

FRD Chip

Die In Wafer Form

1700V
IF=60A
VF typ=2V@IF(60A)@25°C
150mm Wafer

Applications

- Industrial Motor Drive
- Highpower converters
- Medium voltage converters

Features

- Reduced Power Loss In Diode And Switching Transistor
- High Frequency Operation
- Optimized for switching softness, Reduced EMI

Chip Type	IF	VR	Die size	Wafer size
SYF50P170E1	60A	1700V	7.7*4.2 mm ²	6 inch

Mechanical Parameters

Die size	7.7*4.2 mm ²
Anode pad size	6.5*4.0 mm ²
Silicon thickness	250um
Wafer size	150mm
Maximum possible chips per wafer	340pcs
Passivation frontside	polyimide
Pad metal	4000nm AlSiCu
Backside metal	Ti - Ni - Ag suitable for epoxy and soft solder die bonding
Die bond	electrically conductive glue or solder
Wire bond	Al, ≤500um
Reject ink dot size	Ø 0.65mm; max. 1.2mm
Storage environment (<6 months) for original and sealed MBB bags	Ambient atmosphere air, temperature 17°C – 25°C
Storage environment (<6 months) for open MBB bags	Store in original container, in dry nitrogen, <6 months at an ambient temperature of 23°C

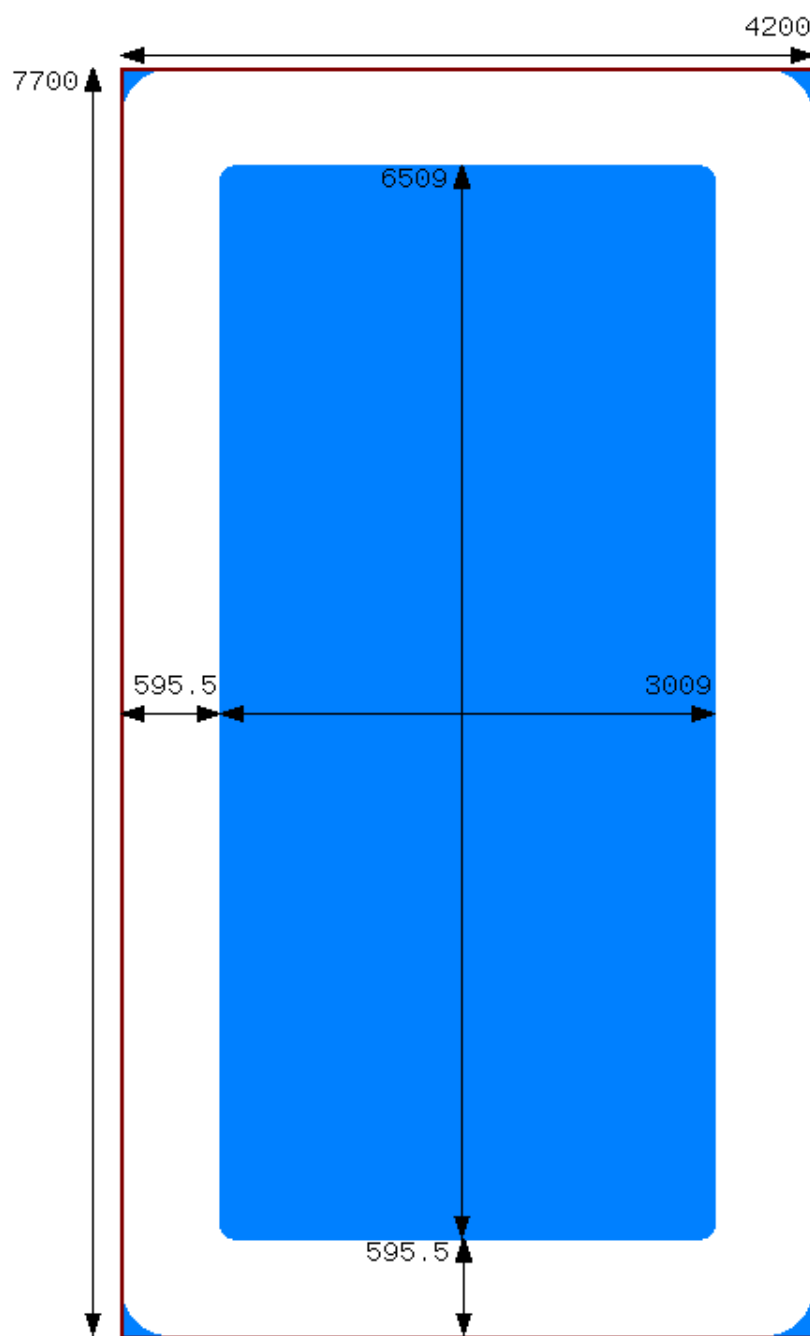
Maximum Ratings

Parameter	Symbol	Value	Unit
Minimum reverse breakdown voltage, $T_j=25^{\circ}\text{C}$	V_{RRM}	1700	V
Maximum continue forward current, $T_j=150^{\circ}\text{C}$	I_{FM}	60	A
Maximum reverse leakage current, $T_j=25^{\circ}\text{C}$	I_{RM}	20	μA
Maximum forward voltage, $I_F=60\text{A}$, $T_j=25^{\circ}\text{C}$	V_{FM}	2.2	V
Operating junction temperature range	T_j	$-55\sim+150$	$^{\circ}\text{C}$

Electrical Characteristics (tested on chip)

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Breakdown voltage	V_{BR}	$I_R=200\mu\text{A}$	1700			
Forward voltage	V_F	$T_j=25^{\circ}\text{C}$, $I_F=60\text{A}$	-	2	-	V
Reverse leakage current	I_R	$V_R=1700\text{V}$, $T_j=25^{\circ}\text{C}$			20	μA

1. Depending on thermal properties of assembly.
2. Not subject or production test - verified by design/characterization.



Not to Scale(unit:um)

Notes:

1. Controlling dimension: millimeters
2. Die width and length tolerance: <0.05