

## HIGH RELIABILITY FAST RECOVERY RECTIFIER

Qualified per MIL-PRF-19500/308

- 150°C Junction Temperature
- VRRM 50 to 400 Volts
- 50 Amps Current Rating

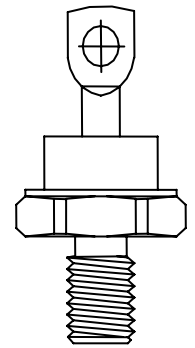
### DEVICES

1N3909	1N3912	1N3910A	1N3913A	1N3911R	1N3909AR	1N3912AR
1N3910	1N3913	1N3911A	1N3909R	1N3912R	1N3910AR	1N3913AR
1N3911	1N3909A	1N3912A	1N3910R	1N3913R	1N3911AR	

LEVELS  
 JAN  
 JANTX  
 JANTXV

### ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = +25°C unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Peak Reverse Voltage	V <sub>RWM</sub>	1N3909 / A / R / AR	50
		1N3910 / A / R / AR	100
		1N3911 / A / R / AR	200
		1N3912 / A / R / AR	300
		1N3913 / A / R / AR	400
Peak Working Reverse Voltage	V <sub>RRM</sub>	1N3909 / A / R / AR	50
		1N3910 / A / R / AR	100
		1N3911 / A / R / AR	200
		1N3912 / A / R / AR	300
		1N3913 / A / R / AR	400
Average Forward Current, T <sub>C</sub> = 100°	I <sub>F</sub>	50	A
Peak Surge Forward Current @ 8.3ms, half sinewave, T <sub>C</sub> = 100°C	I <sub>FSM</sub>	1N3909 / R Thru 1N3913 / R	300
		1N3909A / AR Thru 1N3913A / AR	400
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.8	°C/W
Operating Case Temperature Range	T <sub>j</sub>	-65°C to 150°C	°C
Storage Temperature Range	T <sub>STG</sub>	-65°C to 175°C	°C



DO-203AB (DO-5)

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = +25°C, unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage I <sub>FM</sub> = 50A, T <sub>C</sub> = 25°C*	V <sub>FM</sub>		1.4	V
Forward Voltage I <sub>FM</sub> = 400A, T <sub>C</sub> = 150°C**	V <sub>FM</sub>		2.75	V
Reverse Current V <sub>RM</sub> = 50V, T <sub>C</sub> = 25°C	I <sub>RM</sub>		15	μA
V <sub>RM</sub> = 100V, T <sub>C</sub> = 25°C				
V <sub>RM</sub> = 200V, T <sub>C</sub> = 25°C				
V <sub>RM</sub> = 300V, T <sub>C</sub> = 25°C				
V <sub>RM</sub> = 400V, T <sub>C</sub> = 25°C				
Reverse Current V <sub>RM</sub> = 50V, T <sub>C</sub> = 150°C	I <sub>RM</sub>		6	mA
V <sub>RM</sub> = 100V, T <sub>C</sub> = 150°C				
V <sub>RM</sub> = 200V, T <sub>C</sub> = 150°C				
V <sub>RM</sub> = 300V, T <sub>C</sub> = 150°C				
V <sub>RM</sub> = 400V, T <sub>C</sub> = 150°C				
Reverse Recovery Time V <sub>RM</sub> = 30V, I <sub>F</sub> = 1A	T <sub>rr</sub>		200 150	ns

\* Pulse test: Pulse width 300 μsec, Duty cycle 2%

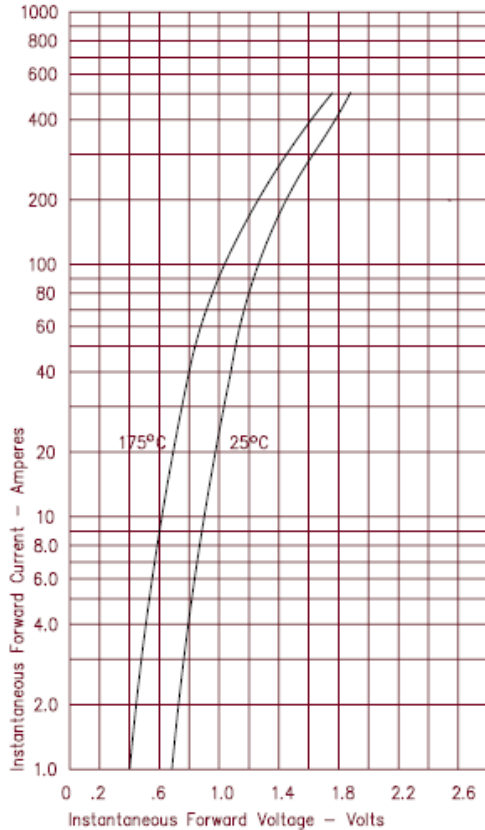
\*\* Pulse test: Pulse width 800 μsec

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### GRAPHS

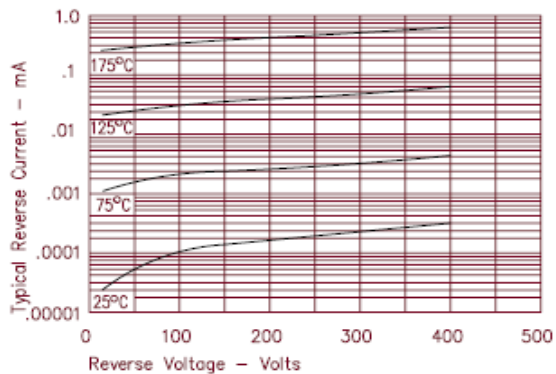
**FIGURE 1**

**TYPICAL FORWARD CHARACTERISTICS**



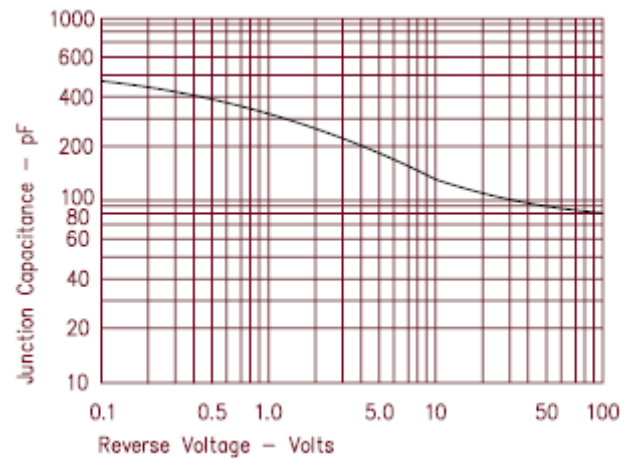
**FIGURE 2**

**TYPICAL REVERSE CHARACTERISTICS**



**FIGURE 3**

**TYPICAL JUNCTION CAPACITANCE**



**FIGURE 4**

**FORWARD CURRENT DERATING**

