



PCRKA20065F8

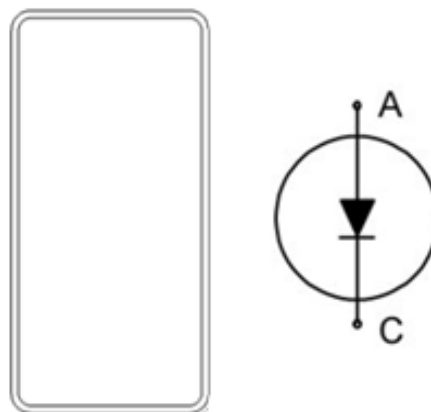
650V / 200A Extremefast Diode

Features

- AEC-Q101 Qualified
- Maximum Junction Temperature 175°C
- Extremefast technology with Soft Recovery
- Low Forward Voltage ($V_F = 1.35V$ (Typ) @ $I_F = 200A$)

Applications

- Automotive Traction Modules
- General Power Modules



Ordering Information

P/N	PCRKA20065F8	
Packing	Wafer (Saw-On-Foil)	
	mils	mm
Die Size	197 X 394	5,000 X 10,000
Anode Area	176 X 373	4,478 X 9,475
Die thickness	3	77± 8
Top Metal	Al (0.5% Cu)	
Back Metal	VNi/Ag	
Topside Passivation	Silicon Nitride Plus Polyimide	
Wafer diameter	200mm	
Max. Possible Die per Wafer	487	

Absolute Maximum Ratings ($T_{VJ} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Ratings	Units
V_R	Voltage Cathode to Anode	650	V
I_F	Continuous forward current	(Note 1)	A
T_{VJ}	Junction Temperature Range	-55 to +175	$^{\circ}\text{C}$
	Operating Junction Temperature	-55 to +150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	+17 to +25	$^{\circ}\text{C}$

Notes:

1: Depends on the thermal properties of assembly

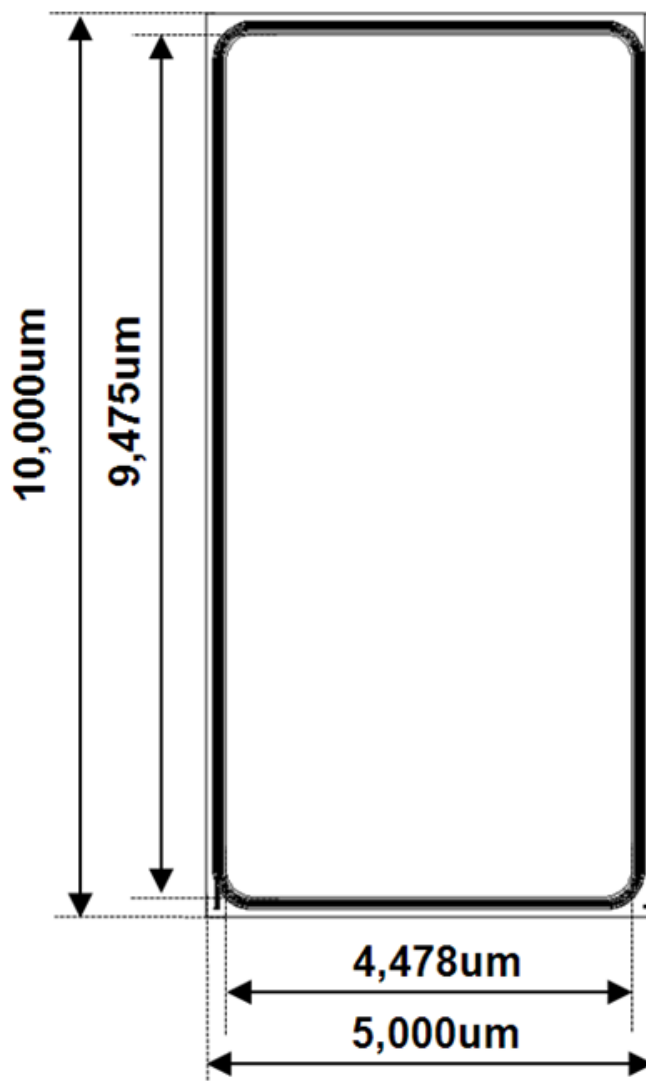
Electrical Characteristics of the Diode ($T_{VJ} = 25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
Static Characteristics (tested on wafer)						
I_R	Reverse Current	$V_R = 650\text{V}$	-	-	30	μA
V_{BR}	Breakdown Voltage	$I_R = 1\text{mA}$	650	-	-	V
V_F	Forward Voltage	$I_F = 100\text{A}$	0.7	1.15	1.7	V
Electrical Characteristics (not subject to production test, verified by design / characterization)						
I_R	Reverse Current	$V_R = 650\text{V}, T_{VJ} = 175^{\circ}\text{C}$	-	850		μA
V_F	Forward Voltage	$I_F = 200\text{A}$	-	1.35	1.9	V
		$I_F = 200\text{A}, T_{VJ} = 175^{\circ}\text{C}$	-	1.30	-	V
Q_{rr}	Reverse Recovery Charge	$I_F = 200\text{A}, V_R = 400\text{V},$ $dI_F/dt = 1000\text{A}/\mu\text{s}, T_{VJ} = 25^{\circ}\text{C}$	-	3.2		μC
I_{rr}	Reverse Recovery Current		-	55		A
T_{rr}	Reverse Recovery Time		-	117		ns
Q_{rr}	Reverse Recovery Charge	$I_F = 200\text{A}, V_R = 400\text{V},$ $dI_F/dt = 1000\text{A}/\mu\text{s}, T_{VJ} = 175^{\circ}\text{C}$	-	15.1		μC
I_{rr}	Reverse Recovery Current		-	122		A
T_{rr}	Reverse Recovery Time		-	247		ns

For ordering, technique and other information on Fairchild automotive bare die products, please contact automotivedie@fairchildsemi.com




Physical Dimensions







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