

Features:

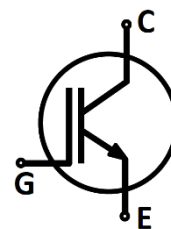
- 1200V Trench & field stop technology
- Low switching losses
- Positive Temperature coefficient

Recommended for:

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Applications:

- UPS
- Solar inverters
- Welding
- PFC



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		125	μm
Wafer size		200	mm
Scribe line		80	um
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

Parameter	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	°C
Storage temperature	T_{stg}	-40~150	°C

Static Characteristics (T_j=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15V$, $I_C=25A$	-	1.20	-	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}	$V_{CE}=1200V$, $V_{GE}=0V$	-	-	20	μA
Gate-emitter leakage	I_{GES}	$V_{CE}=0V$, $V_{GE}=20V$	-	-	100	nA
Integrated gate resistor	R_{Gint}		-	5.0	-	Ω

¹ Depending on thermal properties of assembly.

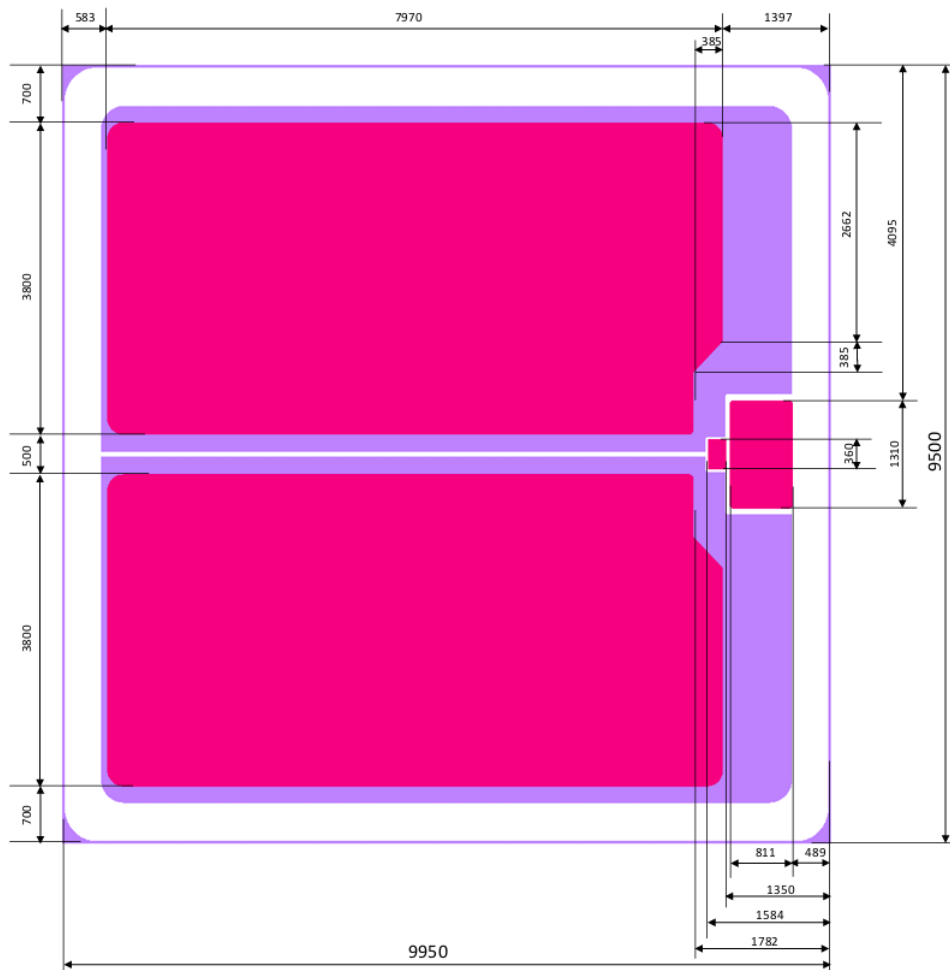
² Not subject to production test - verified by design/characterization.

³ Allowed number of short circuit: <1000; time between short circuit: >1s.

Electrical Characteristic ¹

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter saturation voltage	$T_{vj}=25^{\circ}\text{C}$	$V_{CE(sat)}$	$V_{GE}=15\text{V}, I_C=100\text{A}$	1.80	2.10	2.40	V
	$T_{vj}=125^{\circ}\text{C}$				2.68		V
Input capacitance		C_{ies}	$V_{CE}=25\text{V}, V_{GE}=0\text{V}, f=100\text{kHz}, T_{vj}=25^{\circ}\text{C}$	-	11300	-	pF
Reverse transfer capacitance		C_{res}		-	115	-	pF
Turn-on delay time (inductive load)	$T_{vj}=25^{\circ}\text{C}$	t_{don}	$V_{CC}=600\text{V}, V_{GE}=\pm 15\text{V}, R_g=10\Omega, I_C=100\text{A}$		350		ns
	$T_{vj}=125^{\circ}\text{C}$				345		ns
Rise time (inductive load)	t_r	$T_{vj}=25^{\circ}\text{C}$			100		ns
		$T_{vj}=125^{\circ}\text{C}$			105		ns
Turn-off delay time (inductive load)	t_{doff}	$T_{vj}=25^{\circ}\text{C}$			250		ns
		$T_{vj}=125^{\circ}\text{C}$			255		ns
Fall time (inductive load)	t_f	$T_{vj}=25^{\circ}\text{C}$			45		ns
		$T_{vj}=125^{\circ}\text{C}$			50		ns
Short circuit withstand time		T_{SC}	$V_{CC}=800\text{V}, V_{GE}=15\text{V}, R_g=10\Omega$		10		μs

Chip Drawing (unit: μm)



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

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