

### High-reliability discrete products and engineering services since 1977

## 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)		50	
	1N6305(R)	$V_{RWM}$	100	Volts
	1N6306(R)		150	
Peak working reverse voltage	1N6304(R)		50	
	1N6305(R)	$V_{RRM}$	100	Volts
	1N6306(R)		150	
Average forward current @ T <sub>C</sub> = 100°C		I <sub>F</sub>	70	Amps
Peak surge forward current @ $t_p$ = 8.3ms half sine wave, $T_C$ = 55°C		I <sub>FSM</sub>	800	Amps
Thermal resistance, junction to case		R <sub>eJC</sub>	0.8	°C/W
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>stg</sub>	-65 to +175	°C

### **ELECTRICAL CHARACTERSITICS** (T<sub>A</sub> = 25°C unless otherwise specified)

Parameter		Symbol	Maximum	Unit
Forward voltage		V	0.975	Volts
I <sub>FM</sub> = 70A, T <sub>C</sub> = 25°C *		V <sub>FM</sub>	0.975	VOILS
Forward voltage		V <sub>FM</sub>	1.18	Volts
$I_{FM} = 150A, T_C = 25^{\circ}C^{*}$		V <sub>FM</sub>	1.16	VOILS
Forward voltage		V <sub>FM</sub>	0.84	Volts
I <sub>FM</sub> = 70A, T <sub>C</sub> = 150°C *		VFM		
Reverse current				
$V_{RM} = 50V, T_C = 25^{\circ}C$	1N6304(R)		25	μΑ
$V_{RM} = 100V, T_C = 25^{\circ}C$	1N6305(R)	I <sub>RM</sub>		
$V_{RM} = 150V, T_C = 25^{\circ}C$	1N6306(R)			
Reverse current			30	mA
$V_{RM} = 50V, T_C = 150^{\circ}C$	1N6304(R)	I <sub>RM</sub>		
$V_{RM} = 100V, T_C = 150^{\circ}C$	1N6305(R)			
$V_{RM} = 150V, T_C = 150^{\circ}C$	1N6306(R)			
Reverse recovery time		T <sub>rr</sub>	50	ns
$I_F = 0.5A$ , $I_R = 1A$		ı tt		
Reverse recovery time		T <sub>rr</sub>	60	ns
I <sub>F</sub> = 70A		I rr	OU .	115
Capacitance junction			600	~F
$V_R = 10V$ , $f = 1MHz$ , $T_J = 25$ °C		C <sub>J</sub>	600	pF

<sup>\*</sup>Pulse test: pulse width 300µsec, duty cycle 2%.



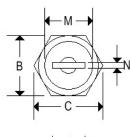
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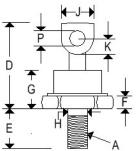
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### MECHANICAL CHARACTERISTICS

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		
Α	1/4-28 UNF2A threads					
В	0.669	0.688	16.990	17.480		
С	-	0.794	-	20.160		
D	-	1.000	-	25.400		
Е	0.422	0.453	10.720	11.510		
F	0115	0.200	2.920	5.080		
G	-	0.450	-	11.430		
Н	0.220	0.249	5.580	6.320		
J	0.250	0.375	6.350	9.530		
K	0.156	-	3.960	-		
М	-	0.667	-	16.940		
N	0.030	0.080	0.760	2.030		
Р	0.140	0.175	3.560	4.450		



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FIGURE 1
TYPICAL FORWARD CHARACTERISTICS

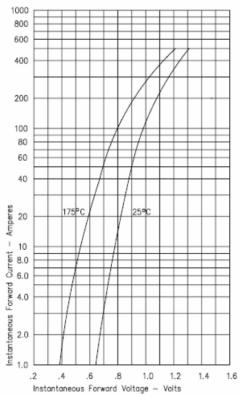
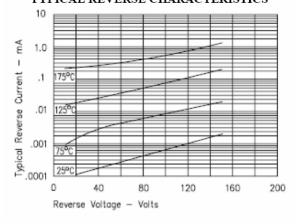


FIGURE 2
TYPICAL REVERSE CHARACTERISTICS



### FIGURE 3 TYPICAL JUNCTION CAPACITANCE

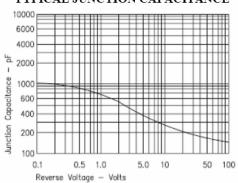


FIGURE 4
FORWARD CURRENT DERATING

