

Ultra high-speed switching diode array

FMN1 / FMP1 / IMN10 / IMN11 / IMP11

UMN1N / UMP1N / UMN11N / UMP11N

●Applications

Ultra high speed switching

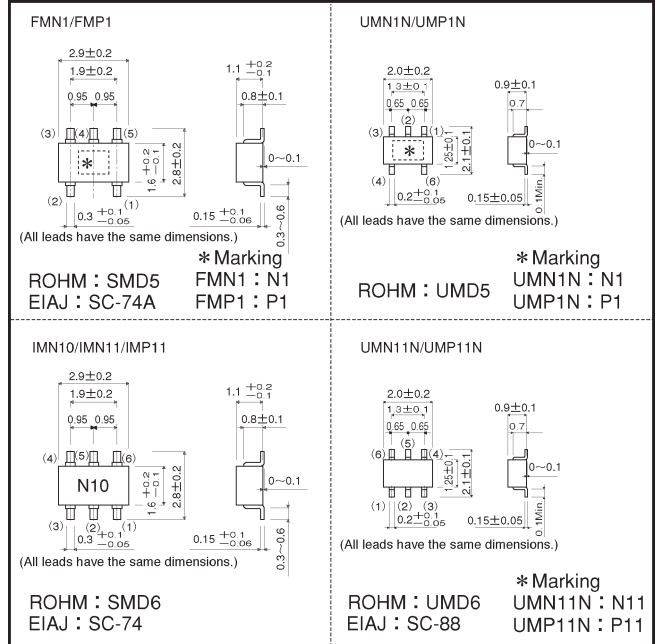
●Features

- 1) Multiple diodes in one small surface mount package.
- 2) A wide variety of configurations are available.
- 3) Diode characteristics are matched in the package.

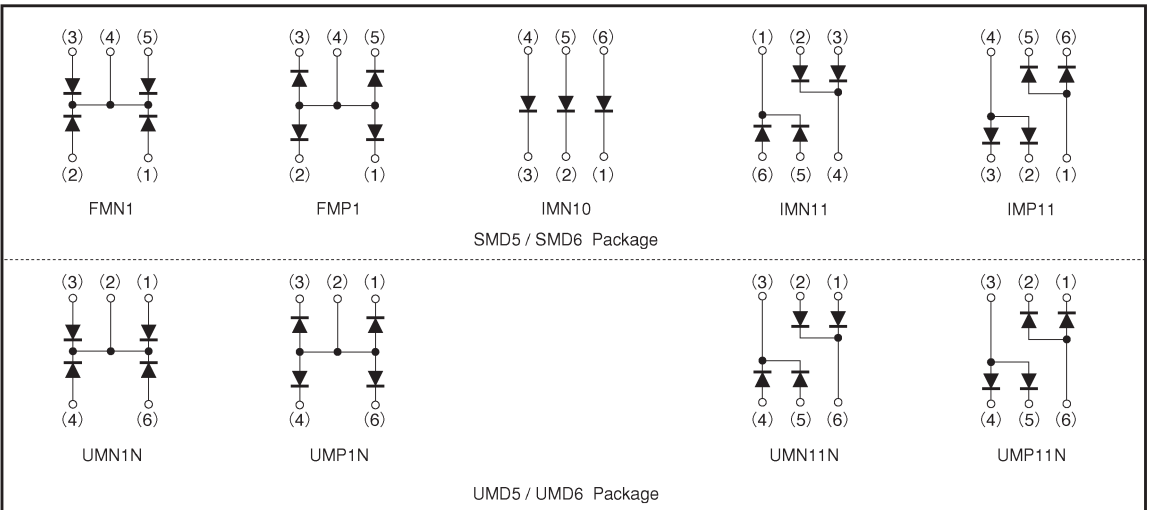
●Construction

Silicon epitaxial planar

●External dimensions (Units: mm)



●Equivalent circuits



● Absolute maximum ratings (Ta = 25°C)

| Type | Peak reverse voltage V _{RM} (V) | DC reverse voltage V _R (V) | Peak forward current I _{FM} (mA) | Mean rectifying current I _o (mA) | Surge current (1 μs) I _{surge} (A) | Power dissipation (TOTAL) Pd (mW) | Junction temperature T _j (°C) | Storage temperature T _{stg} (°C) |
|-----------------|---|--|--|--|---|---|---|--|
| FMN1 UMN1N | 80 | 80 | 80 | 25 | 0.25 | 150/80 | 150 | -55~+150 |
| FMP1 UMP1N | 80 | 80 | 80 | 25 | 0.25 | 150/80 | 150 | -55~+150 |
| IMN10 | 80 | 80 | 300 | 100 | 4 | 300 * | 150 | -55~+150 |
| IMN11 UMN11N | 80 | 80 | 300 | 100 | 4 | 300 */150 | 150 | -55~+150 |
| IMP11 UMP11N | 80 | 80 | 300 | 100 | 4 | 300 */150 | 150 | -55~+150 |

* Not to exceed 200 mW per element.

● Electrical characteristics (Ta = 25°C)

| Type | Forward voltage | | Reverse current | | Capacitance between terminals | | | Reverse recovery time | | |
|-----------------|----------------------------|---------------------|-----------------------------|--------------------|-------------------------------|--------------------|---------|-----------------------------|--------------------|---------------------|
| | V _F (V) Max. | Cond. | I _R (μA) Max. | Cond. | C _T (pF) Max. | Cond. | | t _r (ns) Max. | Cond. | |
| | | I _F (mA) | | V _R (V) | | V _R (V) | f (MHz) | | V _R (V) | I _F (mA) |
| FMN1 UMN1N | 0.9 | 5 | 0.1 | 70 | 3.5 | 6 | 1 | 4 | 6 | 5 |
| FMP1 UMP1N | 0.9 | 5 | 0.1 | 70 | 3.5 | 6 | 1 | 4 | 6 | 5 |
| IMN10 | 1.2 | 100 | 0.1 | 70 | 3.5 | 6 | 1 | 4 | 6 | 5 |
| IMN11 UMN11N | 1.2 | 100 | 0.1 | 70 | 3.5 | 6 | 1 | 4 | 6 | 5 |
| IMP11 UMP11N | 1.2 | 100 | 0.1 | 70 | 3.5 | 6 | 1 | 4 | 6 | 5 |

● Electrical characteristic curves (Ta = 25°C unless specified otherwise)

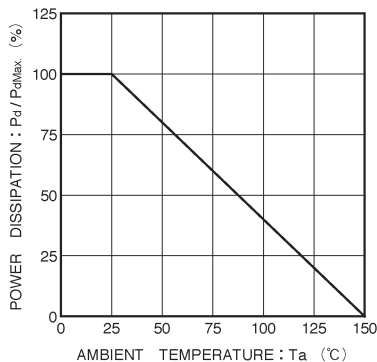


Fig. 1 Power reduction curve

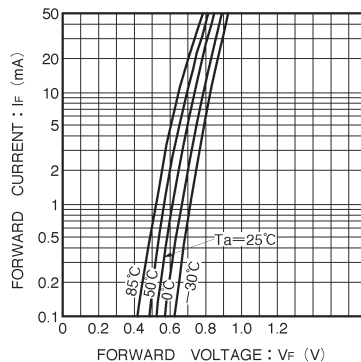


Fig. 2 Forward current vs. forward voltage (P TYPE)

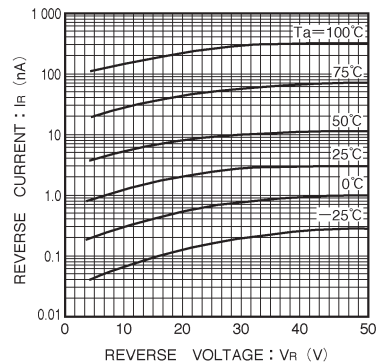


Fig. 3 Reverse current vs. reverse voltage (P TYPE)

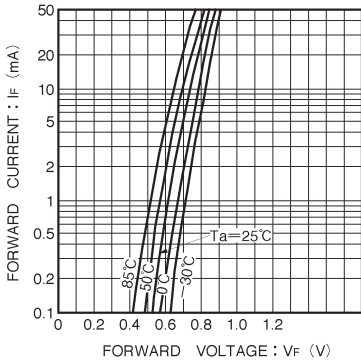


Fig. 4 Forward current vs. forward voltage (N TYPE)

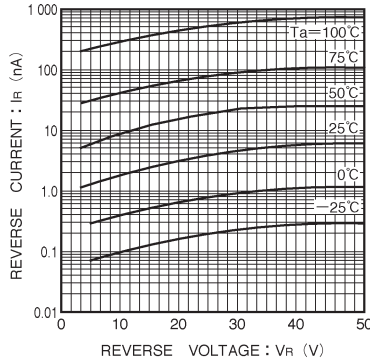


Fig. 5 Reverse current vs. reverse voltage (N TYPE)

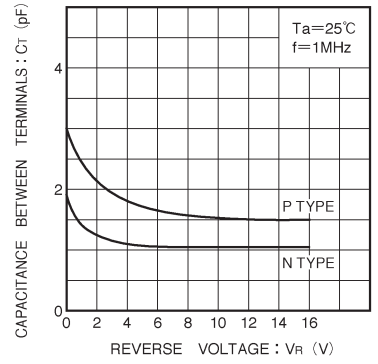


Fig. 6 Capacitance between terminals vs. reverse voltage

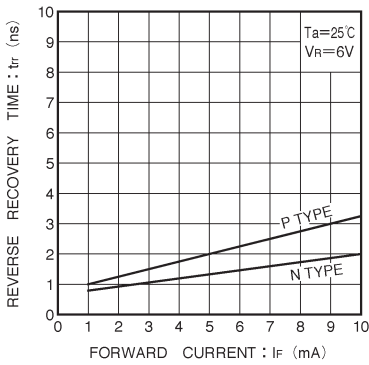


Fig. 7 Reverse recovery time vs. forward current

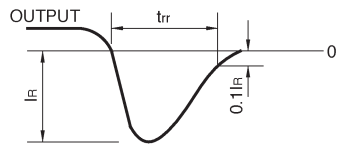
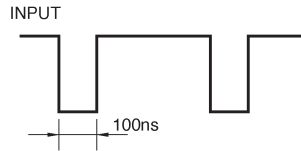
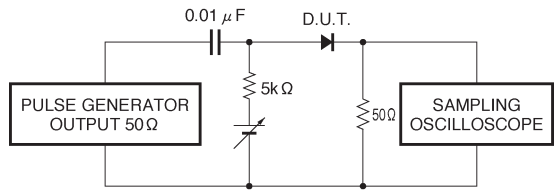


Fig. 8 Reverse recovery time (T_{rr}) measurement circuit