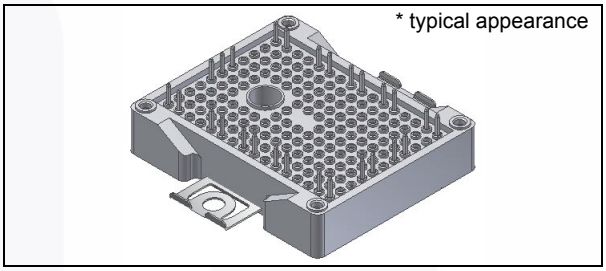
June 2015

FPF2G120BF07ASP

F2, 3ch Boost module PCM and NTC

General Description

The FPF2G120BF07ASP is the 3ch boost topology which is providing an optimized solution for the multi-string solar application. And the integrated high speed field stop IGBTs and SiC diodes are providing lower conduction and switching losses. And the pre-applied PCM requires no additional process of the thermal interface material printing. Furthermore, the screw clamp provides a fast and reliable mounting method.



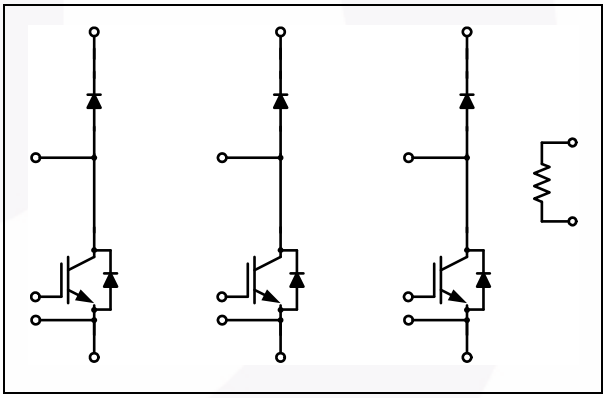
Package Code: F2

Electrical Features

- High Efficiency
- Low Conduction and Switching Losses
- High Speed Field Stop IGBT
- SiC SBD for Boost Diode
- Built-in NTC for Temperature Monitoring

Mechanical Features

- Compact Size : F2 Package
- Soldering Pin
- Al_2O_3 Substrate with Low Thermal Resistance
- Pre-applied PCM (Phase Change Material)



Internal Circuit Diagram

Applications

- Solar Inverter

Related Materials

- AN-5077: Design Considerations for High Power Module (HPM)
- AN-4186: F1 and F2 Modules with Pre-applied Phase Change Material (PCM)

Package Marking and Ordering Information

Device	Device Marking	Package	PCM	Packing Type	Quantity / Tray
FPF2G120BF07AS	FPF2G120BF07AS	F2	X	Tray	14
FPF2G120BF07ASP	FPF2G120BF07ASP	F2	O	Tray	14

Absolute Maximum Ratings $T_C = 25^oC$ unless otherwise noted.

Symbol	Description	Condition	Rating	Units
Boost IGBT				
V_{CES}	Collector-Emitter Voltage		650	V
V_{GES}	Gate-Emitter Voltage		± 20	V
	Transient Gate-Emitter Voltage		± 25	V
I_C	Continuous Collector Current	T_C = 80 °C, T_{Jmax} = 175 °C	40	A
I_{CM}	Pulsed Collector Current	limited by T_{Jmax}	80	A
P_D	Maximum Power Dissipation		156	W
T_J	Operating Junction Temperature		- 40 to + 150	°C
Protection Diode				
V_{RRM}	Peak Repetitive Reverse Voltage		650	V
I_F	Continuous Forward Current	T_C = 80 °C, T_{Jmax} = 175 °C	15	A
I_{FM}	Maximum Forward Current		30	A
I_{FSM}	Non-repetitive Peak Surge Current	60Hz Single Half-Sine Wave	150	A
I^2t - value	Surge Current Integral Value		93	A^2s
P_D	Maximum Power Dissipation		140	W
T_J	Operating Junction Temperature		- 40 to + 150	°C
Boost Diode				
V_{RRM}	Peak Repetitive Reverse Voltage		650	V
I_F	Continuous Forward Current	T_C = 80 °C, T_{Jmax} = 175 °C	15	A
I_{FM}	Maximum Forward Current		30	A
I_{FSM}	Non-repetitive Peak Surge Current	60Hz Single Half-Sine Wave	120	A
I^2t - value	Surge Current Integral Value		60	A^2s
P_D	Maximum Power Dissipation		98	W
T_J	Operating Junction Temperature		- 40 to + 150	°C
Module				
T_{STG}	Storage Temperature		- 40 to + 125	°C
V_{ISO}	Isolation Voltage	AC 1 min.	2500	V
Iso._Material	Internal Isolation Material		Al_2O_3	-
T_{MOUNT}	Mounting Torque		2.0 to 5.0	N•m
Creepage	Terminal to Heat Sink		11.5	mm
	Terminal to Terminal		6.3	mm
Clearance	Terminal to Heat Sink		10.0	mm
	Terminal to Terminal		5.0	mm