

Super FAP-G Series

■ Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- Avalanche-proof

■ Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

■ Maximum ratings and characteristicAbsolute maximum ratings

● (T_c=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	900	V
	V _{DSX} *5	900	V
Continuous drain current	I _D	±10	A
Pulsed drain current	I _{D(puls)}	±40	A
Gate-source voltage	V _{GS}	±30	V
Repetitive or non-repetitive	I _{AR} *2	10	A
Maximum Avalanche Energy	E _{AS} *1	330	mJ
Maximum Drain-Source dV/dt	dV _{DS} /dt *4	40	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3	5	kV/μs
Max. power dissipation	P _D	T _a =25°C	W
		T _c =25°C	
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C

*1 L=6.06mH, Vcc=90V, Tch=25°C, See to Avalanche Energy Graph *2 Tch ≤ 150°C

*3 $|F| \leq |I_D$, $-di/dt = 50 \text{ A}/\mu\text{s}$, $V_{CC} \leq BV_{DSS}$, $T_{ch} \leq 150^\circ\text{C}$ *4 $V_{DS} \leq 900 \text{ V}$ *5 $V_{GS} = -30 \text{ V}$

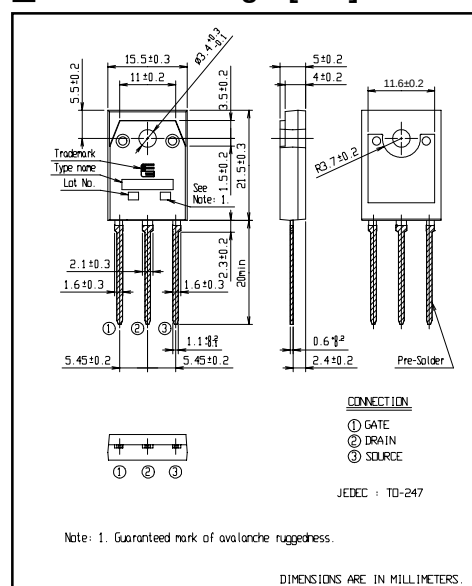
● **Electrical characteristics (T_c = 25°C unless otherwise specified)**

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V(BR)DSS	I _D =250μA V _{GS} =0V	900			V
Gate threshold voltage	V _{GS(th)}	I _D =250μA V _{DS} =V _{GS}	3.0		5.0	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =900V V _{GS} =0V			25	μA
		V _{DS} =720V V _{GS} =0V			250	
		T _{ch} =25°C				
		T _{ch} =125°C				
Gate-source leakage current	I _{GSS}	V _{GS} =±30V V _{DS} =0V			100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =5A V _{GS} =10V		1.08	1.40	Ω
Forward transconductance	g _{fs}	I _D =5A V _{DS} =25V	6	12		S
Input capacitance	C _{iss}	V _{DS} =25V		1250	1900	pF
Output capacitance	C _{oss}	V _{GS} =0V		160	240	
Reverse transfer capacitance	C _{rss}	f=1MHz		12	18	
Turn-on time t _{on}	t _{d(on)}	V _{CC} =600V I _D =5A		26	39	ns
	t _r	V _{GS} =10V		23	35	
	t _{d(off)}	R _{GS} =10 Ω		60	90	
Turn-off time t _{off}	t _f			17	26	
Total Gate Charge	Q _G	V _{CC} =450V		34.5	52	nC
Gate-Source Charge	Q _{GS}	I _D =10A		5	7.5	
Gate-Drain Charge	Q _{GD}	V _{GS} =10V		12	18	
Avalanche capability	I _{AV}	L=6.06mH T _{ch} =25°C	10			A
Diode forward on-voltage	V _{SD}	I _F =10A V _{GS} =0V T _{ch} =25°C		0.90	1.50	V
Reverse recovery time	t _{rr}	I _F =10A V _{GS} =0V		3.1		μs
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		17.0		μC

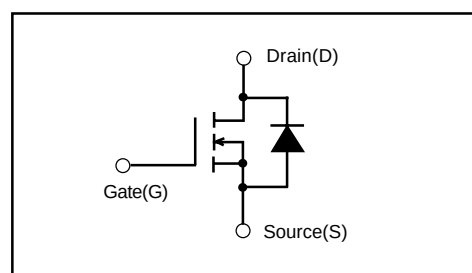
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			0.463	°C/W
	R _{th(ch-a)}	channel to ambient			50.0	°C/W

■ Outline Drawings [mm]



■ Equivalent circuit schematic



Characteristics

