

## HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

Qualified per MIL-PRF-19500/550

- 800 Amps Surge Rating
- VRRM 50 to 150 Volts
- 70 Amps Current Rating

### DEVICES

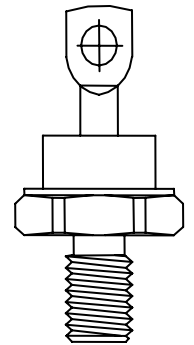
<b>1N6304</b>	<b>1N6304R</b>
<b>1N6305</b>	<b>1N6305R</b>
<b>1N6306</b>	<b>1N6306R</b>

### LEVELS

<b>JAN</b>
<b>JANTX</b>
<b>JANTXV</b>

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

Parameters / Test Conditions	Symbol	Value	Unit
Peak Repetitive Reverse Voltage 1N6304 / R 1N6305 / R 1N6306 / R	V <sub>RWM</sub>	50 100 150	V
Peak Working Reverse Voltage 1N6304 / R 1N6305 / R 1N6306 / R	V <sub>RRM</sub>	50 100 150	V
Average Forward Current, T <sub>C</sub> = 100°	I <sub>F</sub>	70	A
Peak Surge Forward Current @ t <sub>p</sub> = 8.3ms, half sinewave, T <sub>C</sub> = 55°C	I <sub>FSM</sub>	800	A
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.8	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-65°C to 175°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)

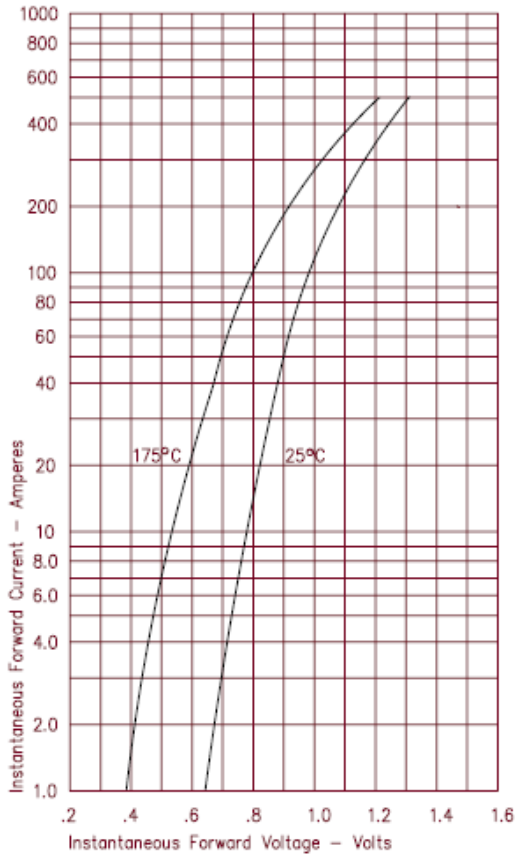
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage I <sub>FM</sub> = 70A, T <sub>C</sub> = 25°C*	V <sub>FM</sub>		0.975	V
Forward Voltage I <sub>FM</sub> = 150A, T <sub>C</sub> = 25°C*	V <sub>FM</sub>		1.18	V
Forward Voltage I <sub>FM</sub> = 70A, T <sub>C</sub> = 150°C*	V <sub>FM</sub>		0.84	V
Reverse Current V <sub>RM</sub> = 50V, T <sub>C</sub> = 25°C V <sub>RM</sub> = 100V, T <sub>C</sub> = 25°C V <sub>RM</sub> = 150V, T <sub>C</sub> = 25°C	I <sub>RM</sub>		25	μA
Reverse Current V <sub>RM</sub> = 50V, T <sub>C</sub> = 150°C V <sub>RM</sub> = 100V, T <sub>C</sub> = 150°C V <sub>RM</sub> = 150V, T <sub>C</sub> = 150°C	I <sub>RM</sub>		30	mA
Reverse Recovery Time I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A	T <sub>rr</sub>		50	ns
Reverse Recovery Time I <sub>F</sub> = 70A	T <sub>rr</sub>		60	ns
Capacitance Junction V <sub>R</sub> = 10V, f = 1MHz, T <sub>J</sub> = 25°C	C <sub>J</sub>		600	pF

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

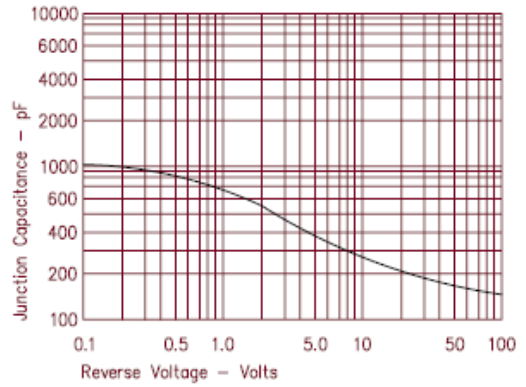
## HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

### GRAPHS

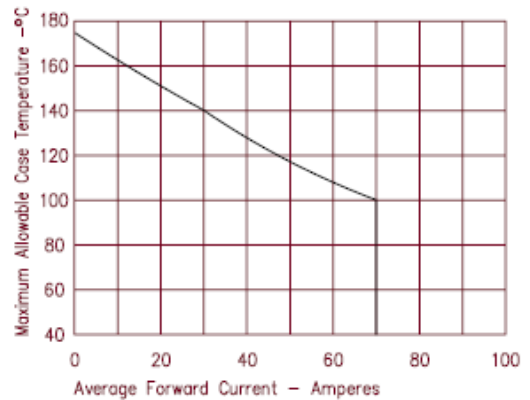
**FIGURE 1**  
**TYPICAL FORWARD CHARACTERISTICS**



**FIGURE 3**  
**TYPICAL JUNCTION CAPACITANCE**



**FIGURE 4**  
**FORWARD CURRENT DERATING**



**FIGURE 2**  
**TYPICAL REVERSE CHARACTERISTICS**

