

Transistors (Selection Guide by Applications and Functions)

■ 5 Pin S Mini Type (D6) • 5 Pin Mini Type (D11) • 6 Pin S Mini Type (D7) • 6 Pin Mini Type (D12) Package Transistor, FET

● Transistors (XN: 5 and 6 Pin Mini Type Package, XP: 5 and 6 Pin S Mini Type Package)

| Application | 5 Pin S Mini Type (D7), 5 Pin Mini Type (D12) | | | | | | | | 6 Pin S Mini Type (D8), 6 Pin Mini Type (D13) | | | | | | | |
|--|---|------------------|------------------|-----------|--------------------|--------------------|------------------|------------------|---|--------------------|------------------|------------------|------------------|---------|------------------|--|
| | | | | | | | | | | | | | | | | |
| General-use | XN1401 XP1401 | XN1501 XP1501 | XN1601 XP1601 | | XN1B301 XP1B301 | XN1C301 XP1C301 | XN2401 XP2401 | XN2501 XP2501 | XN4401 XP4401 | XN4501 XP4501 | XN4601 XP4601 | XN5501 XP5501 | XN5601 XP5601 | | XN6401 XP6401 | |
| | | | | | | | | | XN4402 XP4402 | XN4502 XP4502 | | | | | | |
| | | | | | | | | | XN4482 XP4482 | | | | | | | |
| Low V _{CE(sat)} | | XN1504 XP1504 | | | | | | | XN4404 XP4404 | XN4504 XP4504 | XN4604 XP4604 | | | | | |
| | | | | | | | | | | XN4506 XP4506 | | | | | | |
| General-use + Low V _{CE(sat)} | | | | | | | | | | | XN4608 XP4608 | | | | | |
| | | | | | | | | | | | XN4609 XP4609 | | | | | |
| | | | | | | | | | | △ XN4505 XP4505 | | | | | | |
| High frequency | | XN1531 XP1531 | | | | | | XN2531 XP2531 | | | | XN5531 XP5531 | | | | |
| | | | | | | | | | | | | | | | XN6435 XP6435 | |
| | | | | | | | | | | XN4509 XP4509 | | | | | | |
| Low Noise | | XN1509 XP1509 | | | | | | | | | | | | | | |
| High freq. + General-use | | XN1507 XP1507 | | | | | | | | | XN4683 XP4683 | | | | | |
| High h _{FE} | | | | | | | | | | XN4556 XP4556 | | XN5553 XP5553 | | | | |
| High-speed switching | | △ XP1554 | | △ XP1E554 | | | | | | | XP4654 | | | XP05554 | XP5A554 | |
| | | | | | | | | | | | | △ XP5555 | | | | |

△ Preliminary

● Resistor Built-in Transistors (XN: 5 and 6 Pin Mini Type Package, XP: 5 and 6 Pin S Mini Type Package)

| Application | 5 Pin S Mini Type (D7), 5 Pin Mini Type (D12) | | | | 6 Pin S Mini Type (D8), 6 Pin Mini Type (D13) | | | | | |
|-----------------------|---|----------------------|----------------------|---------|---|----------------------|----------------------|----------------------|----------------------|--|
| | | | | | | | | | | |
| General-use switching | XN1111 XP1111 | XN1211 XP1211 | XN2211 XP2211 | | XN4111 XP4111 | XN4211 XP4211 | XN4311 XP4311 | XN6111 XP6111 | XN6211 XP6211 | |
| | XN1112 XP1112 | XN1212 XP1212 | XN2212 XP2212 | XN1A312 | XN4112 XP4112 | XN4212 XP4212 | XN4312 XP4312 | XN6112 XP6112 | XN6212 XP6212 | |
| | XN1113 XP1113 | XN1213 XP1213 | | | XN4113 XP4113 | XN4213 XP4213 | | XN6113 XP6113 | XN6213 XP6213 | |
| | XN1114 XP1114 | XN1214 XP1214 | | | XN4114 XP4114 | XN4214 XP4214 | XN4314 XP4314 | XN6114 XP6114 | XN6214 XP6214 | |
| | * XN1115 * XP1115 | * XN1215 * XP1215 | * XN2215 * XP2215 | | * XN4115 * XP4115 | * XN4215 * XP4215 | * XN4315 * XP4315 | * XN6115 * XP6115 | * XN6215 * XP6215 | |
| | * XN1116 * XP1116 | * XN1216 * XP1216 | * XN2216 XP2216 | | * XN4116 * XP4116 | * XN4216 * XP4216 | * XN4316 * XP4316 | * XN6116 * XP6116 | * XN6216 * XP6216 | |
| | * XN1117 * XP1117 | * XN1217 * XP1217 | | | | | | | | |
| | XN1118 XP1118 | | | | | | | | | |
| | XN1119 XP1119 | | | | | | | | | |
| | * XN1110 * XP1110 | * XN1210 * XP1210 | * XN2210 * XP2210 | | | * XN4210 * XP4210 | | | XP6210 | |
| | | XN121E XP121E | | | | | | | | |
| | XN111F XP111F | XN121F XP121F | | | | XN421F XP421F | | | | |
| | XN111H XP111H | | | | | | | | | |
| | XN111M | XN121M | | | | | XN431L XP431L | | | |
| | | | | | | XN421N XP421N | | | | |
| | | | | | | | | XN611FH XP611FH | | |
| | | | | | | | XN4322 XP4322 | | | |
| | XN1101 XP1101 | XN1201 XP1201 | | | | | | | | |
| | | | | | | * XN4130 XP4130 | | | | |
| | | | | | | | XN4381 XP4381 | | | |
| | | | | | | XP0431N | | | | |

Transistors (Selection Guide by Applications and Functions)

● Transistors

| 6 Pin S Mini Type (D8), 6 Pin Mini Type (D13) | | | Main Characteristics | | | | | | | | | | | Basic Type | | |
|---|--------|----------|-------------------------|-------------------------|-----------------------|------------------------|--------------------------|-----------------------------------|------------------------|------------------------|---------------------------------|------------------------|-----------------------|------------------------|-----------|-----------------|
| NPN ×2 | NPN ×2 | PNP +NPN | V _{CB0} (V) | V _{CEO} (V) | I _C (A) | h _{FE} | | V _{CE} (sat) typ. (V) | | | f _T typ. (MHz) | f _T typ. | | PNP | NPN | |
| | | | | | | V _{CE} (V) | I _C (mA) | I _C (A) | I _B (mA) | V _{CB} (V) | | I _E (mA) | | | | |
| XN6501 | | | ±60 | ±50 | ±0.1 | 160 ~460 | ±10 | ±2 | ±0.3 | ±0.1 | ±10 | 80/150 | -10/10 | 1/-2 | B709A | D601A |
| XP6501 | | | ±60 | ±50 | ±0.5 | 85 ~340 | ±10 | ±150 | ±0.35 | ±0.3 | ±30 | 200 | -10/10 | -50/50 | B710A | D602A |
| | | | 25 | 20 | 0.5 | 65 ~350 | 2 | 500 | 0.2 | 0.5 | 20 | 150 | 10 | -50 | | |
| | | | -60 | -50 | -0.1/ -0.5 | 160 ~460/ 85 ~340 | -10 | -2/ -150 | -0.3/ -0.35 | -0.1/ -0.3 | -10/ -30 | 80/200 | -10 | 1 | B709/B710 | |
| | | XN7651 | -15/25 | -10/20 | -0.5/0.5 | 100 ~350/ 200 ~800 | -2/2 | -500/ 500 | -0.16/0.13 | -0.4/ 0.5 | -80/ 20 | 130/200 | -10/10 | 50/ -50 | B970 | D1328 |
| | | | 50 | 20 | 0.3 | 500 ~2500 | 2 | 4 | <0.1 | 0.03 | 3 | 80 | 6 | -4 | | D1938 |
| | | | 50 | 20 | 0.3 | 500 ~2500 | 2 | 4 | 0.1 | 0.03 | 3 | 80 | 6 | -4 | | D1915(F) |
| | | | -15/60 | -10/50 | -0.5/0.1 | 100 ~350/ 160 ~460 | -2/10 | -500/ 2 | -0.16/0.3 | -0.4/ 0.1 | -8/10 | 130/150 | -10/10 | 50/-2 | B970 | D601A |
| | | | -60/25 | -50/20 | -0.1/0.5 | 160 ~460/ 200 ~800 | -10/2 | -2/ 500 | -0.3/0.13 | -0.1/ 0.5 | -10/ 20 | 80/200 | -10/10 | 1/-50 | B709A | D1328 |
| | | | 60/25 | 50/200 | 0.1/0.5 | 160 ~460/ 200 ~800 | 10/2 | 2/500 | 0.3/0.13 | 0.1/0.5 | 10/20 | 150/200 | 10/10 | 2/-50 | | D601A/ D1328 |
| | | | 15 | 10 | 0.05 | 75 ~400 | 4 | 5 | 0.5 | 0.02 | 4 | 1900 | 4 | -5 | | C3130 |
| XN6537 | | | 15 | 12 | 0.03 | 40 ~ | 10 | 10 | - | - | - | 4500 | 10 | -10 | | C3110 |
| | | | -30 | -20 | -0.03 | 50 ~220 | -10 | -1 | -0.1 | -0.01 | -1 | 150 | -10 | 1 | A1022 | |
| XN6534 | | | 30 | 20 | 0.015 | 40 ~260 | 6 | -1 | - | - | - | 650 | 6 | -1 | | C2404 |
| XP6534 | | | 45/30 | 35/20 | 0.05 | 20 ~100/ 25 ~250 | 10 | -10/ -15 | 0.5max/- | 0.02/- | 2/- | 500/1300 | 10 | -10/ -15 | | C4444 C2480 |
| XN6542 | | | 15 | 10 | 0.065 | 50 ~300 | 8 | 20 | - | - | - | 8500 | V _{CE} 8V | I _C 20mA | | C3904 |
| XN6543 | | | 50 | 50 | 0.05 | 200 ~500 | 10 | 2 | 0.3max | 0.01 | 1 | 250 | 10 | -2 | | C4561 |
| | | | 150 | 150 | 0.05 | 90 ~450 | 5 | 10 | 1max | 0.03 | 3 | 150 | 10 | -10 | | D814 |
| | | | -60/30 | -50/20 | -0.1/ 0.015 | 160 ~460/ 40 ~260 | V _{CB} -10/6 | I _E -2/-1 | -0.3/- | -0.1/ - | -10/ - | 80/650 | -10/6 | 1/-1 | B709 | C2404 |
| | | | 100 | 100 | 0.02 | 400 ~2000 | 10 | 2 | 0.05 | 0.01 | 1 | 150 | 10 | -10 | | D1149 |
| | | XN6A554 | -15/40 | -15/40 | -0.05/ 0.1 | 50 ~150/ 60 ~320 | -1/1 | -10/ 10 | -0.1/0.17 | -10/10 | -1/1 | 1500/450 | -10/10 | -10/10 | A1738 | C3757 |
| | | | 40 | 40 | 0.1 | 60 ~200 | 1 | 10 | 0.17 | 10 | 1 | 450 | 10 | 10 | | C3757 |
| | | | 25 | V _{CE} 20 | 0.2 | 40 ~200 | 1 | 10 | 0.17 | 0.001 | 1 | 500 | 10 | 1 | | C4782 |

Resistor Built-in Transistors

| Main Characteristics | | | | | | | Basic Type | | |
|-------------------------|-------------------------|-----------------------|--------------------------|---------------------|---------------------|------------------------|-------------------------|-----------|--------|
| V _{CB0} (V) | V _{CEO} (V) | I _C (A) | h _{FE} (min) | V _{CE} (V) | | R _B (kΩ) | R _{BE} (kΩ) | PNP | NPN |
| | | | | V _{CE} (V) | I _C (mA) | | | | |
| 50 | 50 | 0.1 | 35 ~ | 10 | 5 | 10 | 10 | UN2111 | UN2211 |
| | | | 60 ~ | | | 22 | 22 | UN2112 | UN2212 |
| | | | 80 ~ | | | 47 | 47 | UN2113 | UN2213 |
| | | | 80 ~ | | | 10 | 47 | UN2114 | UN2214 |
| | | | 160 ~ | | | 10 | ∞ | UN2115 | UN2215 |
| | | | 160 ~ | | | 4.7 | ∞ | UN2116 | UN2216 |
| | | | 160 ~ | | | 22 | ∞ | UN2117 | UN2217 |
| | | | 20 ~ | | | 0.51 | 5.1 | UN2118 | UN2218 |
| | | | 30 ~ | | | 1 | 10 | UN2119 | UN2219 |
| | | | 160 ~ | | | 47 | ∞ | UN2110 | UN2210 |
| | | | 60 ~ | | | 47 | 22 | UN211E | UN221E |
| | | | 30 ~ | | | 4.7 | 10 | UN211F | UN221F |
| | | | 30 ~ | | | 2.2 | 10 | UN211H | |
| | | | 20 ~ | | | 4.7 | 4.7 | UN211L | UN221L |
| | | | 80 ~ | | | 2.2 | 47 | UN211M | UN221M |
| | | | 80 ~ | | | 4.7 | 47 | UN211N | UN221N |
| 30 ~ | 4.7/2.2 | 10 | UN211F/H | | | | | | |
| 50 | 50 | 0.5 | 50 ~ | 10 | 100 | 4.7 | 4.7 | UN2122 | UN2222 |
| 40 | 40 | 0.03 | 80 ~ | 10 | 5 | 10 | 500 | UN5101 | UN5201 |
| 15 | 10 | 0.5 | 100 ~350 | 2 | 500 | - | 10 | 2SB970 +R | |
| 50 | 50 | 0.5/0.1 | 50 ~/80 ~ | 10/10 | 100/5 | 4.7/47 | 4.7/47 | UN2122 | UN2213 |
| -50/50 | -50/50 | -0.1/0.1 | 80 ~ | -10/10 | -5/5 | 4.7 | 4.7 | UN211N | UN221N |