



# America Semiconductor

## Silicon Fast Recovery Diode

### FR16K05 thru FR16MR05

$V_{RRM} = 100\text{ V} - 1000\text{ V}$

$I_F = 16\text{ A}$

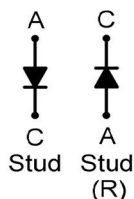
#### Features

- High Surge Capability
- Types up to 1000 V  $V_{RRM}$

DO-4 Package

#### Note:

1. Standard polarity: Stud is cathode.
2. Reverse polarity (R): Stud is anode.
3. Stud is base.



Maximum ratings, at  $T_j = 25\text{ °C}$ , unless otherwise specified ("R" devices have leads reversed)

| Parameter                                            | Symbol     | Conditions                                   | FR16K(R)05 | FR16M(R)05 | Unit |
|------------------------------------------------------|------------|----------------------------------------------|------------|------------|------|
| Repetitive peak reverse voltage                      | $V_{RRM}$  |                                              | 800        | 1000       | V    |
| RMS reverse voltage                                  | $V_{RMS}$  |                                              | 560        | 700        | V    |
| DC blocking voltage                                  | $V_{DC}$   |                                              | 800        | 1000       | V    |
| Continuous forward current                           | $I_F$      | $T_C \leq 100\text{ °C}$                     | 16         | 16         | A    |
| Surge non-repetitive forward current, Half Sine Wave | $I_{F,SM}$ | $T_C = 25\text{ °C}$ , $t_p = 8.3\text{ ms}$ | 225        | 225        | A    |
| Operating temperature                                | $T_j$      |                                              | -65 to 150 | -65 to 150 | °C   |
| Storage temperature                                  | $T_{stg}$  |                                              | -65 to 175 | -65 to 175 | °C   |

Electrical characteristics, at  $T_j = 25\text{ °C}$ , unless otherwise specified

| Parameter                           | Symbol            | Conditions                                                                | FR16K(R)05 | FR16M(R)05 | Unit |
|-------------------------------------|-------------------|---------------------------------------------------------------------------|------------|------------|------|
| Diode forward voltage               | V <sub>F</sub>    | I <sub>F</sub> = 16 A, T <sub>j</sub> = 25 °C                             | 1.4        | 1.4        | V    |
| Reverse current                     | I <sub>R</sub>    | V <sub>R</sub> = 100 V, T <sub>j</sub> = 25 °C                            | 25         | 25         | μA   |
|                                     |                   | V <sub>R</sub> = 100 V, T <sub>j</sub> = 150 °C                           | 6          | 6          | mA   |
| Recovery Time                       |                   |                                                                           |            |            |      |
| Maximum reverse recovery time       | T <sub>RR</sub>   | I <sub>F</sub> =0.5 A, I <sub>R</sub> =1.0 A,<br>I <sub>RR</sub> = 0.25 A | 500        | 500        | nS   |
| Thermal characteristics             |                   |                                                                           |            |            |      |
| Thermal resistance, junction - case | R <sub>thJC</sub> |                                                                           | 1.5        | 1.5        | °C/W |

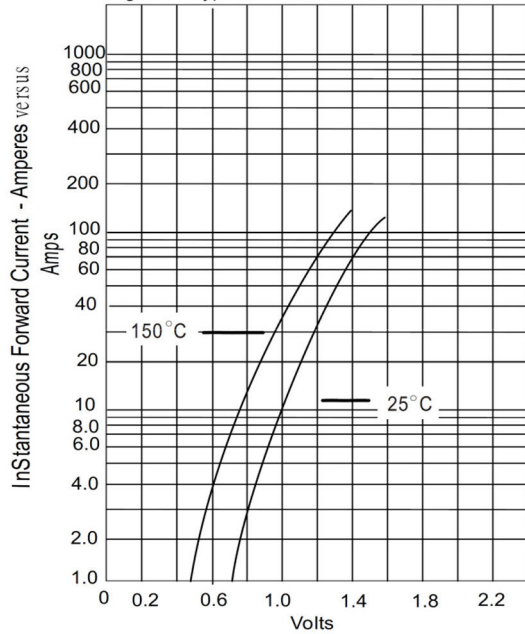




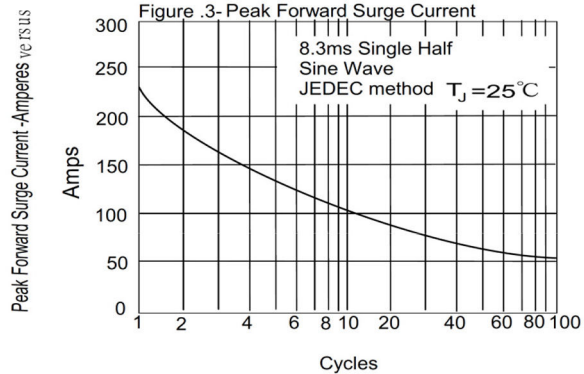
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## FR16K05 thru FR16MR05

Figure .1-Typical Forward Characteristics

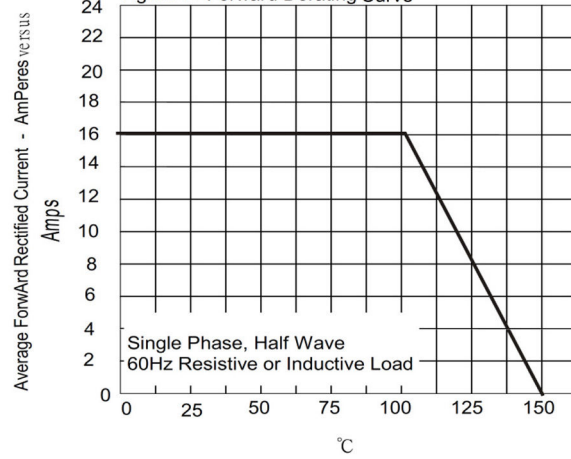


Instantaneous Forward Voltage - Volts



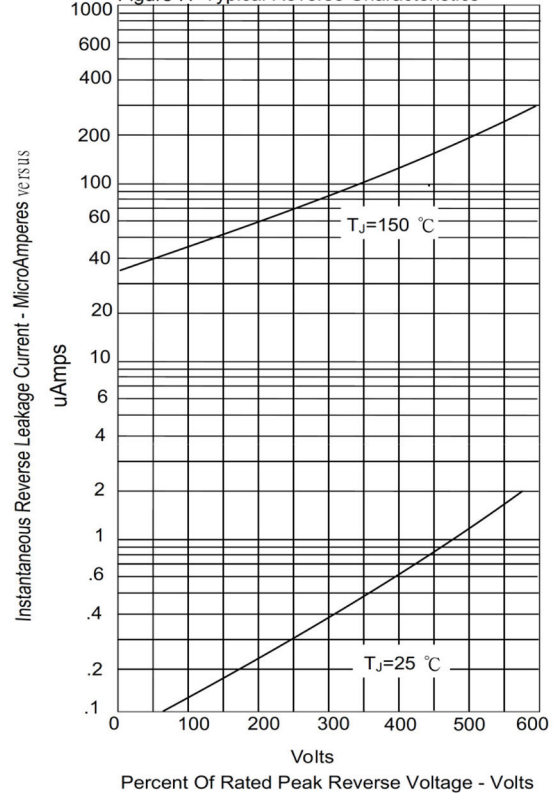
Number Of Cycles At 60Hz - Cycles

Figure .2- Forward Derating Curve



Case Temperature - °C

Figure .4- Typical Reverse Characteristics



Percent Of Rated Peak Reverse Voltage - Volts

