



Selection by Package

The product listed in Tables 1 through 22 have been compiled on an IBM or compatible personal computer disk for quick selection of product. This versatile disk may be obtained

by contacting a Motorola sale office in your area or by contacting a Motorola Literature Distribution Center listed on the back cover. Order the disk by requesting DK101/D.

Tables 1 through 22 are shown by package type. Within the tables the devices are arranged by breakdown voltage and on-resistance as the primary selection criteria. Device types shaded in Tables 1 through 8 are preferred devices recommended for new designs.

TMOS Power MOSFETs

Plastic Packages — TO-220AB



Table 1 — P-Channel

| | V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D (Ohms) @ (Amps) | | Device | I _D (cont) Amps | P _D [*] (Watts) Max | Page |
|------------|--|---|-----|----------|----------------------------------|---|-------|
| | | Max | | | | | |
| | 500 | 6 | 1 | MTP2P50 | 2 | 75 | 3-407 |
| | 450 | | | MTP2P45 | | | 3-427 |
| | 250 | 4 | 1.5 | MTP3P25 | 3 | | 3-427 |
| | | 3 | 2.5 | MTP5P25 | 5 | | 3-447 |
| | | 2 | 4 | MTP8P25 | 8 | | 3-462 |
| NEW | 200 | 0.5 | 6 | IRF9640 | 11 | 125 | 3-147 |
| NEW | | 0.8 | 3.5 | IRF9630 | 6.5 | 75 | 3-145 |
| | 180 | 1 | 2.5 | MTP5P20 | 5 | | 3-442 |
| | | | | MTP5P18 | | | 3-442 |
| | 100 | 0.4 | 4 | MTP8P10 | 8 | | 3-457 |
| | | 0.3 | 6 | MTP12P10 | 12 | | 3-493 |
| | 80 | 0.4 | 4 | MTP8P08 | 8 | | 3-457 |
| | | | | MTP12P08 | 12 | | 3-493 |
| | | | | MTP7P06 | 7 | | 3-651 |
| NEW | 60 | 0.6 | 3.5 | MTP2955 | 12 | | 3-606 |
| | | 0.3 | 6 | MTP12P06 | | | 3-493 |
| | | 0.2 | 10 | MTP20P06 | 20 | 100 | 3-740 |
| | 50 | 0.6 | 3.5 | MTP7P05 | 7 | 75 | 3-651 |
| | | 0.3 | 6 | MTP12P05 | 12 | | 3-493 |

* @ 25°C

Bold Type Indicates new product.

Shaded devices are preferred devices and are recommended for new designs.

Table 2 — N-Channel

| V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D (Ohms) @ I _D (Amps) | | Device | I _D (cont) Amps | P _D [*] (Watts) Max | Page |
|--|---|-----|----------|----------------------------------|---|-------|
| | Max | | | | | |
| 1000 | 10 | 0.5 | MTP1N100 | 1 | 75 | 3-392 |
| | 4 | 1.5 | MTP3N100 | 3 | | 3-606 |
| 950 | 10 | 0.5 | MTP1N95 | 1 | 75 | 3-392 |
| | 4 | 1.5 | MTP3N95 | 3 | | 3-606 |
| 900 | 8 | 1 | MTP2N90 | 2 | 75 | 3-402 |
| | 4 | 2 | MTP4N90 | 4 | | 3-606 |
| 850 | 8 | 1 | MTP2N85 | 2 | 75 | 3-402 |
| | 4 | 2 | MTP4N85 | 4 | | 3-606 |
| 800 | 7 | 1.5 | MTP3N80 | 3 | 75 | 3-417 |
| | 3 | 1.7 | BUZ80A | | | 3-79 |
| 750 | 7 | 1.5 | MTP3N75 | | 75 | 3-417 |
| 600 | 12 | 0.5 | MTP1N60 | 1 | 125 | 3-566 |
| | 6 | 1 | MTP2N60 | 2 | | 3-586 |
| | 2.5 | 1.5 | MTP3N60 | 3 | | 3-412 |
| | 2 | 2.5 | BUZ90 | 4 | | 3-85 |
| 550 | 1.2 | 3 | MTP6N60 | 6 | 75 | 3-641 |
| | 12 | 0.5 | MTP1N55 | 1 | | 3-566 |
| | 6 | 1 | MTP2N55 | 2 | | 3-586 |
| | 2.5 | 1.5 | MTP3N55 | 3 | | 3-412 |
| 500 | 1.2 | 3 | MTP6N55 | 6 | 125 | 3-641 |
| | 8 | 0.5 | MTP1N50 | 1 | 50 | 3-561 |
| | 4 | 1 | MTP2N50 | 2 | 75 | 3-397 |
| | 3 | 1.5 | IRF820 | 2.5 | 40 | 3-139 |
| | | | MTP3N50 | 3 | 75 | 3-601 |
| | 2 | 1.5 | IRF832 | 4 | | 3-141 |
| | | | IRF830 | 4.5 | | 3-141 |
| | | | MTP4N50 | 4 | | 3-432 |
| | 1.1 | 4 | IRF842 | 7 | 125 | 3-143 |
| | 0.85 | | IRF840 | 8 | | 3-143 |
| | 0.8 | | MTP8N50 | | | 3-672 |
| | | | | | | |
| 450 | 8 | 0.5 | MTP1N45 | 1 | 50 | 3-561 |
| | 4 | 1 | MTP2N45 | 2 | 75 | 3-397 |
| | | | IRF823 | | 40 | 3-139 |
| | 3 | 1.5 | IRF821 | 2.5 | | 3-139 |
| | | | MTP3N45 | 3 | 75 | 3-601 |
| | 2 | 2.5 | IRF833 | 4 | | 3-141 |
| | 1.5 | 2 | MTP4N45 | | | 3-432 |
| | | 2.5 | IRF831 | 4.5 | | 3-141 |

* @ 25°C

Bold Type Indicates new product.

Shaded devices are preferred devices and are recommended for new designs.

Table 2 — N-Channel — continued

| V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|----------------------------|---------------|----------------|----------|----------------------|-----------------------|-------|
| | (Ohms) Max | @ ID (Amps) | | | | |
| 450 | 1.1 | 4 | IRF843 | 7 | 125 | 3-143 |
| | 0.85 | | IRF841 | 8 | | 3-143 |
| | 0.8 | | MTP8N45 | | | 3-672 |
| 400 | 5 | 1 | MTP2N40 | 2 | 50 | 3-581 |
| | 3.3 | 1.5 | MTP3N40 | 3 | 75 | 3-596 |
| | 2.5 | | IRF722 | 2.5 | 40 | 3-133 |
| | 1.8 | | IRF720 | 3 | | 3-133 |
| | 1.5 | 3 | IRF732 | 4.5 | 75 | 3-135 |
| | 1 | | IRF730 | | | 3-135 |
| | | 2.5 | MTP5N40 | 5 | | 3-437 |
| | 0.55 | | IRF740 | 10 | 125 | 3-137 |
| | | MTP10N40 | | | 3-704 | |
| 350 | 5 | 1 | MTP2N35 | 2 | 50 | 3-581 |
| | 1.5 | 3 | IRF733 | 4.5 | 75 | 3-135 |
| | 1 | | IRF731 | 5.5 | | 3-135 |
| | | 2.5 | MTP5N35 | 5 | | 3-437 |
| | 0.55 | 5 | IRF741 | 10 | 125 | 3-137 |
| | MTP10N35 | | 3-704 | | | |
| 250 | 2 | 1 | MTP2N25 | 2 | 50 | 3-576 |
| | 0.45 | 5 | MTP10N25 | 10 | 100 | 3-478 |
| 200 | 2.4 | 1.25 | IRF612 | 2 | 20 | 3-123 |
| | 1.8 | 1 | MTP2N20 | | 50 | 3-571 |
| | 1.5 | 1.25 | IRF610 | 2.5 | 20 | 3-123 |
| | 1 | | MTP5N20 | 5 | 75 | 3-631 |
| | 0.8 | | IRF620 | | 40 | 3-125 |
| | 0.7 | 3.5 | MTP7N20 | 7 | 75 | 3-646 |
| | 0.6 | 5 | IRF632 | 8 | | 3-127 |
| | | | IRF630 | 9 | | 3-127 |
| | | | 4 | MTP8N20 | 8 | |
| | | 3.5 | BUZ73 | 7 | 40 | 3-75 |
| | 0.35 | 6 | MTP12N20 | 12 | 100 | 3-714 |
| | 0.22 | 10 | IRF642 | 16 | 125 | 3-129 |
| | 0.18 | | IRF640 | 18 | | 3-129 |
| 150 | 0.8 | 2.5 | IRF621 | 4 | 40 | 3-125 |
| | 0.4 | 5 | IRF631 | 9 | 75 | 3-127 |
| | | | MTP10N15 | 10 | | 3-699 |
| | 0.25 | 7.5 | MTP15N15 | 15 | 100 | 3-729 |
| | 0.22 | 10 | IRF643 | 16 | 125 | 3-129 |

* @ 25°C

Shaded devices are preferred devices and are recommended for new designs.

Table 2 — N-Channel — continued

| V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D | | Device | I _D (cont) Amps | P _D * (Watts) Max | Page | |
|--|--------------------------------------|----------|-----------|----------------------------------|------------------------------------|-------|-------|
| | (Ohms) Max | (Amps) | | | | | |
| 150 | 0.18 | 10 | IRF641 | 18 | 125 | 3-129 | |
| 120 | 0.3 | 5 | MTP10N12L | 10 | 75 | 3-473 | |
| | 0.9 | 2.5 | MTP5N12 | 5 | 50 | 3-626 | |
| | 1.2 | 1.5 | MTP3N12 | 3 | | ** | |
| 100 | 0.8 | 3 | MTP6N10 | 6 | 20 | 3-636 | |
| | | 2 | IRF512 | 3.5 | | 3-115 | |
| | 0.6 | IRF510 | | 4 | | 3-115 | |
| | | 0.5 | 4 | MTP8N10 | | 8 | 75 |
| | MTP8N10E | | | 3-661 | | | |
| | 0.4 | IRF522 | | 7 | 40 | 3-117 | |
| | 0.33 | 5 | MTP10N10 | 10 | 75 | 3-682 | |
| | 0.3 | 4 | IRF520 | 8 | 40 | 3-117 | |
| | 0.25 | 5 | MTP10N10E | | 10 | 75 | 3-687 |
| | | | IRF532 | 12 | | | 3-119 |
| | | 8 | IRF530 | | 14 | | 3-119 |
| | 0.18 | 6 | MTP12N10 | | 12 | 3-488 | |
| | | | 10 | MTP20N10 | | 20 | 100 |
| | MTP20N10E | | | | 3-734 | | |
| | 0.11 | 15 | IRF542 | | 24 | 125 | 3-121 |
| | 0.085 | | IRF540 | | 27 | | 3-121 |
| | | 0.075 | 12.5 | MTP25N10 | | | 25 |
| | MTP25N10E | | | 3-762 | | | |
| | 80 | 0.8 | 2 | MTP4N08 | 4 | 50 | 3-616 |
| 0.5 | | 4 | MTP8N08 | | 8 | 75 | 3-656 |
| | | | MTP10N08 | | | 10 | 3-682 |
| 0.33 | | 5 | MTP10N08 | 10 | | 3-682 | |
| 0.18 | | 6 | MTP12N08 | 12 | | 3-488 | |
| 0.15 | 10 | MTP20N08 | | 20 | 100 | 3-519 | |
| 60 | 0.8 | 2 | IRF513 | 3.5 | 20 | 3-115 | |
| | | | IRF511 | 4 | | 3-115 | |
| | 0.6 | 2.5 | MTP5N06 | | 5 | 50 | 3-621 |
| | | | MTP7N06 | | 7 | | ** |
| | 0.4 | 4 | IRF523 | | 8 | 40 | 3-117 |
| | | | IRF521 | | | 8 | 3-117 |
| | 0.3 | MTP10N06 | | 10 | 75 | 3-677 | |
| | 0.28 | 5 | MTP10N06 | 10 | | 3-677 | |
| | 0.25 | 8 | IRF533 | | | 12 | 3-119 |
| | 0.2 | 5 | MTP10N06E | | | 10 | 3-467 |
| | | | MTP12N06 | | | | 3-483 |
| 0.18 | 8 | IRF531 | | 14 | 3-119 | | |

* @ 25°C

**Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 2 — N-Channel — continued

| $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ @ I_D | | Device | I_D (cont) Amps | P_D^* (Watts) Max | Page | |
|---------------------------------|----------------------|-----------|-----------|-------------------------|---------------------------|-------|-------|
| | (Ohms) Max | (Amps) | | | | | |
| 60 | 0.16 | 7.5 | MTP15N06 | 15 | 75 | 3-719 | |
| | | | MTP15N06E | | | 3-503 | |
| | 0.15 | 6 | MTP3055E | 12 | 40 | 3-811 | |
| | | | IRF541 | | | 27 | 125 |
| | 0.085 | 15 | MTP25N06 | 25 | 100 | 3-524 | |
| | | | MTP25N06E | | | 3-751 | |
| 0.08 | 12.5 | MTP35N06E | 35 | 125 | 3-781 | | |
| 50 | 0.6 | 2.5 | MTP5N05 | 5 | 50 | 3-621 | |
| | | | MTP10N05 | | | 10 | 75 |
| | 0.28 | 5 | MTP15N05 | 15 | 75 | 3-719 | |
| | | | MTP15N05E | | | 15 | 40 |
| | 0.12 | 6 | BUZ71A | 12 | 40 | ** | |
| | | | MTP12N05E | | | ** | |
| | | | IRFZ22 | | | 14 | 3-165 |
| | | | BUZ71 | | | 12 | 3-70 |
| | 0.1 | 7.5 | MTP15N05E | 15 | 75 | ** | |
| | | | IRFZ20 | | | 15 | 3-165 |
| | 0.08 | 12.5 | MTP25N05 | 25 | 100 | 3-524 | |
| | | | MTP25N05E | | | 25 | 3-745 |
| | 0.07 | 12.5 | IRFZ32 | 32 | 100 | 3-167 | |
| | 0.06 | 15 | BUZ11A | 15 | 75 | 3-67 | |
| | | | MTP30N05E | | | 30 | 3-768 |
| | 0.05 | 15 | BUZ11 | 15 | 75 | 3-67 | |
| 0.04 | 15 | MTP45N05E | 45 | 125 | 3-539 | | |
| | | IRFZ42 | | | 46 | 3-169 | |
| 0.035 | 29 | MTP50N05E | 50 | 125 | 3-550 | | |
| 0.028 | 25 | MTP50N05E | 50 | 125 | 3-550 | | |
| | | IRFZ40 | | | 51 | 3-169 | |

* @ 25°C

**Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 3 — N- and P-Channel — Isolated TO-220

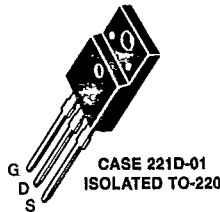
| | $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ @ I_D | | Device | I_D (cont) Amps | P_D^* (Watts) Max | Page |
|-----|---------------------------------|----------------------|--------|------------|-------------------------|---------------------------|------|
| | | (Ohms) Max | (Amps) | | | | |
| NEW | 60 | 0.3 | 6 | MTA2955*** | 7 | 33 | ** |
| NEW | | | | MTP3055E | 10 | 40 | ** |
| NEW | | 0.1 | 7.5 | MTA15N06E | 15 | 40 | ** |
| NEW | | 0.028 | 25 | MTA30N06E | 30 | 50 | ** |

* @ 25°C

**Contact Motorola sales office for data sheet.

***Indicates P-Channel

Shaded devices are preferred devices and are recommended for new designs.



CASE 221D-01
ISOLATED TO-220



TMOS Power MOSFETs

Plastic Packages — TO-218AC

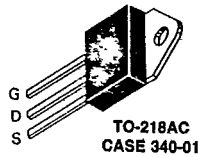


Table 4 — P-Channel

| V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|----------------------------|---------------|--------|----------|----------------------|-----------------------|-------|
| | (Ohms) Max | (Amps) | | | | |
| 200 | 0.7 | 4 | MTH8P20 | 8 | 125 | 3-314 |
| 180 | | | MTH8P18 | | | 3-314 |
| 100 | 0.15 | 10 | MTH20P10 | 20 | | 3-339 |
| 80 | | | MTH20P08 | | | 3-339 |
| 60 | 0.14 | 12.5 | MTH25P06 | 25 | | 3-349 |
| 50 | | | MTH25P05 | | | 3-349 |

* @ 25°C
Shaded devices are preferred devices and are recommended for new designs.

Table 5 — N-Channel

| | V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|---------|----------------------------|---------------|---------|-----------------|----------------------|-----------------------|-------|
| | | (Ohms) Max | (Amps) | | | | |
| NEW | 1000 | 2 | 3 | MTH6N100 | 6 | 150 | 3-287 |
| | 950 | 3 | 2.5 | MTH5N100 | 5 | | 3-272 |
| | | | | | MTH5N95 | | 3-272 |
| NEW | 900 | 1.8 | 4 | MTH8N90 | 8 | 170 | 3-308 |
| | 850 | 3 | 3 | MTH6N90 | 6 | 150 | 3-282 |
| MTH6N85 | | | | 3-282 | | | |
| NEW | 800 | 1.5 | 3.8 | BUZ355 | | 125 | 3-91 |
| | 600 | 1.2 | 3 | MTH6N60 | 8 | 150 | 3-277 |
| 0.5 | | 4 | MTH8N60 | 3-303 | | | |
| | 550 | 1.2 | 3 | MTH6N55 | 6 | | 3-277 |
| | | 0.5 | 4 | MTH8N55 | 8 | | 3-303 |
| NEW | 500 | 0.8 | 3.5 | MTH7N50 | 7 | | 3-293 |
| | | 0.6 | 6 | BUZ330 | 9.5 | | 125 |
| | 450 | 0.4 | 7 | MTH13N50 | 13 | 150 | 3-319 |
| | | 0.8 | 3.5 | MTH7N45 | 7 | | 3-293 |
| | 400 | 0.4 | 7 | MTH13N45 | 13 | | 3-319 |
| | | 0.55 | 4 | MTH8N40 | 8 | | 3-298 |
| | 350 | 0.3 | 7.5 | MTH15N40 | 15 | | 3-329 |
| | | 0.55 | 4 | MTH8N35 | 8 | | 3-298 |
| NEW | 250 | 0.3 | 7.5 | MTH15N35 | 15 | | 3-329 |
| | | 0.14 | 15 | MTH30N25 | 20 | | 125 |

* @ 25°C
Bold Type Indicates new product.
Shaded devices are preferred devices and are recommended for new designs.

Table 5 — N-Channel — continued

| V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|----------------------------|---------------|--------|-----------|----------------------|-----------------------|-------|
| | (Ohms) Max | (Amps) | | | | |
| 200 | 0.16 | 7.5 | MTH15N20 | 15 | 150 | 3-324 |
| | 0.08 | 15 | MTH30N20 | 30 | | 3-354 |
| 150 | 0.12 | 10 | MTH20N15 | 20 | | 3-334 |
| | 0.06 | 17.5 | MTH35N15 | 35 | | 3-376 |
| 100 | 0.07 | 12.5 | MTH26N10 | 25 | | 3-344 |
| | 0.04 | 20 | MTH40N10 | 40 | | 3-381 |
| 80 | 0.07 | 12.5 | MTH25N08 | 25 | | 3-344 |
| | 0.04 | 20 | MTH40N08 | 40 | | 3-381 |
| 60 | 0.055 | 17.5 | MTH35N06 | 35 | | 3-365 |
| | | | MTH35N06E | | | 3-370 |
| | 0.028 | 20 | MTH40N06 | 40 | | 3-381 |
| 50 | 0.055 | 17.5 | MTH35N05 | 35 | | 3-365 |
| | 0.028 | 20 | MTH40N05 | 40 | 3-381 | |
| | | 25 | MTH50N05E | 50 | 3-386 | |
| | | | | | 125 | |

NEW

* @ 25°C

Bold Type Indicates new product.

Shaded devices are preferred devices and are recommended for new designs.

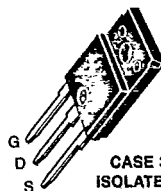
Table 6 — N- and P-Channel Isolated TO-218

| V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|----------------------------|---------------|--------|-------------|----------------------|-----------------------|------|
| | (Ohms) Max | (Amps) | | | | |
| 500 | 0.4 | 7 | MTG9N50E | 9 | 70 | ** |
| 200 | 0.08 | 15 | MTG20N20 | 20 | | ** |
| 100 | 0.15 | 10 | MTG15P10*** | 15 | | ** |

NEW

NEW

NEW



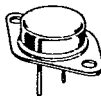
CASE 340B-03
ISOLATED TO-218

* TC = 25°C

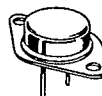
**Contact Motorola sales office for data sheet.

***Indicates P-Channel

Bold Type Indicates new product.



TO-204AA
CASE 1-06



TO-204AE
CASE 197A-02

TMOS Power MOSFETs

Metal Packages — TO-204AA/AE

Table 7 — P-Channel

| V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D (Ohms) Max | | Device | I _D (cont) Amps | P _D * (Watts) Max | Page | |
|--|---|--------|----------|----------------------------------|------------------------------------|-------|-------|
| | | (Amps) | | | | | |
| 500 | 6 | 1 | MTM2P50 | 2 | 75 | 3-407 | |
| 450 | | | MTM2P45 | | | 3-407 | |
| 250 | 4 | 1.5 | MTM3P25 | 3 | 75 | 3-427 | |
| | 3 | 2.5 | MTM5P25 | 5 | | 3-447 | |
| | 2 | 4 | MTM8P25 | 8 | | 3-462 | |
| 200 | 1 | 2.5 | MTM5P20 | 5 | 125 | 3-442 | |
| | 0.7 | 4 | MTM8P20 | 8 | | 3-314 | |
| 180 | 1 | 2.5 | MTM5P18 | 5 | 75 | 3-442 | |
| | 0.7 | 4 | MTM8P18 | 8 | | 3-314 | |
| 100 | 0.4 | 6 | MTM8P10 | 12 | 75 | 3-457 | |
| | 0.3 | | MTM12P10 | | | 3-493 | |
| | 0.15 | | MTM20P10 | | | 20 | 125 |
| 80 | 0.4 | 4 | MTM8P08 | 8 | 75 | 3-457 | |
| | 0.3 | 6 | MTM12P08 | 12 | | 3-493 | |
| | 0.15 | 10 | MTM20P08 | 20 | | 125 | 3-339 |
| 60 | 0.3 | 6 | MTM12P06 | 12 | 75 | 3-493 | |
| | 0.14 | 12.6 | MTM25P06 | 25 | | 125 | 3-349 |
| 50 | 0.3 | 6 | MTM12P05 | 12 | 75 | 3-493 | |
| | 0.2 | 10 | MTM20P05 | 20 | | 100 | ** |
| | 0.14 | 12.5 | MTM25P05 | 25 | | 125 | 3-349 |

* @ 25°C

**Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 8 — N-Channel

| V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D (Ohms) Max | | Device | I _D (cont) Amps | P _D * (Watts) Max | Page | |
|--|---|--------|------------|----------------------------------|------------------------------------|-------|-------|
| | | (Amps) | | | | | |
| 1000 | 10 | 0.5 | MTM1N100 | 1 | 75 | 3-392 | |
| | 4 | 1.5 | MTM3N100 | 3 | | 3-422 | |
| | 3 | 2.5 | MTM5N100 | 5 | | 150 | 3-272 |
| | 1.2 | 5 | MTM10N100E | 10 | | 300 | ** |

NEW

* @ 25°C

**Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 8 — N-Channel — continued

| V _{(BR)DSS} (Volts) Min. | r _{DS(on)} (Ohms) Max. | I _D (Amps) @ T _D | Device | I _D (cont.) Amps | P _D [*] (Watts) Max. | Page |
|---|---------------------------------------|--|-----------|-----------------------------------|--|-------|
| 950 | 10 | 0.5 | MTM1N95 | 1 | 75 | 3-392 |
| | 4 | 1.5 | MTM3N95 | 3 | 125 | 3-422 |
| | 3 | 2.5 | MTM5N95 | 5 | 150 | 3-272 |
| 900 | 8 | 1 | MTM2N90 | 2 | 75 | 3-402 |
| | 4 | 2 | MTM4N90 | 4 | 125 | 3-422 |
| | 3 | 3 | MTM6N90 | 6 | 150 | 3-282 |
| 850 | 8 | 1 | MTM2N85 | 2 | 75 | 3-402 |
| | 4 | 2 | MTM4N85 | 4 | 125 | 3-422 |
| | 3 | 3 | MTM6N85 | 6 | 150 | 3-282 |
| 800 | 7 | 1.5 | MTM3N80 | 3 | 75 | 3-417 |
| | 2 | 3 | BUZ84 | 5.3 | 125 | 3-83 |
| | 1.5 | | BUZ84A | 6 | | 3-83 |
| 750 | 7 | 1.5 | MTM3N75 | 3 | 75 | 3-417 |
| 600 | 2.8 | 3 | 2N6823 | | | 3-48 |
| | 2.5 | 1.5 | MTM3N60 | | | 3-412 |
| | 1.8 | 6 | 2N6826 | 6 | 150 | 3-53 |
| | 1.2 | 3 | MTM6N60 | | | 3-277 |
| | 0.5 | 4 | MTM8N60 | 8 | | 3-303 |
| 500 | 4 | 1 | MTM2N50 | 2 | 75 | 3-397 |
| | 1.5 | 2 | MTM4N50 | 4 | | 3-432 |
| | | 3 | 2N6762 | 4.5 | | 3-18 |
| | 0.85 | 4 | IRF440 | 8 | 125 | 3-111 |
| | 0.8 | 3.5 | MTM7N50 | 7 | 150 | 3-293 |
| | 0.5 | 0.4 | 7 | IRF452 | 12 | |
| | | | IRF450 | 13 | | 3-113 |
| 7.75 | | | 2N6770 | 12 | | 3-37 |
| NEW | | 7.5 | MTM15N50 | 15 | 250 | 3-514 |
| | 0.25 | 12 | MTM24N50E | 24 | 300 | ** |
| 450 | 1.5 | 2 | MTM4N45 | 4 | 75 | 3-432 |
| | 0.85 | 4 | IRF441 | 8 | 125 | 3-111 |
| | 0.8 | 3.5 | MTM7N45 | 7 | 150 | 3-293 |
| | 0.4 | 7 | IRF451 | 13 | | 3-113 |
| | | 7.5 | MTM15N45 | 15 | 250 | 3-514 |

* @ 25°C

** Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 8 — N-Channel — continued

| V(BR)DSS (Volts) Min | rDS(on) @ ID | | Device | ID (cont) Amps | PD* (Watts) Max | Page |
|----------------------------|---------------|----------|-----------|----------------------|-----------------------|-------|
| | (Ohms) Max | (Amps) | | | | |
| 400 | 1 | 3 | IRF330 | 5.5 | 75 | 3-105 |
| | | 2.5 | MTM5N40 | 5 | | 3-437 |
| | | 3.5 | 2N6760 | 5.5 | | 3-14 |
| | 0.55 | 5 | IRF340 | 10 | 125 | 3-107 |
| | | 4 | MTM8N40 | 8 | 150 | 3-298 |
| | 0.3 | 8 | IRF350 | 15 | | 3-109 |
| | | 9 | 2N6768 | 14 | | 3-32 |
| | | 7.5 | MTM15N40 | 15 | | 250 |
| | 0.18 | 13 | MTM26N40E | 26 | 300 | ** |
| | 350 | 1.5 | 3 | IRF333 | 4.5 | 75 |
| 2N6759 | | | | 3-14 | | |
| 1 | | IRF331 | 5.5 | 3-105 | | |
| | | 2.5 | MTM5N35 | 5 | 3-437 | |
| 0.3 | | 8 | IRF351 | 15 | 150 | |
| | 7.5 | MTM15N35 | 15 | 250 | 3-509 | |
| 250 | 0.45 | 5 | MTM10N25 | 10 | 100 | 3-478 |
| 200 | 0.4 | 4 | IRF230 | 9 | 75 | 3-99 |
| | | | 2N6758 | | | 3-10 |
| | | | MTM8N20 | | | 8 |
| | 0.18 | 10 | IRF240 | 18 | 125 | 3-101 |
| | 0.18 | 7.5 | MTM15N20 | 15 | 150 | 3-324 |
| | 0.12 | 16 | IRF252 | 25 | | 3-103 |
| | | | IRF250 | 30 | | 3-103 |
| | 0.085 | 19 | 2N6766 | | | 19 |
| | 0.08 | 20 | MTM40N20 | 40 | 250 | 3-534 |
| | 150 | 0.22 | 10 | IRF243 | 16 | 125 |
| 16 | | | IRF241 | 18 | 3-101 | |
| 0.12 | | 10 | MTM20N15 | 20 | 150 | 3-334 |
| | | 16 | IRF253 | 25 | | 3-103 |
| 0.085 | | IRF251 | 30 | 3-103 | | |
| 0.06 | 22.5 | MTM45N15 | 45 | 250 | 3-545 | |
| 100 | 0.18 | 8 | IRF130 | 14 | 75 | 3-93 |
| | | 6 | MTM12N10 | 12 | | 3-488 |
| | | 9 | 2N6756 | 14 | | 3-6 |
| | 0.15 | 10 | MTM20N10 | 20 | 100 | 3-519 |
| | | 0.11 | 15 | IRF142 | 24 | 125 |
| | IRF140 | | | 27 | 3-95 | |
| | 0.08 | 20 | IRF152 | 33 | 150 | |

* @ 25°C

**Contact Motorola sales office for data sheet.

Shaded devices are preferred devices and are recommended for new designs.

Table 8 — N-Channel — continued

| V _{(BR)DSS} (Volts) Min | r _{DS(on)} @ I _D (Ohms) @ I _D (Amps) | | Device | I _D (cont) Amps | P _D * (Watts) Max | Page |
|--|---|----------|-----------|----------------------------------|------------------------------------|-------|
| | Max | | | | | |
| 100 | 0.075 | 12.5 | MTM25N10E | 25 | 150 | 3-344 |
| | 0.07 | | MTM25N10 | | | |
| | 0.055 | 20 | IRF150 | 40 | 250 | 3-97 |
| | | 24 | 2N6764 | 38 | | 3-22 |
| | 0.04 | 27.5 | MTM55N10 | 55 | 250 | 3-556 |
| 80 | MTM55N08 | | 3-556 | | | |
| 60 | 0.15 | 7.7 | MTM15N06E | 17 | 75 | 3-503 |
| | 0.085 | 15 | IRF141 | 27 | 125 | 3-95 |
| | 0.055 | 17.5 | MTM35N06 | 35 | 150 | 3-365 |
| | | | MTM35N06E | | | 3-370 |
| | | 20 | IRF151 | 40 | | 3-97 |
| 0.028 | 30 | MTM60N06 | 60 | 250 | 3-556 | |
| 50 | 0.2 | 6 | MTM12N05 | 12 | 75 | 3-483 |
| | 0.055 | 17.5 | MTM35N05 | 35 | 125 | 3-365 |
| | 0.035 | 29 | MTM45N05E | 45 | | 3-539 |
| | 0.028 | 25 | MTM50N05E | 50 | | 3-550 |
| | | 30 | MTM60N05 | 60 | 250 | 3-556 |

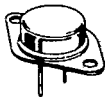
* @ 25°C

**Contact Motorola sales office for data sheet.

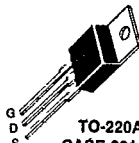
Shaded devices are preferred devices and are recommended for new designs.



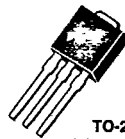
www.DataSheet4U.com



TO-204AA
(TO-3)
CASE 1-06



TO-220AB
CASE 221A-04



TO-251
CASE 369-03



TO-252
CASE 369A-04

TMOS Power MOSFETs

Logic Level Power MOSFETs

Logic level MOSFETs are fully enhanced with 5 volts applied to the gate.

Table 9 — N-Channel Logic Level Power MOSFETs (TO-204AA and TO-220AB)

| | $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ (Ohms) Max | @ | I_D (Amps) | Device | $I_{D(cont)}$ Amps | $P_D @ T_C = 25^\circ C$ Watts | Package TO- | Page |
|-------------------|---------------------------------|-------------------------------|---|-----------------|------------|-----------------------|-----------------------------------|----------------|--------|
| NEW | 150 | 0.3 | | 5 | MTM10N15L | 10 | 75 | 204AA | 3-473 |
| | | | | | MTP10N15L | | | 220AB | 3-473 |
| | 120 | 0.3 | | 5 | MTM10N12L | 10 | | 204AA | 3-473 |
| | | | | | MTP10N12L | | | 220AB | 3-473 |
| 100 | 0.2 | | 6 | MTM12N10L | 12 | | 204AA | ** | |
| | | | | MTP12N10L | | | 220AB | 3-709 | |
| NEW | 80 | 0.135 | | 7.5 | MTP3N10L | 3 | | | 3-591 |
| | | | | | MTP15N08L | | | | 15 |
| | 60 | 0.2 | | 6 | MTM12N08L | 12 | | 204AA | ** |
| | | | | | MTP12N08L | | | 220AB | 3-709 |
| NEW | 60 | 0.06 | | 20 | MTP3N08L | 3 | | | 3-591 |
| | | | | | MTP40N06EL | | | | 40 |
| | 50 | 0.08 | | 12.5 | MTM25N06L | 25 | 100 | 204AA | 3-529 |
| | | | | | MTP25N06L | | | 220AB | 3-529 |
| NEW NEW NEW | 50 | 0.15 | | 7.5 | MTM15N06L | 15 | 75 | 204AA | 3-498 |
| | | | | | MTP15N06L | | | 220AB | 3-498 |
| | 50 | 0.18 | | 6 | MTP3055EL | 12 | 40 | | 3-817 |
| | | | | | MTD3055EL | | | | TO-252 |
| NEW | 50 | 0.6 | | 2 | MTD3055EL1 | 12 | | TO-251 | 3-266 |
| | | | | | MTP4N06L | | | 4 | 25 |
| | 50 | 0.032 | | 25 | MTP50N05EL | 50 | 150 | | 3-800 |
| | | | | | MTM25N05L | | | | 25 |
| NEW | 50 | 0.08 | | 12.5 | MTP25N05L | 25 | | 220AB | 3-529 |
| | | | | | MTM15N05L | | | 15 | 75 |
| | 50 | 0.15 | | 7.5 | MTP15N05L | 15 | | 220AB | 3-498 |
| | | | | | MTP4N05L | | | 4 | 4 |

**Contact Motorola sales office for data sheet.

Bold Type Indicates new product.

Shaded devices are preferred devices and are recommended for new designs.



TMOS Power MOSFETs

Hermetic, Isolated, Tab Mount
Power MOSFETs

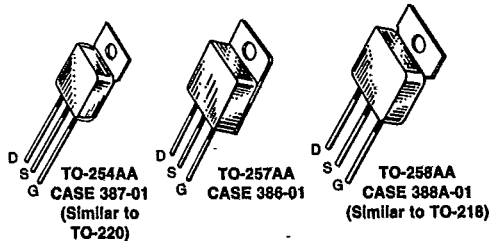


Table 10 — TO-254AA, TO-257AA, and TO-258AA
ALL NEW DEVICES**

| | V _{BRDSS} (Volts) Min | I _{DS(on)} (Ohms) Max | @ | I _D (Amps) | Device | I _{D(cont)} Amper | P _D @ T _C = 25°C Watts | Package TC- |
|-----|--------------------------------------|--------------------------------------|---|--------------------------|-----------|-------------------------------|---|----------------|
| NEW | 1000 | 3 | | 2.5 | MHR5N100 | 5 | 125 | 258AA |
| NEW | | | | | MHM5N100 | | | 254AA |
| NEW | 800 | 6 | | 1 | MHT1N100 | 1 | 50 | 257AA |
| NEW | | | | | MHT2N00 | | | 2 |
| NEW | 500 | 0.4 | | 7 | MHR15N50 | 15 | 125 | 258AA |
| NEW | | | | | MHM12N50 | | | 12 |
| NEW | | 1.8 | | 3.5 | MHR7P50* | 7 | 50 | 258AA |
| NEW | | | | | MHM7P50* | | | 254AA |
| NEW | 1.5 | | 3 | MHT4N50 | 4 | 50 | 257AA | |
| NEW | | | | MHT2P50* | | | 2 | |
| NEW | 200 | 0.1 | | 16 | MHR30N20 | 30 | 125 | 258AA |
| NEW | | | | | MHM25N20 | | | 25 |
| NEW | | 0.4 | | 6 | MHT8N20 | 8 | 50 | 257AA |
| NEW | | | | | MHR8P20* | | | 125 |
| NEW | 0.75 | | 4 | MHM8P20* | 10 | 50 | 254AA | |
| NEW | | | | MHT8P20* | | | 257AA | |
| NEW | 100 | 0.065 | | 20 | MHR35N10 | 35 | 125 | 258AA |
| NEW | | | | | MHM25N10 | | | 25 |
| NEW | | 0.15 | | 10 | MHM20P10* | 20 | 50 | 257AA |
| NEW | | | | | MHT10N10 | | | 10 |
| NEW | 0.2 | | 5 | MHT12P10* | 10 | 50 | 257AA | |
| NEW | | | | MHT12P10* | | | 10 | |
| NEW | 60 | 0.05 | | 15 | MHR35N06M | 35 | | 125 |

*Indicates P-Channel

**Contact Motorola sales office for data sheet.

Bold Type Indicates new product.

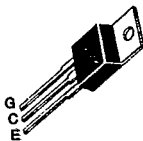
Note: All of these devices can be purchased with JTX or JTXV equivalent processing by adding HX or HVX suffix to device type.



TMOS Insulated Gate Bipolar Transistors

Gain Enhanced MOSFETs (IGBTs)

This relatively new series of power transistors combines the high input resistance of a MOSFET with the low internal on-resistance of a bipolar transistor to provide more efficient performance than either a MOSFET or bipolar device in low-frequency switching service. Recommended for motor drive circuits, home appliances, and other applications where high switching speed is not a requirement. All are N-Channel.

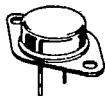


TO-220AB
CASE 221A-04

Table 11 — TO-220AB

| $V_{(BR)CES}$ (Volts) Min | $r_{CE(on)}$ @ I_C (Ohms) Max | I_C (Amps) | Device | I_C (cont) Amps | P_D^* (Watts) Max | Page |
|---------------------------------|---------------------------------------|-----------------|----------|-------------------------|---------------------------|-------|
| 500 | 0.27 | 10 | MGP20N50 | 20 | 100 | 3-184 |
| | 1.6 | 2.5 | MGP5N50 | 5 | 50 | 3-180 |
| 450 | 0.27 | 10 | MGP20N45 | 20 | 100 | 3-184 |
| | 1.6 | 2.5 | MGP5N45 | 5 | 50 | 3-180 |

* @ 25°C



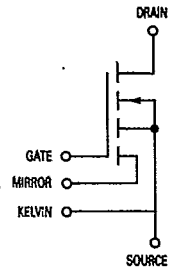
TO-204AA
(TO-3)
CASE 1-06

Table 12 — TO-204AA

| $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ @ I_D (Ohms) Max | I_D (Amps) | Device | I_D (cont) Amps | P_D^* (Watts) Max | Page |
|---------------------------------|---------------------------------------|-----------------|----------|-------------------------|---------------------------|-------|
| 500 | 0.27 | 10 | MGM20N50 | 20 | 100 | 3-184 |
| | 1.6 | 2.5 | MGM5N50 | 5 | 50 | 3-180 |
| 450 | 0.27 | 10 | MGM20N45 | 20 | 100 | 3-184 |
| | 1.6 | 2.5 | MGM5N45 | | | |

* @ 25°C

CASE 314B
(5 PIN TO-220)



TMOS SENSEFETs

SENSEFETs are conventional power MOSFETs with an option provided to sense the drain current by measuring a small proportion of the total drain current. These devices are ideal for current mode switching regulators and motor controls.

Table 13 — Case 314B

| | $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ @ I_D (Ohms) Max | | Device | I_D (cont) Amps | P_D^* (Watts) Max | Page |
|-----|---------------------------------|---------------------------------------|------|-----------|-------------------------|---------------------------|-------|
| NEW | 60 | 0.04 | 20 | MTP40N06M | 40 | 125 | 3-793 |
| NEW | 80 | 0.065 | 15 | MTP30N08M | 30 | | 3-774 |
| | 100 | 0.25 | 5 | MTP10N10M | 10 | 75 | 3-693 |
| | | 0.085 | 12.5 | MTP25N10M | 25 | 100 | ** |
| | 250 | 1.5 | 4 | MTP4N25M | 4 | 75 | ** |
| | | 0.45 | 2 | MTP10N25M | 10 | 100 | ** |

* @ 25°C

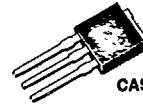
**Contact Motorola sales office for data sheet.

Bold Type indicates new product.

DPAK



CASE 369A-04****
TO-252



CASE 369-03****
TO-252

Table 14 — Case 369A-04 Surface Mount
Case 369-03 Insertion Mountable

| | $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)}$ @ I_D (Ohms) Max | | Device | I_D (cont) Amps | P_D^* (Watts) Max | Page |
|-----|---------------------------------|---------------------------------------|-----|-----------|-------------------------|---------------------------|-------|
| | 500 | 4 | 1 | MTD2N50 | 2 | 1.75** | 3-219 |
| | 400 | 5 | 0.5 | MTD1N40 | 1 | | 3-208 |
| | 200 | 0.7 | 2 | MTD4N20 | 4 | | 3-224 |
| | | 1.5 | 1 | MTD2N20 | 2 | | 3-213 |
| NEW | 150 | 0.25 | 3 | MTD6N15 | 6 | | 3-244 |
| | 100 | | | MTD6N10 | | | 3-239 |
| | 80 | | | MTD6N08 | | | 3-239 |
| | 60 | 0.6 | 2 | MTD4P06† | 4 | | 3-228 |
| | | 0.4 | 2.5 | MTD5N06 | 5 | | 3-234 |
| | | 0.3 | 6 | MTD2955† | 12 | | 3-255 |
| NEW | 50 | 0.15 | 4 | MTD3055E | 8 | | 3-260 |
| | | 0.6 | 2 | MTD4P05† | 4 | | 3-229 |
| | | 0.4 | 2.5 | MTQ5N05 | 5 | | 3-234 |
| | | 0.1 | 5 | MTD10N05E | 10 | | 3-249 |

* @ 25°C

**Power rating when mounted on a board with the minimum pad size recommended.

***Add -1 Suffix to part number to order Insertion mountable package.

****Available in tape and reel.

† Indicates P-Channel

Shaded devices are preferred devices and are recommended for new designs.

Bold Type indicates new product.



TMOS Power MOSFETs

Multiple Chip Products



Table 15 — Multiple Chip Products in the Isolated ICePAK*

CASE 806-02

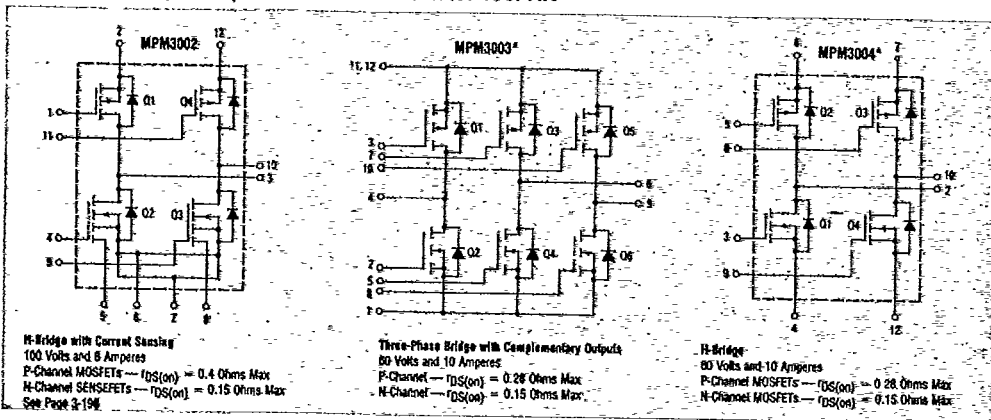


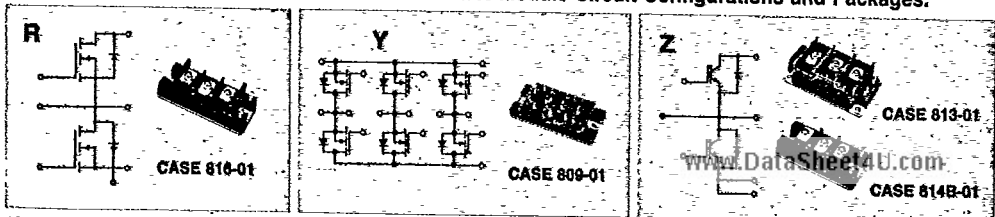
Table 16 — TMOS Power MOSFET Modules*

| Max I_D (cont) Amps | Max V_{DS} Volts | Device Type | Module Type | Max $V_{DS(on)}$ Volts | Conditions | | Max. Resistive Switching | | | | | P_D $T_C = 25^\circ C$ Watts | Case No. | Circuit Config. |
|-----------------------|--------------------|-------------|-------------|------------------------|------------|----------------|--------------------------|-------------------|---------------|------------|-------|--------------------------------|----------|-----------------|
| | | | | | I_D Amps | V_{GS} Volts | t_{on} μs | t_{off} μs | t_f μs | Conditions | | | | |
| | | | | | | | | | | $I_C(A)$ | V_G | | | |
| 15 | 450 | MT15FR45 | Six-pack | 6 | 15x6 | 10 | 0.6 | 2 | 0.5 | 15 | 10 | 125x6 | 809-01 | Y |
| 50 | 450 | MT50BY45 | Dual | 7 | 50 | 10 | 0.8 | 1.3 | 0.2 | 50 | 10 | 400x2 | 816-01 | R |

Table 17 — IGBT Power Modules*

| Max I_C (cont) Amps | Max V_{CE} Volts | Device Type | Module Type | Max V_{CE} Volts | Conditions | | Max. Resistive Switching | | | | P_D $T_C = 25^\circ C$ Watts | Case No. | Circuit Config. | |
|-----------------------|--------------------|-------------|-------------|--------------------|------------|----------------|--------------------------|---------------|---------------|------------|--------------------------------|----------|-----------------|---|
| | | | | | I_C Amps | V_{GE} Volts | t_{on} μs | t_s μs | t_f μs | Conditions | | | | |
| | | | | | | | | | | $I_C(A)$ | $V_G(V)$ | | | |
| 25 | 1000 | MG25BZ100 | Dual | 5 | 25 | 15 | 1 | 2 | 1 | 25 | 15 | 200x2 | 813-01 | Z |
| 50 | 1000 | MG50BZ100 | Dual | 5 | 50 | 15 | 1 | 1.5 | 1 | 50 | 15 | 300x2 | 813-01 | Z |
| 100 | 1000 | MG100BZ100 | Dual | 5 | 100 | 15 | 1 | 1.5 | 1 | 100 | 15 | 400x2 | 814B-01 | Z |
| 25 | 500 | MG25BZ50 | Dual | 5 | 25 | 15 | 1 | 1.5 | 1 | 25 | 15 | 125x2 | 813-01 | Z |
| 50 | 500 | MG50BZ50 | Dual | 5 | 50 | 15 | 1 | 1.5 | 1 | 50 | 15 | 300x2 | 813-01 | Z |
| 75 | 500 | MG75BZ50 | Dual | 5 | 75 | 15 | 1 | 1.5 | 1 | 75 | 15 | 350x2 | 813-01 | Z |
| 100 | 500 | MG100BZ50 | Dual | 5 | 100 | 15 | 1 | 1.5 | 1 | 100 | 15 | 400x2 | 813-01 | Z |

Table 18 — TMOS Power MOSFET and IGBT Power Module Circuit Configurations and Packages.*



*Contact Motorola sales office for data sheets.



Small-Signal MOSFETs



TO-205AF
(TO-39)
CASE 79-05

Table 19 — Switches and Choppers — TO-205AF

| V _(DSS) (Volts) | r _{DS(on)} @ I _D (Ohms) | | Device | I _{D(Cont)} (Amps) | P _D @ T _C = 25°C (Watts) | Page |
|-------------------------------|--|------|---------|--------------------------------|---|-------|
| 240 | 6 | 0.5 | VN2406B | 0.63 | 2.5 | ** |
| | 10 | 0.5 | VN2410B | 0.63 | 2.5 | ** |
| 200 | 0.8 | 2.25 | 2N6790 | 3.5 | 20 | ** |
| | 0.8 | 2 | IRFF220 | 3.5 | 20 | 3-163 |
| | 1.5 | 1.5 | 2N6784 | 2.25 | 15 | 3-44 |
| | 6.4 | 0.25 | MFE9200 | 0.4 | 1.8 | 3-177 |
| 170 | 6 | 0.5 | VN1706B | 0.63 | 2.5 | ** |
| | 10 | 0.5 | VN1710B | 0.63 | 2.5 | ** |
| 100 | 0.3 | 3 | IRFF120 | 6 | 20 | 3-161 |
| 90 | 4 | 1 | 2N6661 | 0.9 | 6.25 | 3-2 |
| 60 | 3 | 1 | 2N6660 | 1.1 | 6.25 | 3-2 |
| | 5 | 0.5 | MFE910 | 1 | 6.25 | 3-171 |
| 35 | 1.8 | 1 | 2N6659 | 1.4 | 6.25 | ** |
| 30 | 1.2 | 1 | VN0300B | 1.25 | 6.25 | ** |

**Contact Motorola sales office for data sheet.

Table 20 — 4-Pin Dip — Case 370-01



CASE 370-01

P_D @ T_C = 25°C 1 Watt Max

| V _{BR(DSS)} (Volts) Min | r _{DS(on)} @ I _D (Ohms) Max | I _D (Amp) | Device | I _{D(Cont)} (Amp) Max | Page |
|--|---|-------------------------|----------|--------------------------------------|-------|
| 200 | 0.8 | 0.4 | IRFD220 | 0.8 | 3-157 |
| | 1.5 | 0.3 | IRFD210 | 0.6 | 3-155 |
| 150 | 2.4 | 0.3 | IRFD213 | 0.45 | 3-155 |
| 100 | 0.3 | 0.6 | IRFD120 | 1.3 | 3-153 |
| | 0.6 | 0.8 | IRFD110 | 1 | 3-151 |
| | 0.6 | -0.8 | IRFD9120 | -1 | ** |
| | 1.2 | -0.3 | IRFD9110 | -0.7 | ** |
| | 2.4 | 0.25 | IRFD120 | 0.5 | 3-149 |
| | 0.4 | 0.6 | IRFD123 | 1.1 | 3-153 |
| 60 | 0.8 | 0.8 | IRFD113 | 0.8 | 3-151 |
| | 0.8 | -0.8 | IRFD9123 | 0.8 | ** |

**Contact Motorola sales office for data sheet.



TO-226AA
(TO-18)
CASE 29-04

Table 21 — Plastic — TO-226AA

| $V_{(BR)DSS}$ | $r_{DS(on)} @ I_D$ | | Device | $I_D(Cont)$ (Amp) Max | $P_D @ T_C = 25^\circ C$ Watts Max | Page |
|---------------|--------------------|-------|----------|-----------------------------|--|-------|
| | Max (Ohms) | (Amp) | | | | |
| 240 | 6 | 0.5 | VN2406L | 0.158 | 0.4 | ** |
| | 10 | 0.5 | VN2410L | 0.12 | 0.4 | ** |
| 200 | 6.4 | 0.25 | BS107A | 0.25 | 0.6 | ** |
| | 6.4 | 0.25 | MPF9200 | 0.4 | 0.5 | 3-195 |
| | 14 | 0.2 | BS107 | 0.25 | 0.6 | ** |
| 170 | 6 | 0.5 | VN1706L | 0.158 | 0.4 | ** |
| | 10 | 0.5 | VN1710L | 0.12 | 0.4 | ** |
| 150 | 12 | 0.1 | MPF4150† | 0.25 | 0.625 | 3-193 |
| 60 | 5 | 0.5 | 2N7000 | 0.5 | 0.4 | 3-58 |
| | 5 | 0.2 | BS170 | 0.195 | 0.4 | 3-62 |
| | 5 | 0.5 | VN0610LL | 0.12 | 0.4 | 3-823 |
| | 7.5 | 0.5 | VN2222LL | 0.099 | 0.4 | 3-825 |
| 30 | 1.2 | 1 | VN0300L | 0.4 | 0.4 | ** |

**Contact Motorola sales office for data sheet.

†Depletion Mode



TO-236AA
(SOT-23)
CASE 318-02

Table 22 — Surface Mount — Case 318-02

| $V_{(BR)DSS}$ (Volts) Min | $r_{DS(on)} @ I_D$ | | Device | $I_D(Cont)$ (Amp) Max | $P_D @ T_C = 25^\circ C$ Watts Max | Package | Page |
|---------------------------------|--------------------|-------|---------|-----------------------------|--|---------|-------|
| | Max | (Amp) | | | | | |
| 100 | 6 | 0.1 | BSS123 | 0.17 | 0.2 | 318-02 | 3-65 |
| 60 | 5 | 0.2 | MMBF170 | 0.5 | 0.2 | 318-02 | 3-188 |
| | 7.5 | 0.5 | 2N7002 | 0.8 | 0.2 | 318-02 | 3-60 |

TO-220 Leadforms

| | | |
|---|--|---|
| <p>LEADFORM AJ</p> <p>0.790 ± 0.030 0.580 ± 0.010 0.017 ± 0.004 0.365 ± 0.015</p> | <p>LEADFORM AK</p> <p>0.590 ± 0.010 0.790 ± 0.030 0.140 ± 0.010 0.017 ± 0.004</p> | <p>LEADFORM S</p> <p>0.736 ± 0.010 0.620 ± 0.010 0.126 ± 0.010</p> |
| <p>LEADFORM W</p> <p>0.800 ± 0.010</p> | <p>LEADFORM WC</p> <p>0.750 ± 0.010</p> | <p>LEADFORM 2A</p> <p>0.600 ± 0.005</p> |
| <p>LEADFORM 3</p> <p>0.325 ± 0.020 0.460 ± 0.020 0.600 ± 0.010 0.750 ± 0.010</p> | <p>LEADFORM 3A</p> <p>0.300 ± 0.020 0.460 ± 0.020 0.600 ± 0.010 0.750 ± 0.010</p> | <p>LEADFORM 5F</p> <p>0.928 ± 0.020 0.653 ± 0.010 0.102 ± 0.015 1.030 ± 0.010</p> |
| <p>LEADFORM 5FA</p> <p>0.853 ± 0.010 0.920 ± 0.020 0.312 ± 0.015</p> | <p>LEADFORM 5R</p> <p>1.030 ± 0.020 0.853 ± 0.010 0.928 ± 0.010 0.220 ± 0.015</p> | <p>LEADFORM 5RA</p> <p>1.030 ± 0.020 0.853 ± 0.010 0.920 ± 0.020 0.220 ± 0.015</p> |
| <p>LEADFORM 10R</p> <p>1.030 ± 0.020 0.825 ± 0.010 1.000 ± 0.020 0.100 ± 0.015</p> | <p>LEADFORM 10RC</p> <p>0.825 ± 0.010 0.745 ± 0.020 0.100 ± 0.015</p> | <p>LEADFORM 15FA</p> <p>0.820 ± 0.010 0.780 ± 0.010 0.150 ± 0.015</p> |
| <p>LEADFORM 16</p> <p>0.102 ± 0.005 0.680 ± 0.005</p> | <p>LEADFORM 16A</p> <p>0.102 ± 0.005 0.005 ± 0.005</p> | <p>Ordering Information: To purchase a leadformed device, contact your local sales office and advise which leadform is required. The sales office will contact the factory and obtain a part number for you.</p> |