

# 1N6304(R)-1N6306(R)

## 70 AMP ULTRAFAST RECTIFIER

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Peak repetitive reverse voltage	1N6304(R)	$V_{RWM}$	50	Volts
	1N6305(R)		100	
	1N6306(R)		150	
Peak working reverse voltage	1N6304(R)	$V_{RRM}$	50	Volts
	1N6305(R)		100	
	1N6306(R)		150	
Average forward current @ $T_C = 100^\circ\text{C}$		$I_F$	70	Amps
Peak surge forward current @ $t_p = 8.3\text{ms}$ half sine wave, $T_C = 55^\circ\text{C}$		$I_{FSM}$	800	Amps
Thermal resistance, junction to case		$R_{\theta JC}$	0.8	$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range		$T_J, T_{stg}$	-65 to +175	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Maximum	Unit
Forward voltage $I_{FM} = 70\text{A}, T_C = 25^\circ\text{C} *$		$V_{FM}$	0.975	Volts
Forward voltage $I_{FM} = 150\text{A}, T_C = 25^\circ\text{C} *$		$V_{FM}$	1.18	Volts
Forward voltage $I_{FM} = 70\text{A}, T_C = 150^\circ\text{C} *$		$V_{FM}$	0.84	Volts
Reverse current $V_{RM} = 50\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 100\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 150\text{V}, T_C = 25^\circ\text{C}$	1N6304(R) 1N6305(R) 1N6306(R)	$I_{RM}$	25	$\mu\text{A}$
Reverse current $V_{RM} = 50\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 100\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 150\text{V}, T_C = 150^\circ\text{C}$	1N6304(R) 1N6305(R) 1N6306(R)	$I_{RM}$	30	mA
Reverse recovery time $I_F = 0.5\text{A}, I_R = 1\text{A}$		$T_{rr}$	50	ns
Reverse recovery time $I_F = 70\text{A}$		$T_{rr}$	60	ns
Capacitance junction $V_R = 10\text{V}, f = 1\text{MHz}, T_J = 25^\circ\text{C}$		$C_J$	600	pF

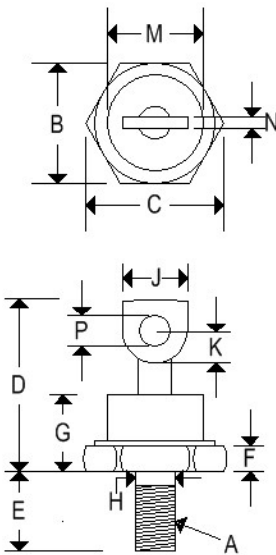
\*Pulse test: pulse width 300 $\mu\text{sec}$ , duty cycle 2%.

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## MECHANICAL CHARACTERISTICS

Case	DO-5(R)
Marking	Alpha numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)

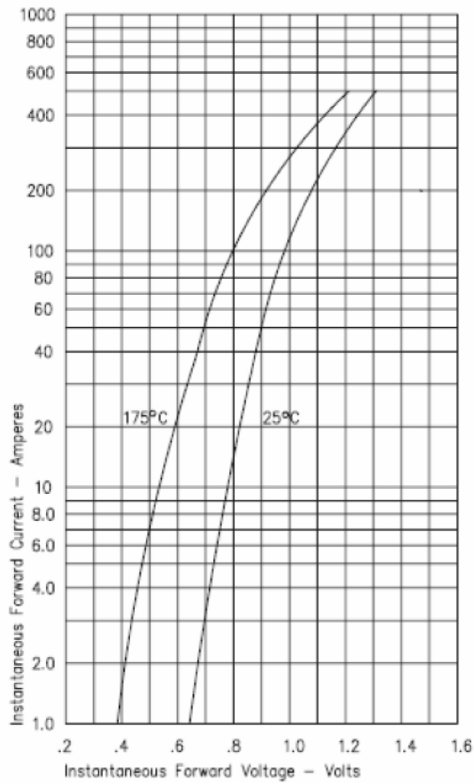


	DO-5(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	¼-28 UNF2A threads			
B	0.669	0.688	16.990	17.480
C	-	0.794	-	20.160
D	-	1.000	-	25.400
E	0.422	0.453	10.720	11.510
F	0.115	0.200	2.920	5.080
G	-	0.450	-	11.430
H	0.220	0.249	5.580	6.320
J	0.250	0.375	6.350	9.530
K	0.156	-	3.960	-
M	-	0.667	-	16.940
N	0.030	0.080	0.760	2.030
P	0.140	0.175	3.560	4.450

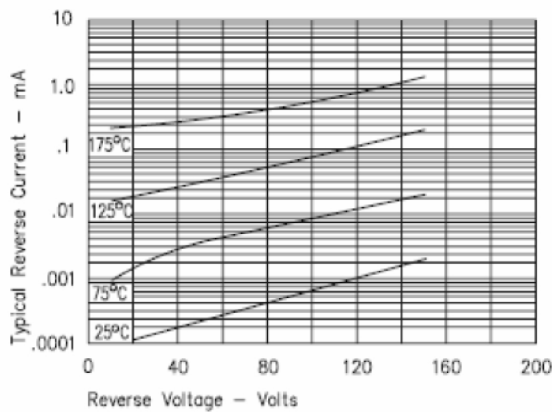
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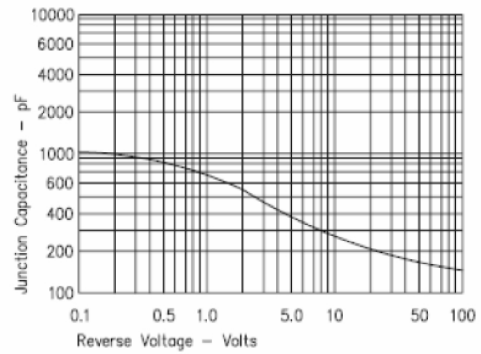
**FIGURE 1**  
**TYPICAL FORWARD CHARACTERISTICS**



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



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



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

