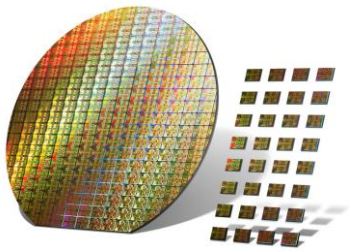
NPT IGBT Chip

Chip Type	V_{CE}	I_C	Die size
An25IGB12	**1 200 V**	**25 A**	**6.59 x 6.49 mm^2**



FEATURES

- 1 200 V NPT technology
- Low turn-off losses
- Short tail current
- Positive temperature coefficient
- Easy paralleling
- High short circuit capability

Recommended for:

- Low power Modules

GENERAL INFORMATION:

Die size (including scribe line)	6.59 x 6.49 mm^2
Emitter and Gate pad size	See chip drawing
Area total	42.77 mm^2
Scribe line width	0.1 mm
Wafer size	150 mm (6 inch)
Wafer thickness	200 um
Type and thickness of Emitter and Gate metal layer	Al Si 1% 4.0 um
Type and thickness of Collector metal layer (wafer back side)	Ti – Ni – Ag 1.0 um
Passivation frontside	Polyimide
Die bond	Electrically conductive glue or solder
Wire bond	Al, ≤ 500 um
Recommended storage environment	Store in original container, in dry nitrogen, < 6 month at an ambient temperature 23°C

MAXIMUM RATINGS:

Parameter	Legend	Value	Unit
Collector-emitter voltage, T_j=25 °C	V_{CE}	1 200	V
DC collector current, limited by T_{jmax}	I_C	25[1)]	A
Pulsed collector current, t_p limited by T_{jmax}	$I_{c,puls}$	70	A
Gate emitter voltage	V_{GE}	±30	V
Operating junction and storage temperature	T_j, T_{stg}	-55 … +150	°C
Short circuit data [1) 2)] V_{GE}=15 V, V_{CC}=800 V, T_J=150 °C	t_{sc}	10	us

STATIC CHARACTERISTICS (tested on wafer), T_j=25 °C:

Parameter	Legend	Condition	Value			Unit
			min.	typ.	max	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V_{GE}=0 V, I_C=1 mA	1 200	–	–	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15 V, I_C=20 A	–	2.35	2.5	
		V_{GE}=15 V, I_C=25 A	–	2.4[3)]	2.8[3)]	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=1 mA, V_{GE}= V_{CE}	3.0	4.8	6.0	
Zero gate voltage collector current	I_{CES}	V_{CE}=1 200 V, V_{GE}= 0 V	–	–	10	uA
Gate-emitter leakage current	I_{GES}	V_{CE}=0 V, V_{GE}= 20 V	–	–	80	nA
Integrated gate resistor	R_{Gint}		–	5	–	Ω

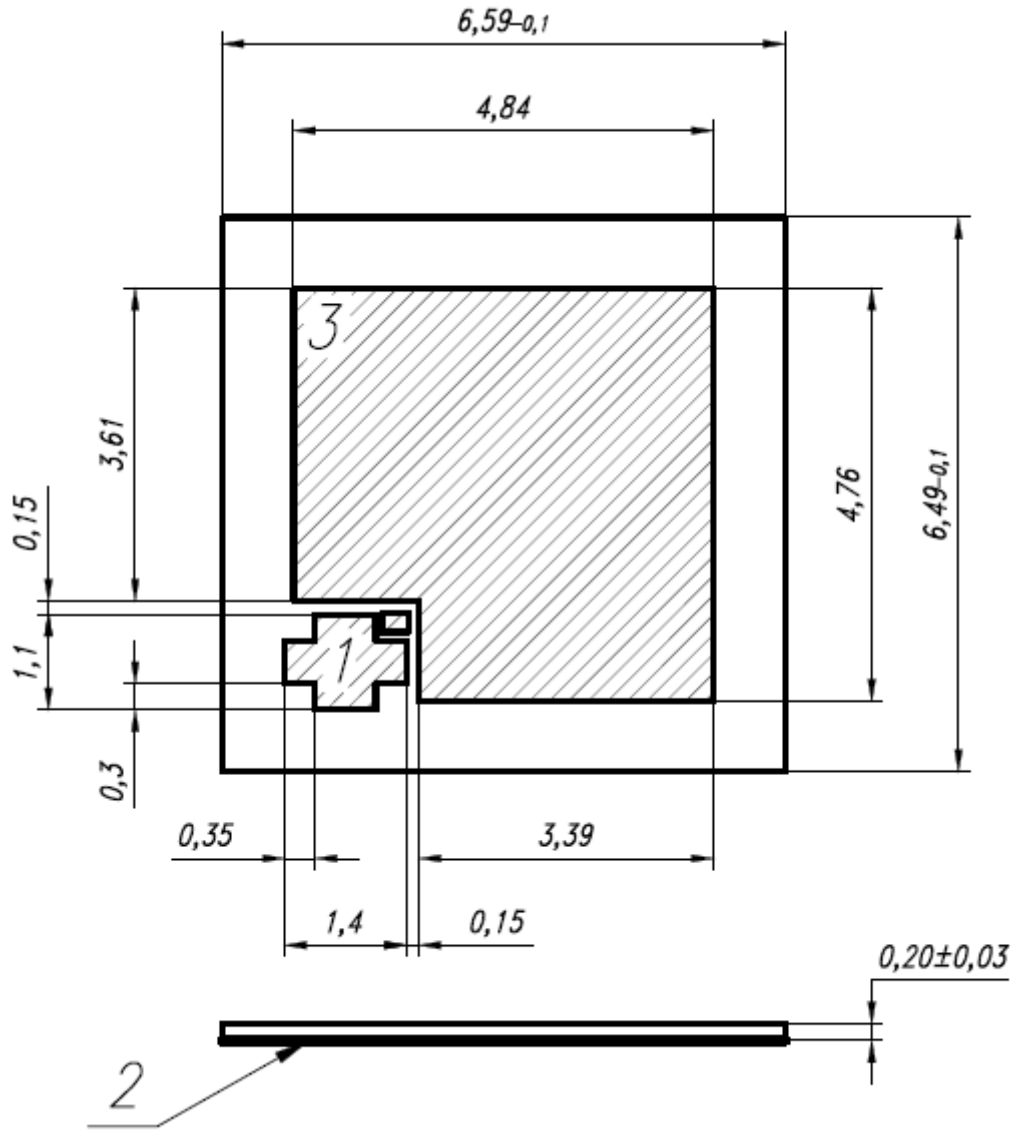
ELECTRICAL CHARACTERISTICS (verified by design/ characterization):

Parameter	Legend	Condition	Value			Unit
			min.	typ.	max	
Input capacitance	C_{iss}	V_{CE}=25 V, V_{GE}=0 V, f=1 MHz	–	1 700	–	pF
Output capacitance	C_{oss}		–	220	–	
Reverse transfer capacitance	C_{rss}		–	90	–	

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

1) Depending on thermal properties of assembly
2) Not subject to production test – verified by design/characterization
3) Data for chip packaged in power modules

CHIP DRAWING:



NOTE:
ASSIGNMENTS
1 Dimensions are shown in milimeters.

PAD:

1 = GATE
2 = COLLECTOR (BACK SIDE)
3 = EMITTER