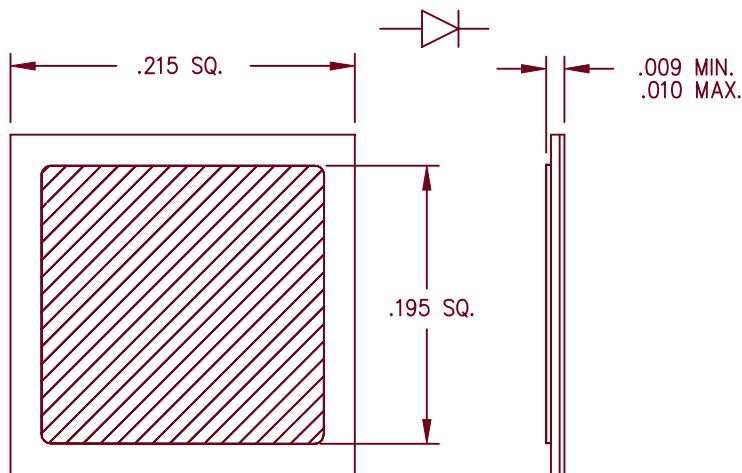


# Class HC and Class KC Equivalents 1N6304-06 Ultrafast Rectifier Die



- Ultrafast Recovery Rectifier
- Glass passivated
- 70A Average, up to 150V
- Solderable silver both sides
- Available with Al top and/or gold back – contact factory
- Cells with moly discs available – contact factory

Part Number	V <sub>RRM</sub>
1N6304HCE	50V
1N6304KCE	50V
1N6305HCE	100V
1N6305KCE	100V
1N6306HCE	150V
1N6306KCE	150V

## Electrical Characteristics (Properly Packaged)

Average forward current	I <sub>F(AV)</sub> 70 Amps	T <sub>C</sub> = 100°C, Square wave, R <sub>θJC</sub> = 0.8°C/W
Maximum surge current	I <sub>FSM</sub> 800 Amps	8.3 ms, half sine, T <sub>J</sub> = 55°C
Max peak forward voltage	V <sub>FM</sub> .975 Volts	I <sub>FM</sub> = 70A: T <sub>J</sub> = 25°C*
Max peak forward voltage	V <sub>FM</sub> 1.18 Volts	I <sub>FM</sub> = 150A: T <sub>J</sub> = 25°C*
Max peak forward voltage	V <sub>FM</sub> .84 Volts	I <sub>FM</sub> = 70A: T <sub>J</sub> = 150°C*
Max peak reverse current	I <sub>RM</sub> 30 mA	V <sub>RRM</sub> , T <sub>J</sub> = 150°C*
Max peak reverse current	I <sub>RM</sub> 25 uA	V <sub>RRM</sub> , T <sub>J</sub> = 25°C*
Max reverse recovery time	t <sub>RR</sub> 50 ns	I <sub>F</sub> = .5A, I <sub>R</sub> = 1A, (REC) = .25A, di/dt = 85A/μs
Max reverse recovery time	t <sub>RR</sub> 60 ns	70A, 130A/μs, T <sub>J</sub> = 25°C
Maximum junction capacitance	C <sub>J</sub> 600 pF	V <sub>R</sub> = 10V, f = 1Mhz, T <sub>J</sub> = 25°C

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

## Group A Die Element Evaluation Electrical Tests

	Method	Symbol	Min. Limit	Max. Limit	Unit
<u>Subgroup 2</u>					
Forward voltage @ 70A <sub>pk</sub>	4011	V <sub>F1</sub>		0.975	V <sub>dc</sub> (pk)
Forward voltage @ 150A <sub>pk</sub>	4011	V <sub>F2</sub>		1.18	V <sub>dc</sub> (pk)
Forward voltage @ rated V <sub>R</sub>	4016	I <sub>R1</sub>		25	uA dc
<u>Subgroup 3</u>					
Reverse current @ rated V <sub>R</sub> , 150°C	4016	I <sub>R2</sub>		30	mA dc
Forward voltage @ 70A <sub>pk</sub> , 150°C	4011	V <sub>F3</sub>		0.84	V(pk)
Breakdown volt. @ 1 mA, -55°C	4021	V(BR)		400	mA(pk)
1N6304			50		V <sub>dc</sub>
1N6305			100		V <sub>dc</sub>
1N6306			150		V <sub>dc</sub>
<u>Subgroup 4</u>					
Reverse recovery time @ 1/2A	4031	t <sub>rr1</sub>		50	ns
Reverse recovery time @ 70A	4031	t <sub>rr2</sub>		60	ns
Capacitance @ V <sub>R</sub> = 10V	4001	C <sub>J</sub>		600	pF
<u>Subgroup 7</u>					
Forward recovery voltage	4026	V <sub>F</sub> (Dyn)		2.2	V(pk)
Forward recovery time	4026	t <sub>rr</sub>		15	ns

7-30-01 Rev. IR



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