

High voltage PIN diodes



SILICON PIN DIODES FOR SWITCHING & PHASE SHIFTING APPLICATIONS (MEDIUM & HIGH POWER)

Description

This series of high power, high voltage PIN diodes incorporates ceramic-glass passivated mesa technology. A broad range of products is available, in terms of breakdown voltages, junction capacitances and series resistances, to suit a large variety of applications, from 1 MHz to several GHz. These diodes are available in non-magnetic packages.

Electrical characteristics

| CHIP DIODES | | | | | CHIP AND PACKAGED DIODES | | | | |
|-------------------------|-----------------|-----------|--------------------------|---------------------|----------------------------------|------|------------------------------------|----------------|------------------------------------|
| Characteristics at 25°C | Chip dimensions | | Applicable voltage V_R | Break-down V_{BR} | Junction capacitance $C_j^{(1)}$ | | Forward series resistance R_{SF} | | Minority carrier lifetime τ_I |
| Test conditions | N/A | | $I < 10\mu A$ | $I < 10\mu A$ | $V_R = 50 V$ $f = 1 MHz$ | | $f = 120 MHz$ I_F AS SHOWN | | $I_F = 10 mA$ $I_R = 6 mA$ |
| TYPE | mm typ. | | V | V | pF | | Ω MAX | | μs |
| PIN | Gold dia | per side | min. | typ. | typ. | max | $I_F = 100 mA$ | $I_F = 200 mA$ | min. |
| EH80050 | 0.13 | 0.6 | 500 | 550 | 0.15 | 0.20 | 0.70 | 0.65 | 1.1 |
| EH80051 | 0.15 | 0.6 | 500 | 550 | 0.30 | 0.40 | 0.60 | 0.55 | 1.5 |
| EH80052 | 0.25 | 0.8 | 500 | 550 | 0.60 | 0.70 | 0.40 | 0.30 | 2.0 |
| EH80053 | 0.27 | 0.8 | 500 | 550 | 0.80 | 0.90 | 0.30 | 0.25 | 2.5 |
| EH80055 | 0.34 | 0.9 | 500 | 550 | 1.2 | 1.3 | 0.25 | 0.22 | 3.0 |
| EH80080 | 0.13 | 0.8 | 800 | 850 | 0.15 | 0.35 | 0.80 | 0.70 | 2.0 |
| EH80083 | 0.27 | 0.9 | 800 | 850 | 0.80 | 0.90 | 0.40 | 0.30 | 3.0 |
| EH80086 | 0.55 | 1.4 | 800 | 850 | 1.4 | 1.7 | 0.35 | 0.28 | 5.0 |
| EH80100 | 0.23 | 0.9 | 1000 | 1100 | 0.30 | 0.40 | 0.70 | 0.60 | 3.0 |
| EH80102 | 0.30 | 0.9 | 1000 | 1100 | 0.60 | 0.75 | 0.40 | 0.35 | 4.0 |
| EH80106 | 0.55 | 1.4 | 1000 | 1100 | 1.40 | 1.70 | 0.35 | 0.30 | 7.0 |
| | | | | | $V_R = 100V$ | | $I_F = 200 mA$ | $I_F = 300 mA$ | |
| EH80120 | 0.25 | 0.9 | 1200 | 1300 | 0.30 | 0.40 | 0.60 | 0.55 | 6.0 |
| EH80124 | 0.65 | 1.5 H (2) | 1200 | 1300 | 1.00 | 1.20 | 0.45 | 0.35 | 10.0 |
| EH80126 | 0.75 | 1.7 H (2) | 1200 | 1300 | 1.40 | 1.70 | 0.40 | 0.30 | 12.0 |
| EH80129 | 1.25 | 2.2 | 1200 | 1300 | 2.00 | 2.30 | 0.30 | 0.25 | 15.0 |
| EH80154 | 0.65 | 1.5 | 1500 | 1600 | 1.00 | 1.20 | 0.45 | 0.35 | 10.0 |
| EH80159 | 1.25 | 2.2 | 1500 | 1600 | 2.00 | 2.30 | 0.30 | 0.25 | 15.0 |
| | | | | | $V_R = 200V$ | | $I_F = 200 mA$ | $I_F = 300 mA$ | |
| EH80182 | 0.75 | 1.5 | 1800 | 1900 | 0.60 | 0.80 | 0.60 | 0.50 | 12.0 |
| EH80189 | 1.4 | 2.6 H (2) | 1800 | 1900 | 2.00 | 2.40 | 0.35 | 0.30 | 18.0 |
| EH80204 | 0.85 | 1.7 | 2000 | 2100 | 1.00 | 1.30 | 0.50 | 0.40 | 14.0 |
| EH80209 | 1.4 | 2.6 H (2) | 2000 | 2100 | 2.00 | 2.40 | 0.35 | 0.30 | 18.0 |
| EH80210 | 1.5 | 3 H (2) | 2000 | 2100 | 3.00 | 3.40 | 0.20 | 0.15 | 25.0 |

- (1) Other capacitance values available on request
- (2) Hexagonal chips (between opposite flats)



| PACKAGED DIODES | | | | | | |
|-----------------|-------------------|---------------|--------------|--|---|-------|
| Type | Standard case (3) | | | Thermal resistance R_{TH} (4) $P_{DISS} = 1 W$ | Typical operating conditions | |
| | | | | | VSWR < 1.5 $Z_0 = 50 \Omega$ Chip configuration | |
| | | | | °C/W | Frequency | Power |
| PIN | Shunt | Isolated stud | Flat mounted | max | MHz | W |
| DH80050 | F 27d | BH301 | BH202N | 20.0 | 50 - 20000 | 50 |
| DH80051 | F 27d | BH301 | BH202N | 18.0 | 30 - 15000 | 80 |
| DH80052 | F 27d | BH301 | BH202N | 15.0 | 20 - 10000 | 100 |
| DH80053 | F 27d | BH301 | BH202N | 12.0 | 20 - 3000 | 100 |
| DH80055 | F 27d | BH301 | BH202N | 10.0 | 10 - 1000 | 250 |
| DH80080 | F 27d | BH301 | BH202N | 18.0 | 50 - 20000 | 60 |
| DH80083 | F 27d | BH301 | BH202N | 12.0 | 20 - 10000 | 80 |
| DH80086 | BH35 | BH301 | BH202N | 8.0 | 10 - 500 | 200 |
| DH80100 | F 27d | BH301 | BH202N | 15.0 | 20 - 10000 | 80 |
| DH80102 | F 27d | BH301 | BH202N | 12.0 | 20 - 3000 | 100 |
| DH80106 | BH35 | BH300 | BH202N | 5.5 | 10 - 500 | 500 |
| | | | | | | |
| DH80120 | F 27d | BH301 | BH202N | 15.0 | 10 - 8000 | 100 |
| DH80124 | BH35 | BH300 | BH200 | 8.0 | 10 - 2000 | 250 |
| DH80126 | BH35 | BH300 | BH200 | 6.0 | 10 - 500 | 500 |
| DH80129 | BH141 | BH300 | BH200 | 4.5 | 5 - 200 | 1000 |
| DH80154 | BH141 | BH300 | BH200 | 8.0 | 10 - 2000 | 250 |
| DH80159 | BH141 | BH300 | BH200 | 4.5 | 5 - 200 | 1000 |
| | | | | | | |
| DH80182 | BH35 | BH300 | BH200 | 10 | 10 - 50 | |
| DH80189 | BH141 | BH300 | BH200 | 4.5 | 15 - 200 | 1000 |
| DH80204 | BH141 | BH300 | BH200 | 8.0 | 10 - 1000 | 250 |
| DH80209 | BH141 | BH300 | BH200 | 4.5 | 1.5 - 200 | 1000 |
| DH80210 | BH141 | BH300 | BH200 | 2.5 | 1.5 - 50 | 1000 |

(3) Custom cases available on request (4) R_{TH} is measured in a standard shunt case, grounded on an infinite heatsink

Temperature ranges: Operating junction (T_j): -55° C to +175° C Storage: -65° C to +200° C