

## AK Trench-FS IGBT

### Features

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

### Application

- Drivers

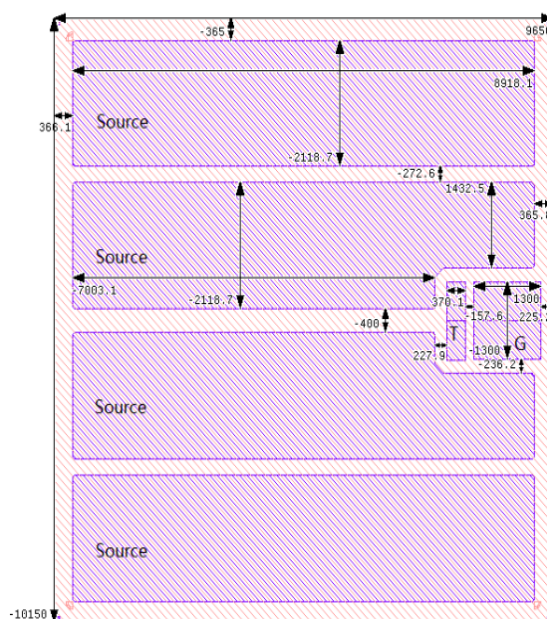
### 750V275A Trench FS IGBT

Parameter	Value	Unit
$V_{CE}$	750	V
$I_C$	275	A
$V_{CE(sat)}$ at $I_C=275A$	1.45	V

Wafer Size (inch)	8
Chip Size with scribe (mm <sup>2</sup> )	9.73 x 10.23
Wafer Thickness (μm)	75±5
Gate PAD Size (mm <sup>2</sup> )	1.3 x 1.3
Emitter PAD Size (mm <sup>2</sup> )	8.918 x 2.118
Top Metal	AlCu
Top Metal Thickness (μm)	5
Back Metal	Al/Ti/Ni/Ag
Scribe Line (μm)	80
Passivation	Polyimide
Gross Die	252
Recommended Storage Environment	Store in original container, in dry nitrogen, <3months at an ambient temperature of 23±3°C

Unit: μm

Die Size Without 80μm scribe line



**Maximum Ratings (T<sub>j</sub>=25°C, unless otherwise specified)**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V <sub>CE</sub>	750	V
Gate-emitter voltage	V <sub>GE</sub>	+/-20	V
DC collector current	I <sub>C</sub>	- (a)	A
Pulsed collector current	I <sub>CM</sub>	825	A
Short circuit withstand time (V <sub>GE</sub> =15V, V <sub>CC</sub> =400V)	t <sub>SC</sub>	5	μs
Junction temperature range	T <sub>j</sub>	-40~+175	°C
sOperating junction temperature	T <sub>vjop</sub>	-40~+150	°C

**Electrical Characteristics at T<sub>j</sub>=25°C (unless otherwise specified)**

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
<b>Static Characteristic (Test on wafer)</b>						
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	V <sub>GE</sub> =0V, I <sub>C</sub> =0.1mA	750	-	-	V
Gate-emitter threshold voltage	V <sub>GE(th)</sub>	I <sub>C</sub> =3.2mA, V <sub>CE</sub> =V <sub>GE</sub>	5.0	6.0	7.0	V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V <sub>GE</sub> =15V, I <sub>C</sub> =200A	-	1.3	1.6	V
		V <sub>GE</sub> =15V, I <sub>C</sub> =275A	-	1.45	1.8	V
Gate leakage current	I <sub>GES</sub>	V <sub>CE</sub> =0V, V <sub>GE</sub> =+/-20V	-	-	500	nA
Collector leakage current	I <sub>CES</sub>	V <sub>CE</sub> =750V, V <sub>GE</sub> =0V	-	-	100	μA
Integrated gate resistor	R <sub>G</sub>		-	2	-	Ω

(a) Depending on thermal properties of assembly