

AK Trench-FS IGBT

Features

- Trench FS technology
- Low $V_{CE(sat)}$
- Low switching loss
- Easy paralleling

Application

- Photovoltaic converters
- High frequency converters
- Motor control

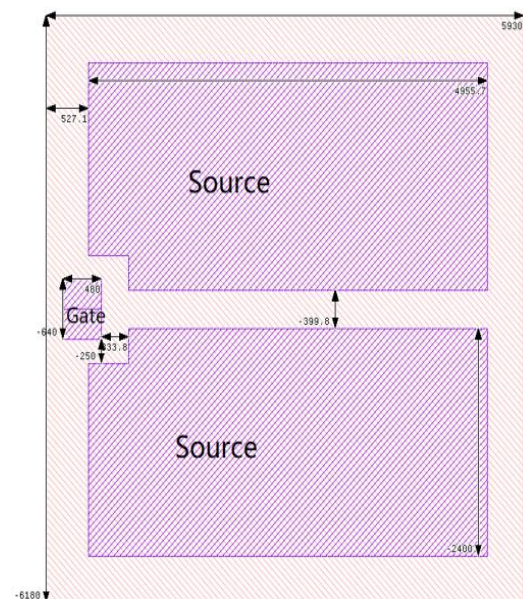
Wafer Size (inch)	8
Chip Size with scribe (mm2)	6.09 x 6.34
Wafer Thickness (um)	70±5
Gate PAD Size (mm2)	0.48 x 0.64
Emitter PAD Size (mm2)	4.955 x 2.4
Top Metal	AlCu
Top Metal Thickness (µm)	4
Back Metal	Al/Ti/Ni/Ag
Scribe Line (µm)	80
Passivation	Polyimide
Gross Die	688
Recommended Storage Environment	Store in original container, in dry nitrogen, <3months at an ambient temperature of 23±3°C

650V100A Trench FS IGBT

Parameter	Value	Unit
V_{CE}	650	V
I_C	100	A
$V_{CE(sat)}$ at $I_C=100A$ (Wafer level test)	1.5	V

Unit: um

Die Size Without 80um scribe line



Maximum Ratings (T_j=25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V _{CE}	650	V
Gate-emitter voltage	V _{GE}	+/-20	V
DC collector current	I _C		
T _j =25°C		200	A
T _j =100°C		100	A
Pulsed collector current	I _{CM}	400	A
Junction temperature range	T _{vj}	-40~+175	°C
sOperating junction temperature	T _{vjop}	-40~+150	°C

Electrical Characteristics at T_j=25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Characteristic (Test on wafer)						
Collector-emitter breakdown voltage	V _{(BR)CES}	V _{GE} =0V, I _C =0.1mA	650	-	-	V
Gate-emitter threshold voltage	V _{GE(th)}	I _C =1mA, V _{CE} =V _{GE}	3.3	4.1	4.9	V
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =100A	-	1.5	1.8	V
Gate leakage current	I _{GES}	V _{CE} =0V, V _{GE} =+/-20V	-	-	200	nA
Collector leakage current	I _{CES}	V _{CE} =650V, V _{GE} =0V	-	-	50	uA