



PCRKA30065F8

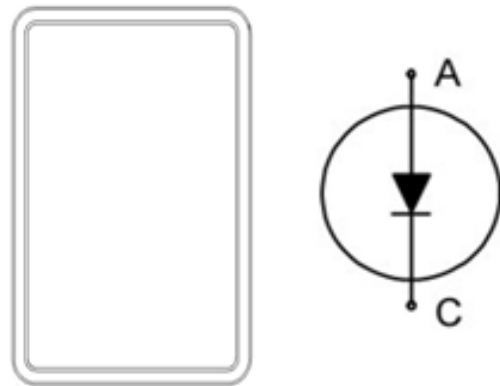
650V / 300A Extremefast Diode

Features

- AEC-Q101 Qualified
- Maximum Junction Temperature 175°C
- Extremefast technology with Soft Recovery
- Low Forward Voltage ($V_F = 1.06V$ (Typ) @ $I_F = 300A$)

Applications

- Automotive Traction Modules
- General Power Modules



Ordering Information

P/N	PCRKA30065F8	
Packing	Wafer (Sawn-on-foil)	
	Mils	Microns
Die Size	283 X 394	7,200 X 10,000
Anode Area	235 X 345	5,970 X 8,770
Die thickness	3	77
Top metal	Al (0.5% Cu)	
Back metal	VNi/Ag	
Topside Passivation	SiN and Polyimide	
Wafer diameter	200mm	
Max. Possible Die per Wafer	331	

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

Symbol	Parameter	Ratings	Units
V_R	Voltage Cathode to Anode	650	V
I_F	Continuous forward current	(Note 1)	A
T_J	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
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Static Characteristics (Tested on wafers)

I_R	Reverse Leakage Current	$V_R = 650\text{V}$	-	-	30	μA
V_{BR}	Breakdown Voltage	$I_R = 1\text{mA}$	650	-	-	V
V_F	Forward Voltage	$I_F = 100\text{A}$	-	1.06	1.65	V

Electrical Characteristics (Not subject to production test, verified by design /characterization)

I_R	Reverse Leakage Current	$V_R = 650\text{V}, T_{VJ} = 175^{\circ}\text{C}$	-	2	-	mA
V_F	Forward Voltage	$I_F = 300\text{A}$	-	1.29	1.9	V
		$I_F = 300\text{A}, T_{VJ} = 175^{\circ}\text{C}$	-	1.18	-	V
Q_{rr}	Reverse Recovery Charge	$I_F = 300\text{A}, V_R = 300\text{V},$ $dI_F/dt = 1500\text{A}/\mu\text{s}$	-	6.4	-	μC
I_{rr}	Reverse Recovery Current		-	130	-	A
T_{rr}	Reverse Recovery Time		-	86.4	-	ns

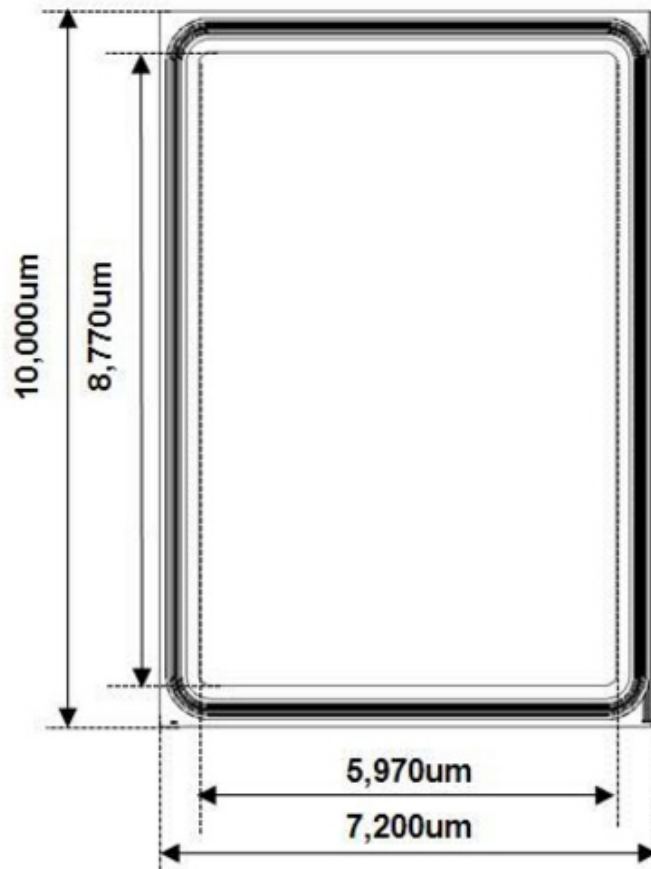
For ordering, technique and other information on Fairchild automotive bare die products, please contact automotivedie@fairchildsemi.com



Physical Dimensions




PCRKA30065F8 650V/300A Extremefast Diode







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