

AK Trench-FS IGBT

Features

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

Application

- Drivers

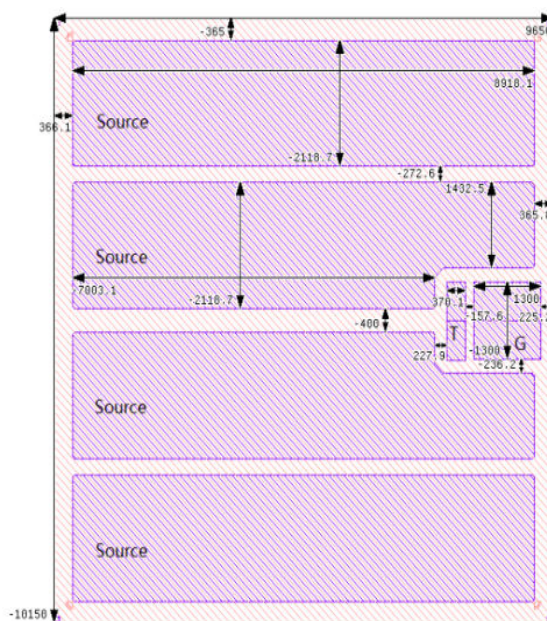
Wafer Size (inch)	8
Chip Size with scribe (mm2)	9.73 x 10.23
Wafer Thickness (um)	75±5
Gate PAD Size (mm2)	1.3 x 1.3
Emitter PAD Size (mm2)	8.918 x 2.118
Top Metal	AlCu
Top Metal Thickness (µm)	5
Back Metal	Al/Ti/Ni/Ag
Scribe Line (µm)	80
Passivation	Polyimide
Gross Die	252
Recommended Storage Environment	Store in original container, in dry nitrogen, <3months at an ambient temperature of 23±3°C

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

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}	750	V
Gate-emitter voltage	V _{GE}	+/-20	V
DC collector current	I _C	- (a)	A
Pulsed collector current	I _{CM}	825	A
Short circuit withstand time (V _{GE} =15V, V _{CC} =400V)	t _{SC}	5	μs
Junction temperature range	T _j	-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	750	-	-	V
Gate-emitter threshold voltage	V _{GE(th)}	I _C =3.2mA, V _{CE} =V _{GE}	5.0	6.0	7.0	V
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =200A	-	1.3	1.6	V
		V _{GE} =15V, I _C =275A	-	1.45	1.8	V
Gate leakage current	I _{GES}	V _{CE} =0V, V _{GE} =+/-20V	-	-	500	nA
Collector leakage current	I _{CES}	V _{CE} =750V, V _{GE} =0V	-	-	100	μA
Integrated gate resistor	R _G		-	2	-	Ω

(a) Depending on thermal properties of assembly