SPG100H120AWD

1200V 100A IGBT CHIP

Features:

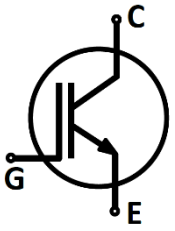
- 1200V Trench & field stop technology
- Low switching losses
- High short circuit capability
- Positive Temperature coefficient
- Easy paralleling

Recommended for:

Low / medium power modules

Applications:

Low / medium power drives



Mechanical parameters

Die size	L x W	9.95×9.50	mm^2
Emitter pad size	L x W	See chip drawing	mm^2
Gate pad size	L x W	1.31×0.811	mm^2
Silicon thickness	115		μm
Wafer size	200		mm
Maximum possible chips per wafer	272		
Passivation frontside	Polyimide		
Pad Metallization	AlCu	4	μm
Backside Metallization	Al / Ti / Ni / Ag	1.7	μm

Maximum Ratings

Parameters	**Symbol**	**Value**	**Unit**
Collector-emitter voltage	V_{CE}	1200	V
DC collector current, limited by $T_{vj\ max}$	I_C	100[1]	A
Pulsed collector current, t_p limited by $T_{vj\ max}$[2]	$I_{C\ puls}$	300	A
Gate-emitter voltage	V_{GE}	±20	V
Operating junction temperature	$T_{vj\ op}$	-40~175	℃
Storage temperature	T_{stg}	-40~150	℃
Short circuit data [3] (V_{GE}=15V, V_{CC}=600V, T_{vj}=150°C)	t_{sc}	10	μs

Static Characteristic (T_j=25℃, unless otherwise noted)

Parameter	**Symbol**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=25A	0.95	1.06	1.2	V
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=3.8mA, V_{CE}=V_{GE}	5.3	5.8	6.3	V
Collector-emitter leakage	I_{CES}	V_{CE}=1200V, V_{GE}=0V	-	-	50	μA
Gate-emitter leakage	I_{GES}	V_{CE}=0V, V_{GE}=20V	-	-	120	nA
Integrated gate resistor	R_{Gint}		5.0			Ω

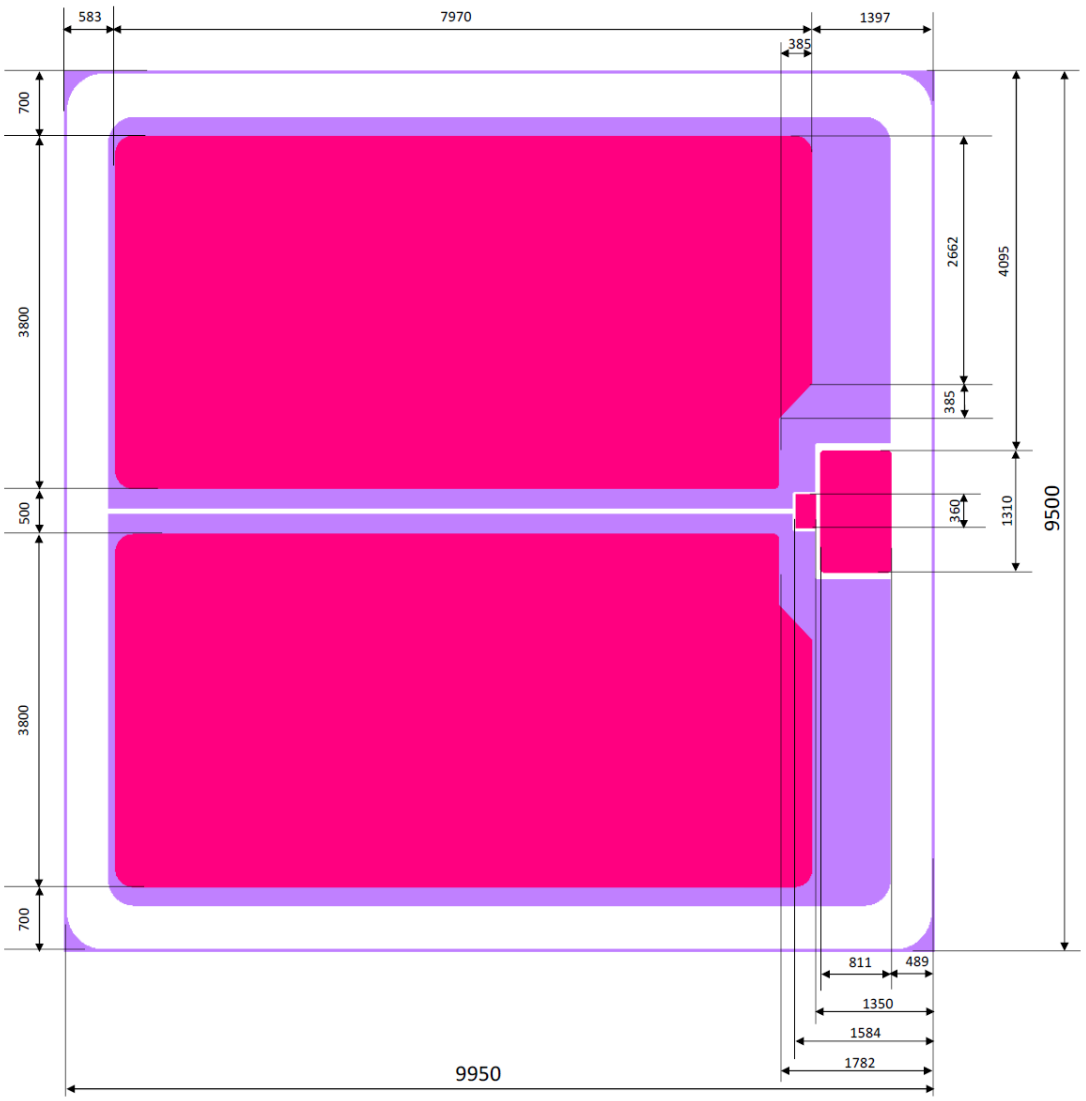
[1] Depending on thermal properties of assembly.
[2] Not subject to production test - verified by design/characterization.
[3] Allowed number of short circuit: ＜1000; time between short circuit: ＞1s.

Version: 2.2

Electrical Characteristic [1]

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter saturation voltage	T_{vj}=25℃	$V_{CE(sat)}$	V_{GE}=15V I_C=100A	1.40	1.70	1.90	V
	T_{vj}=150℃			1.65	1.85	2.25	V
Input capacitance		C_{ies}	V_{CE}=25V V_{GE}=0V, f=100kHz T_{vj}=25℃	-	11300	-	pF
Reverse transfer capacitance		C_{res}		-	115	-	pF

Chip Drawing (unit: μm)



[1] Not subject to production test-verified by design/characterization.

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