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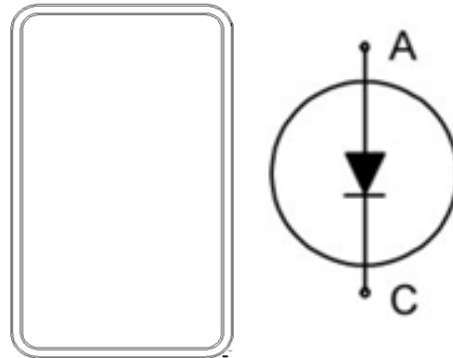
PCRKA16065F8 650V/160A Extremefast Diode

PCRKA16065F8

650V / 160A Extremefast Diode

Features

- AEC-Q101 Qualified
- Maximum Junction Temperature 175°C
- Extremefast Technology with Soft Recovery
- Low Forward Voltage ($V_F = 1.4V$ (Typ) @ $I_F = 160A$)



Applications

- Automotive Traction Modules
- General Power Modules

Ordering Information

P/N	PCRKA16065F8	
Packing	Wafer (Saw-On-Foil)	
	mils	μm
Die Size	165 X 283	4,200 X 7,200
Anode Area	145 x 263	3,678 x 6,678
Scribe Lane	3.14	80
Die thickness	3	77
Top Metal	Al (0.5% Cu)	
Back Metal	VNi/Ag	
Topside Passivation	Silicon Nitride Plus Polyimide	
Wafer diameter	200mm	
Max. Possible Die per Wafer	788	

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	$^{\circ}\text{C}$
Tstg	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 specified)

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	1.21	1.75	V

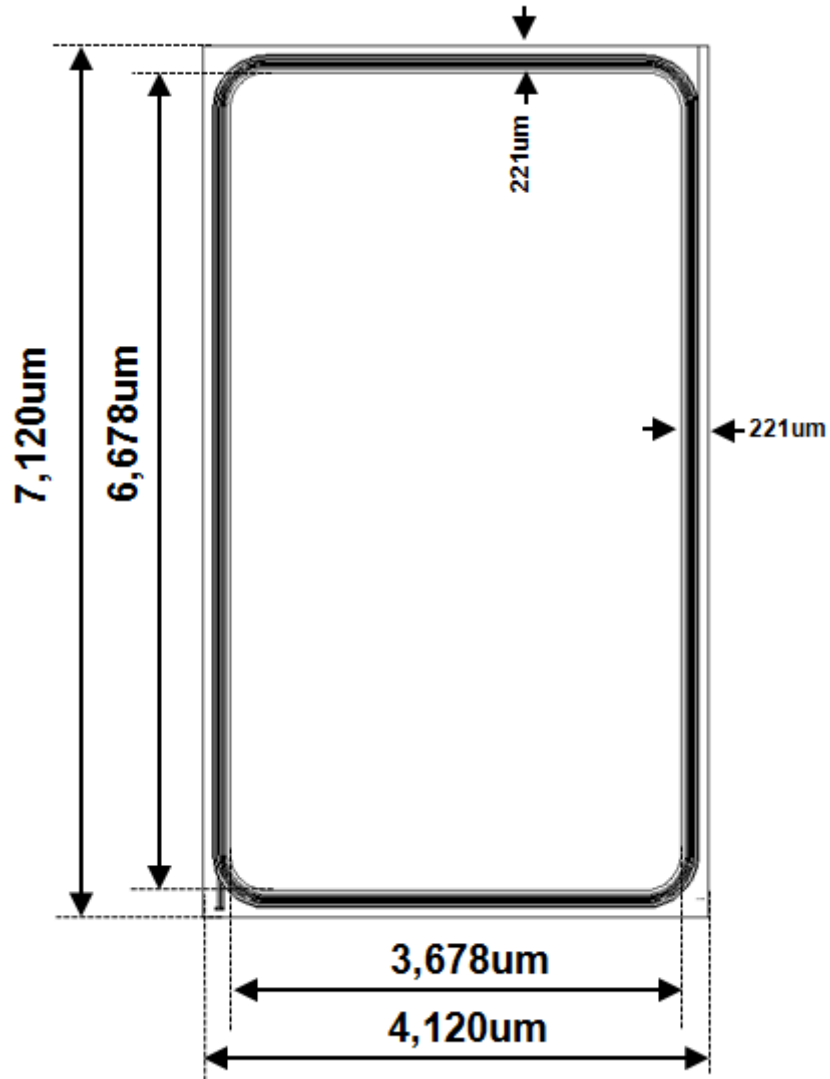
Electrical Characteristics (Not subject to production test, verified by design /characterization)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
I_R	Reverse Current	$V_R = 650\text{V}$, $T_{VJ} = 175^{\circ}\text{C}$	-	600	-	μA
V_F	Forward Voltage	$I_F = 160\text{A}$	-	1.4	1.9	V
		$I_F = 160\text{A}$, $T_{VJ} = 175^{\circ}\text{C}$	-	1.35	-	V
Q_{rr}	Reverse Recovery Charge	$I_F = 160\text{A}$, $V_R = 400\text{V}$, $di_F/dt = 1000\text{A}/\mu\text{s}$, $T_{VJ} = 25^{\circ}\text{C}$	-	3.3	-	μC
I_{rr}	Reverse Recovery Current		-	50	-	A
T_{rr}	Reverse Recovery Time		-	132	-	ns
Q_{rr}	Reverse Recovery Charge	$I_F = 160\text{A}$, $V_R = 400\text{V}$, $di_F/dt = 1000\text{A}/\mu\text{s}$, $T_{VJ} = 175^{\circ}\text{C}$	-	12.5	-	μC
I_{rr}	Reverse Recovery Current		-	101.7	-	A
T_{rr}	Reverse Recovery Time		-	245	-	ns

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



Physical Dimensions







PCRKA16065F8 650V/160A Extremefast Diode



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