



## FAP-III A Series Automotive Types Logic Level Operation, Low $R_{DS(ON)}$ , High Avalanche Ruggedness, Integrated G-SSurge Protection, 60 Volts

| Device Type | Maximum Ratings     |                    |                    | Characteristics (Max.)       |                               |                       |                       |                      |                       | Package  |
|-------------|---------------------|--------------------|--------------------|------------------------------|-------------------------------|-----------------------|-----------------------|----------------------|-----------------------|----------|
|             | V <sub>DS</sub> (V) | I <sub>D</sub> (A) | P <sub>D</sub> (W) | R <sub>DS(ON)</sub> Ω VGS=4V | R <sub>DS(ON)</sub> Ω VGS=10V | C <sub>iss</sub> (pF) | C <sub>oss</sub> (pF) | t <sub>on</sub> (ns) | t <sub>off</sub> (ns) |          |
| 2SK1822-01M | 60                  | 20                 | 35                 | 0.110                        | 0.070                         | 900                   | 390                   | 56                   | 260                   | TO220F15 |
| 2SK1823-01  | 60                  | 50                 | 80                 | 0.027                        | 0.017                         | 3900                  | 1500                  | 350                  | 1411                  | TO3PF    |
| 2SK1969-01  | 60                  | 50                 | 125                | 0.027                        | 0.017                         | 3900                  | 1500                  | 350                  | 1411                  | TO3P     |

## F-III Series Logic Level Operation, Low $R_{DS(ON)}$ 30 - 250 Volts

| Device Type | Maximum Ratings     |                    |                    | Characteristics (Max.)       |                               |                       |                       |                      |                       | Package    |
|-------------|---------------------|--------------------|--------------------|------------------------------|-------------------------------|-----------------------|-----------------------|----------------------|-----------------------|------------|
|             | V <sub>DS</sub> (V) | I <sub>D</sub> (A) | P <sub>D</sub> (W) | R <sub>DS(ON)</sub> Ω VGS=4V | R <sub>DS(ON)</sub> Ω VGS=10V | C <sub>iss</sub> (pF) | C <sub>oss</sub> (pF) | t <sub>on</sub> (ns) | t <sub>off</sub> (ns) |            |
| 2SK1505M    | 30                  | 35                 | 40                 | 0.037                        | 0.022                         | 2630                  | 1200                  | 188                  | 720                   | TO220F15   |
| 2SK2048     | 30                  | 35                 | 60                 | 0.037                        | 0.022                         | 2630                  | 1200                  | 188                  | 720                   | T-PACK L,S |
| 2SK1388     | 30                  | 35                 | 60                 | 0.037                        | 0.022                         | 2630                  | 1200                  | 188                  | 720                   | TO220      |
| 2SK1083M    | 60                  | 8                  | 20                 | 0.350                        | 0.220                         | 450                   | 170                   | 55                   | 105                   | TO220F15   |
| 2SK1096M    | 60                  | 13                 | 30                 | 0.190                        | 0.120                         | 750                   | 300                   | 60                   | 180                   | TO220F15   |
| 2SK1086M    | 60                  | 20                 | 35                 | 0.110                        | 0.070                         | 1300                  | 450                   | 75                   | 310                   | TO220F15   |
| 2SK1814     | 60                  | 20                 | 35                 | 0.110                        | 0.070                         | 1300                  | 450                   | 75                   | 310                   | TO220      |
| 2SK1881     | 60                  | 20                 | 45                 | 0.110                        | 0.070                         | 1300                  | 450                   | 75                   | 310                   | T-PACK L,S |
| 2SK1387M    | 60                  | 35                 | 40                 | 0.056                        | 0.035                         | 2700                  | 930                   | 99                   | 760                   | TO220F15   |
| 2SK1089     | 60                  | 35                 | 80                 | 0.056                        | 0.035                         | 2700                  | 930                   | 99                   | 760                   | TO3P       |
| 2SK1508     | 60                  | 35                 | 60                 | 0.056                        | 0.035                         | 2700                  | 930                   | 99                   | 760                   | TO220      |
| 2SK1815     | 60                  | 35                 | 50                 | 0.056                        | 0.035                         | 2700                  | 930                   | 99                   | 760                   | TO3PF      |
| 2SK1389     | 60                  | 50                 | 125                | 0.040                        | 0.025                         | 3900                  | 1200                  | 230                  | 850                   | TO3P       |
| 2SK1390     | 60                  | 50                 | 80                 | 0.040                        | 0.025                         | 3900                  | 1200                  | 230                  | 850                   | TO3PF      |
| 2SK2049     | 75                  | 50                 | 80                 | 0.040                        | 0.025                         | 3900                  | 1200                  | 230                  | 850                   | TO220      |
| 2SK1084     | 100                 | 5                  | 20                 | 0.700                        | 0.500                         | 450                   | 100                   | 53                   | 85                    | TO220F     |
| 2SK1816     | 100                 | 5                  | 20                 | 0.700                        | 0.500                         | 450                   | 100                   | 53                   | 85                    | T-PACK L,S |
| 2SK1097     | 100                 | 8                  | 30                 | 0.390                        | 0.280                         | 900                   | 180                   | 60                   | 170                   | TO220F     |
| 2SK1087M    | 100                 | 12                 | 35                 | 0.240                        | 0.170                         | 1430                  | 300                   | 93                   | 320                   | TO220F15   |
| 2SK1817M    | 100                 | 20                 | 40                 | 0.120                        | 0.080                         | 2780                  | 600                   | 83                   | 680                   | TO220F15   |
| 2SK1090     | 100                 | 20                 | 80                 | 0.120                        | 0.080                         | 2780                  | 600                   | 83                   | 680                   | TO3P       |
| 2SK1509     | 100                 | 20                 | 60                 | 0.120                        | 0.080                         | 2780                  | 600                   | 83                   | 680                   | TO220      |
| 2SK2050     | 100                 | 30                 | 80                 | 0.070                        | 0.055                         | 3700                  | 750                   | 240                  | 1140                  | TO220      |
| 2SK1506     | 120                 | 50                 | 150                | 0.045                        | 0.030                         | 7500                  | 1380                  | 345                  | 2025                  | TO3P       |
| 2SK1085M    | 150                 | 3                  | 20                 | 1.170                        | 0.900                         | 530                   | 90                    | 50                   | 120                   | TO220F15   |
| 2SK1098     | 150                 | 6                  | 30                 | 0.650                        | 0.500                         | 900                   | 150                   | 75                   | 170                   | TO220F     |
| 2SK1088M    | 150                 | 9                  | 35                 | 0.400                        | 0.300                         | 1200                  | 230                   | 75                   | 275                   | TO220F15   |
| 2SK1091     | 150                 | 15                 | 80                 | 0.200                        | 0.150                         | 2850                  | 450                   | 83                   | 680                   | TO3P       |
| 2SK1861     | 250                 | 20                 | 80                 | 0.187                        | 0.170                         | 4500                  | 450                   | 135                  | 970                   | T-PACK L,S |

## F-V Series, FREDFET Diode Recovery Time (150-200 nsec), Improved Turn-On Time 250-500 Volts

| Device Type | Maximum Ratings     |                    |                    | Characteristics (Max.) |                       |                       |                      |                       |                      | Package  |
|-------------|---------------------|--------------------|--------------------|------------------------|-----------------------|-----------------------|----------------------|-----------------------|----------------------|----------|
|             | V <sub>DS</sub> (V) | I <sub>D</sub> (A) | P <sub>D</sub> (W) | R <sub>DS(ON)</sub> Ω  | C <sub>iss</sub> (pF) | C <sub>oss</sub> (pF) | t <sub>on</sub> (ns) | t <sub>off</sub> (ns) | t <sub>rr</sub> (nS) |          |
| 2SK1818M    | 250                 | 20                 | 45                 | 0.25                   | 1600                  | 360                   | 125                  | 450                   | 150                  | TO220F15 |
| 2SK1979     | 250                 | 20                 | 80                 | 0.20                   | 1600                  | 360                   | 125                  | 450                   | 150                  | TO3PF    |
| 2SK1276     | 250                 | 20                 | 100                | 0.20                   | 1600                  | 360                   | 125                  | 450                   | 150                  | TO3P     |
| 2SK1277     | 250                 | 30                 | 150                | 0.12                   | 3600                  | 750                   | 260                  | 900                   | 150                  | TO3P     |
| 2SK1819-01M | 450                 | 5                  | 35                 | 1.50                   | 750                   | 120                   | 85                   | 245                   | 150                  | TO220F15 |
| 2SK2052     | 500                 | 10                 | 90                 | 1.10                   | 1600                  | 210                   | 130                  | 440                   | 200                  | TO3PF    |
| 2SK1278     | 500                 | 10                 | 100                | 1.10                   | 1600                  | 210                   | 130                  | 440                   | 200                  | TO3P     |
| 2SK1279     | 500                 | 15                 | 125                | 0.58                   | 3000                  | 400                   | 195                  | 840                   | 200                  | TO3P     |
| 2SK1280     | 500                 | 18                 | 150                | 0.50                   | 3600                  | 450                   | 270                  | 920                   | 200                  | TO3P     |