors, Origin, Array, Grocave INDD + Body Length + Body Width X Height - Pin Qty Inductors, Chip, Array, Concave INDD + Body Length + Body Width X Height - Pin Qty Inductors, Chip, Array, Concave INDD + Body Length + Body Width X Height - Pin Qty Inductors, Chip, Array, Gruare Lead. LGA + Pin Qty + Pitch P + Body Length X Body Width X Height - Pin Qty Land Grid Array, Square Lead. LGA + Pin Qty + R + Pinc Columns X Pin Rows - Body Length X Body Width X Height - Pin Qty Land Grid Array, Square Lead. LGA + Pin Qty + R + Pinc Columns X Pin Rows - Body Length X Body Width X Height - LED's, Middled - LED's, Middled - LED's, Middled - LED's, Middled - LED's, Side Concave, 2 Pin LeD's, Side Concave, 3 Pin Rows - Body Length X Body Width X Height - Pin Qty Scillators, Side Concave, 4 Pin LED's, Hide Concave, 4 Pin LED's, Hide Phic Phic Phic Phic Phic Phic Phic Phic		
DiOSC + Body Length + Body Diameter Diodes, Side Concave, 2 Pin. DIOSC + Body Length + Body Width X Height + Dio FUSM + Body Length + Body Width X Height + Dio fuductors, Chip. INDC + Body Length + Body Width X Height Inductors, Chip. INDM + Body Length + Body Width X Height Inductors, Molded INDM + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDCAY + Pitch P + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDCAY + Pitch P + Body Length X Body Width X Height Pin Qty Inductors, Chip, Array, Concave. INDCAY + Pitch P + Body Length X Body Width X Height - Pin Qty Inductors, Chip, Array, Flat. LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height - Pin Qty Inductors, Chip, Array, Circular Lead. LGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 2 Pin LEDS + Pin Columns X Pin Rows. Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's - Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin Length - Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's - Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's - Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's - Pitch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's - Pitch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LED's - Pitch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin Lend - Good - Pitch P + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin Lend - Good - Good - Good - Good - Good - Good - Pitch P + Body Length X Body Width X Height - Pin Qty Docalitators, Lend - Good		
DioSC + Body Length X Body Width X Height - Pin Cty Fuses, Middled FUSM + Body Length + Body Width X Height - Pin Cty Fuses, Middled FUSM + Body Length + Body Width X Height Inductors, Chip, INDC + Body Length + Body Width X Height Inductors, Molded INDM + Body Length + Body Width X Height Inductors, Chip, Array, Concave INDCAY + Pitch P + Body Length + Body Width X Height Inductors, Chip, Array, Concave INDCAY + Pitch P + Body Length X Body Width X Height - Pin Cty Land Grid Array, Couraca LGA + Pin Cly + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height - Pin Cty Land Grid Array, Square Lead LGA + Pin Cly + S + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height - LED's, Midled LGA + Pin Cly + R + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height - LED's, Midled LED's, Side Concave, 2 Pin LED's, Side Concave, 2 Pin LED's, Side Concave, 4 Pin LED's, Side Concave, 4 Pin LED's, Pin Cly + R + Pin Cly + R + Body Length X Body Width X Height - Pin Cly Scillators, Side Concave Pin LED's, Fin P + Body Length X Body Width X Height - Pin Cly Coscillators, J-Lead OSCSC + Pitch P + Body Length X Body Width X Height - Pin Cly Scillators, Lead Concave		
Fuss, Molded Fuss,		
INDC + Body Length + Body Width X Height Inductors, Nolded. INDP + Body Length + Body Width X Height Inductors, Precision Wire Wound INDP + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDCAV + Pitch P + Body Length X Body Width X Height Inductors, Chip, Array, Concave. INDCAV + Pitch P + Body Length X Body Width X Height - Pin Qty Inductors, Chip, Array, Flat. LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height - Pin Qty Land Grid Array, Square Lead. LGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height Land Grid Array, Square Lead. LGA + Pin Qty + S + Pitch P + Pin Columns X Pin Rows. Body Length X Body Width X Height LED's, Molded. LED's, Molded. LED's, Molded. LED's, Molded. LED's, Side Concave, 2 Pin. LEDSC + Body Length X Body Width X Height - Pin Qty Length X Body Width X Height - Pin Qty Length X Body Width X Height - Pin Qty Length X Body Width X Height - Pin Qty Length X Body Width X Height - Pin Qty Scillators, Side Concave, 4 Pin. LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty Scillators, Side Concave, 4 Pin. LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty Scillators, 5 Lead. OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qty Scillators, 5 Lead. OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qty Scillators, Corner Concave. OSCC + Pitch P + Body Length X Body Width X Height - Pin Qty Scillators, Corner Concave. OSCC + Pitch P + Body Length X Body Width X Height - Pin Qty Plastic Leaded Chip Carrier's Sockets Square. PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier's Sockets Square. PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Cara Fill A Resides. QPP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Cara Fill A Resides. QPP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Cara Fill A Resides. QPP + Pitch P + Lead Span L1 X		
INDM + Body Length + Body Width X Height Inductors, Chip, Array, Concave		
INDP + Body Length + Body Width X Height Inductors, Chip, Array, Concave. INDCAV + Pitch P + Body Length X Body Width X Height - Pin Qty Land Grid Array, Circular Lead. LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height - Pin Qty Land Grid Array, Square Lead. LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Land Grid Array, Rectangle Lead. LGA + Pin Qty + R + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height Land Grid Array, Rectangle Lead. LGA + Pin Qty + R + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height LED's, Molded. LEDM + Body Length X Body Width X Height LED's, Side Concave, 2 Pin LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty Length's Side Concave, 2 Pin . LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, J-Lead. OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, J-Lead. OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, L-Bend Lead. OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave. OSCCC + Body Length X Body Width X Height - Pin Qty Oscillators, L-Bend Lead. OSCL + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carriers. PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages. QEP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages. QEP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages. QEP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QEN + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QEN + Pitch P + Body Width X Body Length X Height - Pin Qty Carriers. LCC + Pitch P + Body Width X Body Length X Height - Pin Qty Pitch P + Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QEN + Pitch P + Body Width X Body Length X		
INDCAV + Pitch P + Body Length X Body Width X Height - Pin Cry Land Grid Array, Circular Lead	Inductors, Molded	INDM + Body Length + Body Width X Height
INDCAV + Pitch P + Body Length X Body Width X Height - Pin Cry Land Grid Array, Circular Lead	Inductors, Precision Wire Wound	INDP + Body Length + Body Width X Height
INDCAF + Pitch P + Body Length X Body Width X Height - Pin Qty Land Grid Array, Circular Lead		
Land Grid Array, Circular Lead. LGA + Pin Qty + C + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height Land Grid Array, Rectangle Lead. LGA + Pin Qty + R + Pitch P + Pin Columns X Pin Rows Body Length X Body Width X Height LED's, Molded LED's, Molded LED's, Molded LED's, Molded LED's, Molded LED's, Molded LED's, Side Concave, 2 Pin LEDSC + Pitch P + Body Length X Body Width X Height LED's, Side Concave, 4 Pin LED'S, Side Concave, 4 P		
Land Grid Array, Square Lead	Land Grid Array Circular Load LGA + Pip Oty +	C + Ditch D + Din Columns Y Din Dows Rody Longth Y Rody Width Y Hoight
Land Grid Array, Rectangle Lead		
LEDNs, Molded LEDSC, Side Concave, 2 Pin LEDSC Side Concave, 2 Pin LEDSC Pitch P + Body Length X Body Width X Height - Pin Qty Dscillators, Side Concave OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Side Concave OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, J-Lead. OSCJ + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, L-Bend Lead. OSCJ + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave. OSCC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave. PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square. PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square. PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square. PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Ceramic Quad Flat No-lead. QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QFP + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Quad Leadless Ceramic Chip Carriers. LCC + Pitch P + Body Width X Body Length X Height - Pin Qty Quad Leadless Ceramic Chip Carriers (Pin 1 on Side). LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip, Array, Concave. RESCAF + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Concave. RESCAF + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size). RESCAF + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size). RESCAF + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, S-Version (Side Pins Diff). RESCAF + Pitch P + Body Length X Body Width		
LEDSC + Body Length X Body Width X Height - Pin Qty LED's, Side Concave, 4 Pin LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Side Concave	Land Grid Array, Rectangle LeadLGA + Pin Qty +	R + Pitch P + Pin Columns X Pin Rows _ Body Length X Body Width X Height
LEDS, Side Concave, 4 Pin. OSCISC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, J-Lead. OSCJ + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, L-Bend Lead. OSCJ + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave. OSCC + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave. OSCC + Pitch P + Body Length X Body Width X Height Pin Qty Oscillators, Corner Concave. OSCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square. PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Caramic Quad Flat Packages. QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Caramic Quad Flat Packages. QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Caramic Quad Flat No-lead. QFN + Pitch P + Body Width X Body Length X Height - Pin Qty Plul-back Quad Flat No-lead. QFN + Pitch P + Body Width X Body Length X Height - Pin Qty Plul-back Quad Leadless Ceramic Chip Carriers. LCC + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip Carriers (Pin 1 on Side). LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip, Array, Concave. RESM + Body Length + Body Width X Height Plastions, MELF Resistors, MELF Resistors, MELF Resistors, MELF Resistors, MELF Resistors, MELF Resistors, Chip, Array, Convex, E-Version (Even Pin Size) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Side Pins Diff) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Versio		
OSCILators, Side Concave OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qt Oscillators, J-Lead		
OSCIJ + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, L-Bend Lead OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Oscillators, Corner Concave OSCCC + Body Length X Body Width X Height - Pin Qty Plastic Leaded Chip Carriers PLCC + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Plastic Leaded Chip Carrier Sockets Square PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Ceramic Quad Flat Packages QFN + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead QFN + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Quad Leadless Ceramic Chip Carriers PQFN + Pitch P + Body Width X Body Length X Height - Pin Qty Quad Leadless Ceramic Chip Carriers (Pin 1 on Side) LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Quad Leadless Ceramic Chip Carriers (Pin 1 on Side) RESM + Body Length X Body Width X Height Resistors, Molded RESM + Body Length + Body Width X Height Resistors, Molded RESM + Body Length + Body Width X Height Resistors, Chip, Array, Concave RESMLF + Body Length + Body Width X Height Pin Qty Resistors, Chip, Array, Concave RESCAY + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat Rescard	LED's, Side Concave, 4 Pin	LEDSC + Pitch P + Body Length X Body Width X Height - Pin Qty
OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Plastic Leaded Chip Carriers	Oscillators, Side Concave	OSCSC + Pitch P + Body Length X Body Width X Height - Pin Qt
OSCL + Pitch P + Body Length X Body Width X Height - Pin Qty Plastic Leaded Chip Carriers	Oscillators, J-Lead	OSCJ + Pitch P + Body Length X Body Width X Height - Pin Qty
OsciC + Body Length X Body Width X Height Plastic Leaded Chip Carriers		
Plastic Leaded Chip Carriers		
Plastic Leaded Chip Carrier Sockets Square. PLCCS + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages. QFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat Packages. CQFP + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QRFN + Pitch P + Lead Span L1 X Lead Span L2 Nominal X Height - Pin Qty Quad Flat No-lead. QFN + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Quad Flat No-lead. PQFN + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Quad Leadless Ceramic Chip Carriers (Pin 1 on Side). LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Quad Leadless Ceramic Chip Carriers (Pin 1 on Side). LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip. RESC + Body Length + Body Width X Height Pin Qty Resistors, Chip, Array, Concave. RESCAS + Pitch P + Body Length X Body Width X Height Pin Qty Resistors, Chip, Array, Concave. RESCAY + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size). RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat Lead. SODFL + Lead Span Nominal X Height - Pin Qty Small Outline Diodes, Flat Lead. SODFL + Lead Span Nominal X Height - Pin Qty Small Outline Ro-lead. SODF + Lead Span Nominal X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty Floral Pockages Son + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty Floral Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty Thermal Pad Small Outline No-lead. SON + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Lead Span Nominal X Height - Pin Qty Thermal Pad Small Outline No-lead. SON + Pitch		
Quad Flat Packages		
Ceramic Quad Flat Packages		
Qad Flat No-lead		
PQFN + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Quad Leadless Ceramic Chip Carriers. LCC + Pitch P + Body Width X Body Length X Height - Pin Qty Quad Leadless Ceramic Chip Carriers (Pin 1 on Side). LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip RESC + Body Length + Body Width X Height Resistors, Molded. RESM + Body Length + Body Width X Height Resistors, Molded. RESM + Body Length + Body Width X Height Resistors, Chip, Array, Concave. RESMELF + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size). RESCAV + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, S-Version (Side Pins Diff). RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, S-Version (Side Pins Diff). RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAYE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat Lead. SOFL + Lead Span Nominal + Body Width X Height - Pin Qty Small Outline Diodes, Flat Lead. SOJFL + Lead Span Nominal X Height - Pin Qty Small Outline Packages. SOJ + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline Packages. SOP + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Small Outline No-lead. SON + Pitch P + Lead Span Nominal X Height - Pin Qty + Thermal Pad Small Outline No-lead. SON + Pitch P + Lead Span Nominal X Height - Pin Qty + Thermal Pad Son X + Pitch P + Lead Span Nominal X Height - Pin Qty Son X + Pitch P + Lead Span Nominal X Height		
Quad Leadless Ceramic Chip Carriers		
Quad Leadless Ceramic Chip Carriers (Pin 1 on Side) RESC + Pitch P + Body Width X Body Length X Height - Pin Qty Resistors, Chip. RESC + Body Length + Body Width X Height Resistors, Molded RESM + Body Length + Body Width X Height Resistors, Molded Resistors, Chip, Array, Concave RESCAV + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Flat. RESCAXE + Pitch P + Body Length X Body Width X Height - Pin Qty Small Outline Ic, J-Leaded. SODFL + Lead Span Nominal X Height - Pin Qty Small Outline Integrated Circuit, (50 mil Pitch SOIC). SOIC127P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead. SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead. SON + Pitch P + Lead Span Nominal X Height - Pin Qty SOIT43 & SOIT343 Reverse (JEDEC Standard Package) SOIT43 & SOIT43 & SOIT43 Reverse (JEDEC Standard Package) SOIT43 & SOIT43 Reverse (JEDEC Standard Package) SOIT43 & SOIT43 Packages (Example: SOIT230P700X180-4)		
Resistors, Chip	Quad Leadless Ceramic Chip Carriers	LCC + Pitch P + Body Width X Body Length X Height - Pin Qty
Resistors, Chip	Quad Leadless Ceramic Chip Carriers (Pin 1 on Side)	LCCS + Pitch P + Body Width X Body Length X Height - Pin Qty
Resistors, Molded		
Resistors, MELF Resistors, Chip, Array, Concave Resistors, Chip, Array, Convex, E-Version (Even Pin Size) Resistors, Chip, Array, Convex, E-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Flat Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Convex, S-Version (Even Pin Qty Resistors, Chip, Array, Convex, S-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Even Pin Qty Resistors, Chip, Array, Convex, S-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Even Pin Qty Resistors, Chip, Array, Convex, S-Version (Even Pin Qty Resistors, Chip, Array, Convex, S-Version (Even Pin Qty Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Convex, S-Version (Side Pins Dift) Resistors, Chip, Area, Pitch P + Body Length X Body Width X Height - Pin Qty Small Outline Diodes, Flat Lead Solf-127P + Lead Span Nominal X Height - Pin Qty Solf-128P + Pitch P + Lead Span Nominal X Height - Pin Qty Solf-128P + Pitch P + Lead Span Nominal X Height - Pin Qty Solf-128P + Pitch P + Lead Span Nominal X Height - Pin Qty Solf-128P + Pitch P + Lead Span Nominal X Height - Pin Qty Solf-128		
RESCAV + Pitch P + Body Length X Body Width X Height - Pin Qty Resistors, Chip, Array, Convex, E-Version (Even Pin Size)		
Resistors, Chip, Array, Convex, E-Version (Even Pin Size) Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Convex, S-Version (Side Pins Diff) Resistors, Chip, Array, Flat		
Resistors, Chip, Array, Convex, S-Version (Side Pins Diff)		
Resistors, Chip, Array, Flat		
Small Outline Diodes, Flat Lead		
Small Outline IC, J-Leaded		
Small Outline Integrated Circuit, (50 mil Pitch SOIC) Small Outline Packages SOP + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead PSON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Small Outline Transistors, Flat Lead South Pson + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Small Outline Transistors, Flat Lead South Pson + Pitch P + Lead Span Nominal X Height - Pin Qty SOD (Example: SOD3717X135 = JEDEC SOD123) South Pson + Pitch P + Lead Span Nominal + Body Width X Height South		
Small Outline Packages SOP + Pitch P + Lead Span Nominal X Height - Pin Qty Small Outline No-lead SON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Pull-back Small Outline No-lead PSON + Pitch P + Body Width X Body Length X Height - Pin Qty + Thermal Pad Small Outline Transistors, Flat Lead SOTEL + Pitch P + Lead Span Nominal X Height - Pin Qty SOD (Example: SOD3717X135 = JEDEC SOD123) SOD + Lead Span Nominal + Body Width X Height SOT89 (JEDEC Standard Package) SOT143 & SOT343 (JEDEC Standard Package) SOT143 & SOT343 Reverse (JEDEC Standard Package) SOT143 & SOT343 Reverse (JEDEC Standard Package) SOT143 & SOT23 & SOT223 Packages (Example: SOT230P700X180-4) SOT + Pitch P + Lead Span Nominal X Height - Pin Qty		
Small Outline No-lead		
Small Outline No-lead	Small Outline Packages	SOP + Pitch P + Lead Span Nominal X Height - Pin Qty
Pull-back Small Outline No-lead	Small Outline No-lead	SON + Pitch P + Body Width X Body Lenath X Height - Pin Qtv + Thermal Pad
Small Outline Transistors, Flat Lead	Pull-back Small Outline No-lead PS	SON + Pitch P + Body Width X Body Length X Height - Pin Oty + Thermal Pad
SOD (Example: SOD3717X135 = JEDEC SOD123) SOD + Lead Span Nominal + Body Width X Height SOT89 (JEDEC Standard Package) SOT143 & SOT343 (JEDEC Standard Package) SOT143 & SOT343 Reverse (JEDEC Standard Package) SOT34 Reverse (JEDEC Standard Package) SOT34 Reverse (JEDEC STANDARD STANDAR		
SOT89 (JEDEC Standard Package)	SOD (Evample: SOD3717Y135 - IEDEC SOD132)	SOD + I pad Span Nominal + Rody Width V Haight
SOT143 & SOT343 (JEDEC Standard Package) SOT143 & SOT343 SOT143 & SOT343 Reverse (JEDEC Standard Package) SOT143 & SOT343R SOT23 & SOT223 Packages (Example: SOT230P700X180-4) SOT + Pitch P + Lead Span Nominal X Height - Pin Qty		
SOT143 & SOT343 Reverse (JEDEC Standard Package)		
SOT23 & SOT223 Packages (Example: SOT230P700X180-4)SOT + Pitch P + Lead Span Nominal X Height - Pin Qty		
TO (Generic DPAK - Example: TO228P970X238-3)		
	IO (Generic DPAK - Example: TO228P970X238-3)	TO + Pitch P + Lead Span X Height - Pin Qty

IPC-7351B Land Pattern Naming Convention Notes

- All dimensions are in Metric Units
- All Lead Span and Height numbers go two places past the decimal point and "include" trailing Zeros
- All Lead Span and Body Sizes go two place before the decimal point and "remove" leading Zeros
- All Chip Component Body Sizes are one place to each side of the decimal point
- · Pitch Values are two places to the right & left of decimal point with no leading Zeros but include trailing zeros

Naming Convention Special Character Use for Land Patterns

The _ (underscore) is the separator between pin Qty in Hidden & Deleted pin components

The - (dash) is used to separate the pin qty.

The X (capital letter X) is used instead of the word "by" to separate two numbers such as height X width like "Quad Packages".

IPC-7351B Suffix Naming Convention for Land Patterns

Common SMT Land Pattern to Describe Environment Use (This is the last character in every name)
Note: This excludes the BGA component family as they only come in the Nominal Environment Condition

- M Most Material Condition (Level A)
- N...... Nominal Material Condition (Level B)
- L.....Least Material Condition (Level C)

Alternate Components that do not follow the JEDEC, EIA or IEC Standard

- A................ Alternate Component (used primarily for SOP & QFP when Component Tolerance or Height is different)
- B..... Second Alternate Component

Reverse Pin Order

• -20RN........ 20 pin part, Reverse Pin Order, Nominal Environment

Hidden Pins

• -20_24N 20 pin part in a 24 pin package. The pins are numbered 1 – 24 the hidden pins are skipped. The schematic symbol displays up to 24 pins.

Deleted Pins

• -24_20N 20 pin part in a 24 pin package. The pins are numbered 1 – 20. The schematic symbol displays 20 pins.

JEDEC and EIA Standard parts that have several alternate packages

AA, AB, AC. JEDEC or EIA Component Identifier

GENERAL SUFFIXES

_HS.....HS = Land Pattern with Heat Sink attachment requiring additional holes or pads

Example: TO254P1055X160_HS-6N

_BECBEC = Base, Emitter and Collector (Pin assignments used for three pin Transistors)

Example: SOT95P280X160 BEC-3N

_SGD.....SGD = Source, Gate and Drain (Pin assignments used for three pin Transistors)

Example: SOT95P280X160 SGD-3N

213......213 = Alternate pin assignments used for three pin Transistors

Example: SOT95P280X160_213-3N

Mentor Graphics Naming Convention for Non-Standard SMT Land Patterns

Surface Mount Land Patterns

Component, Category Land Pattern Name

Amplifiers	AMP Mfr 's Part Number
Batteries	
Capacitors, Variable	
Capacitors, Chip, Array, Concave (Pins on 2 or 4 sides)	CAPCAV Mfr Series No Pin Qtv
Capacitors, Chip, Array, Flat (Pins on 2 sides)	CAPCAF Mfr Series No Pin Qtv
Capacitors, Miscellaneous	
Crystals	XTAL Mfr.'s Part Number
Diodes, Miscellaneous	
Diodes, Bridge Rectifiers	
Ferrite Beads	
Fiducials	
Filters	
Fuses	
Fuse, Resettable	
Inductors, Miscellaneous	IND_Mfr.'s Part Number
Inductors, Chip, Array, Concave (Pins on 2 or 4 sides)	INDCAV_Mfr Series No Pin Qty
Inductors, Chip, Array, Flat (Pins on 2 sides)	INDCAF_Mfr Series No Pin Qty
Keypad	
LEDS	
LEDS, Chip	
Liquid Crystal Display	
Microphones	MIC_Mfr.'s Part Number
Opto Isolators	OPTO_Mfr.'s Part Number
Oscillators	OSC_Mfr.'s Part Number - Pin Qty
Quad Flat Packages w/Bumper Corners, Pin 1 Side BQFP + Pitch P + Lea	
Quad Flat Packages w/Bumper Corners, 1 CenterBQFPC + Pitch P + Lea	
Resistors, Chip, Array, Concave (Pins on 2 or 4 sides)	
Resistors, Chip, Array, Convex Type E (Pins on 2 sides)	RESCAXE_Mfr Series No Pin Qty
Resistors, Chip, Array, Convex Type S (Pins on 2 sides)	RESCAXS_Mfr Series No Pin Qty
Resistors, Chip, Array, Flat (Pins on 2 sides)	RESCAF_Mfr Series No Pin Qty
Relays	RELAY_Mfr.'s Part Number
Speakers	
Switches	
Test Points, Round TP + Pad Size (1 place left of decimal and 2	places right of decimal, Example TP100 = 1.00mm)
Test Points, Square	1 place left of decimal and 2 places right of decimal)
Test Points, Rectangle TP + Pad Length X Pad Width (
Thermistors	
Transceivers	
Transducers (IRDA's)	
Transient Voltage Suppressors	TVS_Mfr.'s Part Number
Transient Voltage Suppressors, Polarized	IVSP_Mfr.'s Part Number
Transistor Outlines, Custom	
Transformers	
Trimmers & Potentiometers	
Tuners	
Varistors	
Voltage Controlled Oscillators	
Voltage Regulators, Custom	VREG_ Mtr.'s Part Number

Note: All dimensions are in Metric Units and all numbers go two places past the decimal point

IPC-7x51 Naming Convention for Connector Land Patterns

<u>Library Name</u> <u>Land Pattern Name</u>

CONNECTORS (Miscellaneous Connector Libraries) AGILENT™......AGILENT_Part Number AMPHENOL™......AMPHENOL_Part Number BERG™......BERG_Part Number BLOCKMASTER ELECTRONICS™......BLOCKMASTER_Part Number E.F. JOHNSON™ JOHNSON Part Number ERNI......ERNI_Part Number FUJITSU™......FUJITSU Part Number JALCO™.....JALCO_Part Number JWT™.....JWT_Part Number KEYSTONE™.....KEYSTONE Part Number KYCON™ KYCON Part Number LEMO™LEMO_Part Number MILL-MAX™ MILL-MAX_Part Number MOLEX™......MOLEX_Part Number PULSE™......PULSE Part Number SAMTEC™ SAMTEC Part Number SIEMENS™SIEMENS_Part Number STEWART™.....STEWART_Part Number SWITCHCRAFT™......SWITCHCRAFT_Part Number YAMAICHI™......YAMAICHI_Part Number

IPC-7351 Surface Mount Land Patterns Sectional Breakdown

IPC-735* Component Family Breakdown:

```
IPC-7351 = IEC 61188-5-1, Generic requirements - Attachment (land/joint) considerations - General Description
IPC-7352 = IEC 61188-5-2, Sectional requirements - Attachment (land/joint) considerations - Discrete Components
IPC-7353 = IEC 61188-5-3, Sectional requirements - Attachment (land/joint) considerations - Gull-Wing leads, two sides (SOP)
IPC-7354 = IEC 61188-5-4, Sectional requirements - Attachment (land/joint) considerations - J leads, two sides (SOJ)
IPC-7355 = IEC 61188-5-5, Sectional requirements - Attachment (land/joint) considerations - Gull-Wing leads, four sides (QFP)
IPC-7356 = IEC 61188-5-6, Sectional requirements - Attachment (land/joint) considerations - J leads, four sides (PLCC)
IPC-7357 = IEC 61188-5-7, Sectional requirements - Attachment (land/joint) considerations - Post leads, two sides (DIP)
IPC-7358 = IEC 61188-5-8, Sectional requirements - Attachment (land/joint) considerations - Area Array Components (BGA)
IPC-7359 = NO IEC Document, Sectional requirements - Attachment (land/joint) considerations - No Lead Components (LCC)
```

IPC-7351 Surface Mount Land Pattern Zero Orientation

- 1) Chip Capacitors, Resistors and Inductors (RES, CAP and IND) Pin 1 (Positive) on Left
- 2) Molded Inductors (INDM), Resistors (RESM), Molded Polarized Capacitors (CAPMP) Pin 1 (Positive) on Left
- 3) Precision Wire-wound Inductors Pin 1 (Positive) on Left
- 4) MELF Diode Pin 1 (Cathode) on Left
- 5) SOD Diodes Pin 1 (Cathode) on Left
- 6) Aluminum Electrolytic Capacitors Pin 1 (Positive) on Left
- 7) SOT Devices (SOT23, SOT23-5, SOT223, SOT89, SOT143, etc.) Pin 1 Upper Left
- 8) TO252 & TO263 (DPAK Type) Devices Pin 1 Upper Left
- 9) Small Outline Gullwing ICs (SOIC, SOP, TSOP, SSOP, TSSOP) Pin 1 Upper Left
- 10) Ceramic Flat Packs (CFP) Pin 1 Upper Left
- 11) Small Outline J Lead ICs (SOJ) Pin 1 Upper Left
- 12) Quad Flat Pack ICs (PQFP, SQFP) Pin 1 Upper Left
- 13) Ceramic Quad Flat Packs (CQFP) Pin 1 Upper Left
- 14) Bumper and Plastic Quad Flat Pack ICs (BQFPC, PQFPC Pin 1 Center) Pin 1 Top Center
- 15) Plastic Leaded Chip Carriers (PLCC) Pin 1 Top Center
- 16) Leadless Chip Carriers (LCC) Pin 1 Top Center
- 17) Leadless Chip Carriers (LCCS Pin 1 on Side) Pin 1 Upper Left
- 18) Quad Flat No-Lead ICs (QFN) QFNS & QFNRV, QFNRH Pin 1 Upper Left
- 19) Ball Grid Arrays (BGA) Pin A1 Upper Left