



**America Semiconductor**

**Silicon Fast Recovery Diode**

**FR20K05 thru  
FR20MR05**

**V<sub>RRM</sub> = 800 V - 1000 V**

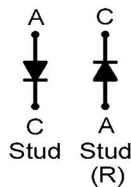
**I<sub>F</sub> = 20 A**

**Features**

- High Surge Capability
- Types up to 1000 V V<sub>RRM</sub>

**Note:**

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



**DO-5 Package**



**Maximum ratings, at T<sub>j</sub> = 25 °C, unless otherwise specified ("R" devices have leads reversed)**

Parameter	Symbol	Conditions	FR20K(R)05	FR20M(R)05	Unit
Repetitive peak reverse voltage	V <sub>RRM</sub>		800	1000	V
RMS reverse voltage	V <sub>RMS</sub>		560	700	V
DC blocking voltage	V <sub>DC</sub>		800	1000	V
Continuous forward current	I <sub>F</sub>	T <sub>C</sub> ≤ 100 °C	20	20	A
Surge non-repetitive forward current, Half Sine Wave	I <sub>F,SM</sub>	T <sub>C</sub> = 25 °C, t <sub>p</sub> = 8.3 ms	250	250	A
Operating temperature	T <sub>j</sub>		-40 to 125	-40 to 125	°C
Storage temperature	T <sub>stg</sub>		-40 to 150	-40 to 150	°C

**Electrical characteristics, at T<sub>j</sub> = 25 °C, unless otherwise specified**

Parameter	Symbol	Conditions	FR20K(R)05	FR20M(R)05	Unit
Diode forward voltage	V <sub>F</sub>	I <sub>F</sub> = 20 A, T <sub>j</sub> = 25 °C	1.4	1.4	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 800 V, T <sub>j</sub> = 25 °C	25	25	μA
		V <sub>R</sub> = 800 V, T <sub>j</sub> = 125 °C	10	10	mA
<b>Recovery Time</b>					
Maximum reverse recovery time	T <sub>RR</sub>	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>RR</sub> = 0.25 A	500	500	nS
<b>Thermal characteristics</b>					
Thermal resistance, junction - case	R <sub>thJC</sub>		0.6	0.6	°C/W





Figure .1-Typical Forward Characteristics

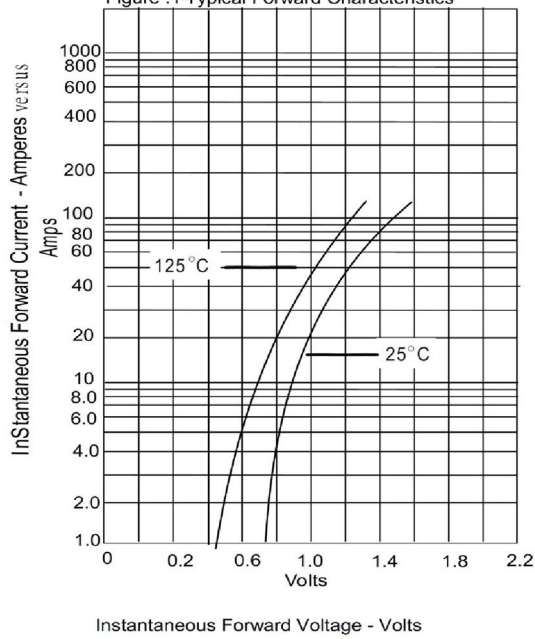


Figure .2-Forward Derating Curve

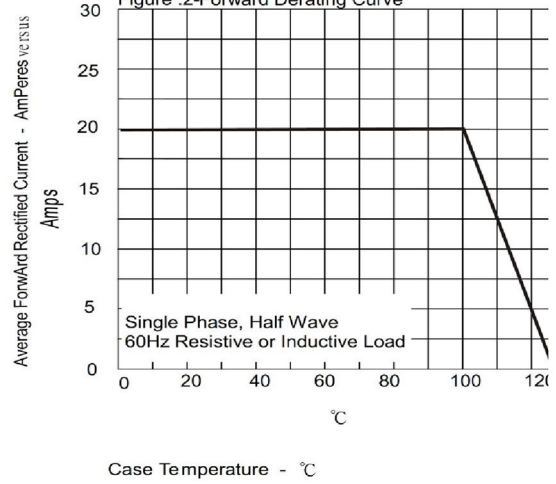


Figure .4-Typical Reverse Characteristics

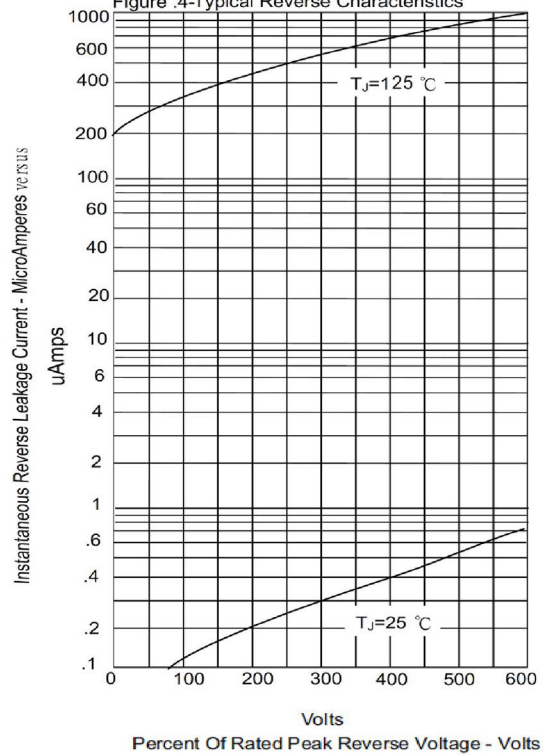


Figure .3-Peak Forward Surge Current

