

Conversion of TO-105/TO-106 to TO-92 (Continued)

Bipolar

| TO-105/106 | TO-92 | TO-105/106 | TO-92 | TO-105/106 | TO-92 |
|------------|------------|------------|------------|------------|-----------|
| EN2222 | PN2222-18 | 2N3692 | PN3692-18 | 2N4965 | 2N5086-18 |
| EN2369A | PN2369A-18 | 2N3693 | MPS3693-18 | 2N4966 | 2N5209-18 |
| EN2484 | PN2484-18 | 2N3694 | PN3694-18 | 2N4967 | 2N5210-18 |
| 3N2907 | PN2907-18 | 2N4121 | PN4121-18 | 2N4968 | 2N5209-18 |
| EN918 | PN918-18 | 2N4122 | PN4122-18 | 2N4969 | PN2221-18 |
| EN930 | PN930-18 | 2N4140 | PN4140-18 | 2N4970 | PN2222-18 |
| SM3904 | 2N3904-18 | 2N4141 | PN4141-18 | 2N4971 | PN2906-18 |
| SM3906 | 2N3906-18 | 2N4142 | PN4142-18 | 2N4972 | PN2907-18 |
| 2N3563 | PN3563-18 | 2N4143 | PN4143-18 | 2N5127 | PN5127-18 |
| 2N3564 | PN3564-18 | 2N4248 | PN4248-18 | 2N5128 | PN5128-5 |
| 2N3565 | PN3565-18 | 2N4249 | PN4249-18 | 2N5129 | PN5129-18 |
| 2N3566 | PN3566-5 | 2N4250 | PN4250-18 | 2N5130 | PN5130-18 |
| 2N3567 | PN3567-5 | 2N4250A | PN4250A-18 | 2N5131 | PN5131-18 |
| 2N3568 | PN3568-5 | 2N4258 | PN4258-18 | 2N5132 | PN5132-18 |
| 2N3569 | PN3569-5 | 2N4258A | PN4258A-18 | 2N5133 | PN5133-18 |
| 2N3638 | PN3638-5 | 2N4274 | PN4274-18 | 2N5134 | PN5134-18 |
| 2N3638A | PN3638A-5 | 2N4275 | PN4275-18 | 2N5135 | PN5135-18 |
| 2N3639 | PN3639-18 | 2N4354 | PN4354-5 | 2N5136 | PN5136-5 |
| 2N3640 | PN3640-18 | 2N4355 | PN4355-5 | 2N5137 | PN5137-18 |
| 2N3641 | PN3641-5 | 2N4356 | PN4356-5 | 2N5138 | PN5138-18 |
| 2N3642 | PN3642-5 | 2N4916 | PN4916-18 | 2N5139 | PN5139-18 |
| 2N3643 | PN3643-5 | 2N4917 | PN4917-18 | 2N5142 | PN5142-18 |
| 2N3644 | PN3644-5 | 2N4944 | PN2222A-18 | 2N5143 | PN5143-18 |
| 2N3645 | PN3645-5 | 2N4945 | PN2222A-18 | 2N5910 | PN5910-18 |
| 2N3646 | PN3646-18 | 2N4946 | PN2222A-18 | | |
| 2N3691 | PN3691-18 | 2N4964 | MPSA70-18 | | |

FETs

| TO-106 | TO-92 | TO-106 | TO-92 | TO-106 | TO-92 |
|--------|---------|--------|-----------|---------|-----------|
| E100 | J203-18 | E300 | J300-18 | KE4393 | PN4393-18 |
| E101 | J201-18 | E304 | J304-18 | KE4416 | PN4416-18 |
| E102 | J202-18 | E305 | J305-18 | KE4857 | PN4857-18 |
| E103 | J203-18 | E308 | J308-18 | KE4858 | PN4858-18 |
| E108 | J108-18 | E309 | J309-18 | KE4859 | PN4859-18 |
| E109 | J109-18 | E310 | J310-18 | KE4860 | PN4860-18 |
| E110 | J110-18 | E311 | J309-18 | KE4861 | PN4861-18 |
| E111 | J111-18 | E312 | J310-18 | ITE4391 | PN4391-18 |
| E112 | J112-18 | KE3684 | PN3684-18 | ITE4392 | PN4392-18 |
| E113 | J113-18 | KE3685 | PN3685-18 | ITE4393 | PN4393-18 |
| E114 | J114-18 | KE3686 | PN3686-18 | P1086E | P1086-18 |
| E174 | J174-18 | KE3687 | PN3687-18 | P1087E | P1087-18 |
| E175 | J175-18 | KE4091 | PN4091-18 | U1897E | U1897-18 |
| E176 | J176-18 | KE4092 | KE4092-18 | U1898E | U1898-18 |
| E201 | J201-18 | KE4093 | PN4093-18 | U1899E | U1899-18 |
| E202 | J202-18 | KE4220 | PN4220-18 | 2N4302 | PN4302-18 |
| E203 | J203-18 | KE4221 | PN4221-18 | 2N4303 | PN4303-18 |
| E210 | J210-18 | KE4222 | PN4222-18 | 2N4304 | PN4304-18 |
| E211 | J211-18 | KE4223 | PN4223-18 | 2N4342 | PN4342-18 |
| E212 | J212-18 | KE4224 | PN4224-18 | 2N4343 | PN4343-18 |
| E270 | J270-18 | KE4391 | PN4391-18 | 2N4360 | PN4360-18 |
| E271 | J271-18 | KE4392 | PN4392-18 | 2N5033 | PN5033-18 |
| | | | | 2N5163 | PN5163-18 |



GENERAL PURPOSE AMPS AND SWITCHES (Continued)

| Type No. | Case Style | VCBO (V) Min | VCEO (V) Min | VEBO (V) Min | ICBO (nA) @ VCB (V) Max | | hFE @ IC & VCE (V) | | | | VCE(SAT) (V) & VBE(SAT) (V) @ IC (mA) | | | Cob (pF) Max | fT (MHz) @ IC (mA) | | | toff (ns) Max | NF (dB) Max | Test Conditions | Process No. | | | |
|----------|------------|--|-----------------|-----------------|----------------------------|----|--------------------|-----|-----|-----|---------------------------------------|------|-----|-----------------|--------------------|-----|-----|------------------|----------------|-----------------|-------------|-----|------|----|
| | | | | | | | Min | Max | Min | Max | Max | Min | Max | | Min | Max | Min | | | | | Max | | |
| NS3903 | TO-18 | 60 | 40 | 6 | | | 15 | 100 | 1 | 0.2 | 0.65 | 0.85 | 10 | 4 | 250 | 10 | 225 | | 6 | 23 | | | | |
| | | | | | | | 30 | 50 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 50 | 150 | 10 | | | | | | | | | | | | 1 | 0.3 | 0.95 | 50 |
| | | | | | | | 35 | 1 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 20 | 100 | 1 | | | | | | | | | | | | | | | |
| NS3904 | TO-18 | 60 | 40 | 6 | | | 30 | 100 | 1 | 0.2 | 0.65 | 0.85 | 10 | 4 | 300 | 10 | 250 | | 6 | 23 | | | | |
| | | | | | | | 60 | 50 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 100 | 300 | 10 | | | | | | | | | | | | 1 | 0.3 | 0.95 | 50 |
| | | | | | | | 70 | 1 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 40 | 100 | 1 | | | | | | | | | | | | | | | |
| PN3691 | TO-92 (92) | 35 | 20 | 4 | 50 | 15 | 40 | 160 | 10 | 1 | 0.7 | 0.9 | 10 | 3.5 | 200 | 500 | 10 | | | | 23 | | | |
| PN3692 | TO-92 (92) | 35 | 20 | 4 | 50 | 15 | 100 | 400 | 10 | 1 | 0.7 | 0.9 | 10 | 3.5 | 200 | 500 | 10 | | | | 23 | | | |
| ST3904 | TO-92 (92) | 60 | 40 | 6 | | | 40 | 0.1 | 1 | 0.2 | 0.65 | 0.85 | 10 | 4 | 300 | 10 | | 8 | 7 | 23 | | | | |
| | | | | | | | 70 | 1 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 100 | 300 | 10 | | | | | | | | | | | | 1 | | | |
| | | | | | | | 60 | 50 | 1 | | | | | | | | | | | | | | | |
| | | | | | | | 30 | 100 | 1 | | | | | | | | | | | | | 0.3 | 0.95 | 50 |
| 2N2712 | TO-92 (94) | 18 | 18 | 5 | 500 | 18 | 75 | 225 | 2 | 4.5 | | | | 12 | 80 | 300 | 2 | | | | 27 | | | |
| 2N2714 | TO-92 (94) | 18 | 18 | 5 | 500 | 18 | 75 | 225 | 2 | 4.5 | 0.3 | 0.6 | 1.2 | 50 | | | | | | | 27 | | | |
| 2N3394 | TO-92 (94) | 25 | 25 | 5 | 100 | 18 | 55 | 110 | 2 | 4.5 | | | | 10 | | | | | | | 27 | | | |
| 2N3693 | TO-92 (92) | Same as MPS3693, see page 1-26 for explanation | | | | | | | | | | | | | | | | | 27 | | | | | |
| 2N3694 | TO-92 (92) | Same as PN3694, see page 1-26 for explanation | | | | | | | | | | | | | | | | | 27 | | | | | |
| 2N3721 | TO-92 (94) | 18 | 18 | 5 | 500 | 18 | 60 | 660 | 2 | 10 | | | | 12 | | | | | | | 27 | | | |
| 2N3827 | TO-92 (94) | 60 | 45 | 4 | 100 | 30 | 100 | 400 | 10 | 10 | | | | 3.5 | 200 | 800 | 10 | | | | 27 | | | |
| 2N3858 | TO-92 (94) | 30 | 30 | 4 | 500 | 18 | 60 | 120 | 2 | 4.5 | | | | 4 | 90 | 250 | 2 | | | | 27 | | | |

TEST CONDITIONS:

(1) IC = 300 μA, VCE = 10V, f = 1 kHz. (2) IC = 150 mA, VCC = 30V, IB¹ = IB² = 15 mA. (3) IC = 100 μA, VCE = 10V, f = 1 kHz. (4) IC = 300 mA, VCC = 25V, IB¹ = IB² = 30 mA. (5) IC = 100 μA, VCE = 4.5V, f = 15.7 kHz. (6) IC = 10 mA, VCC = 3V, IB¹ = IB² = 1 mA. (7) IC = 100 μA, VCE = 5V, f = 15.7 kHz. (8) IC = 250 μA, VCE = 5V, f = 10 Hz-15.7 kHz. (9) IC = 3 mA, VCE = 10V, f = 1 MHz. (10) IC = 10 μA, VCE = 5V, f = 15.7 kHz.

