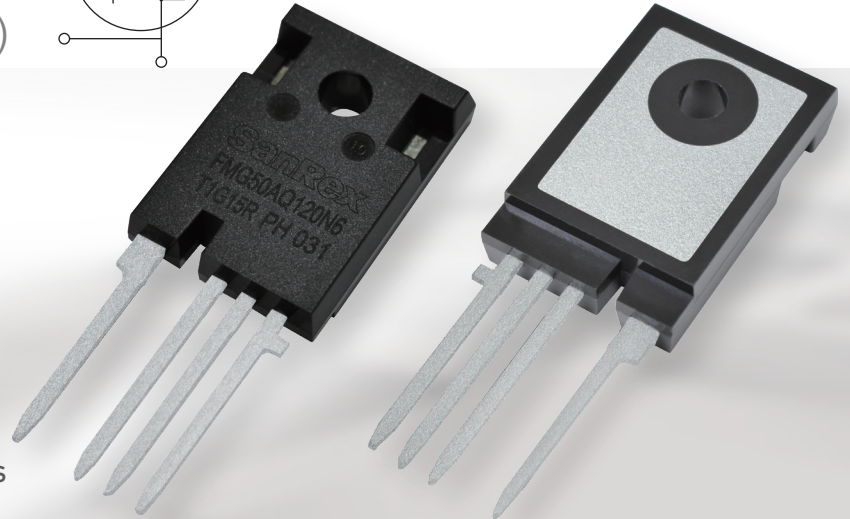
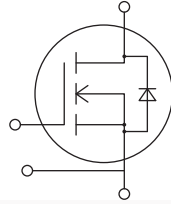


SiC MOSFET (TO-247-4L)

FMG50AQ120N6

50A 1200V SiC MOSFET
TO-247-4L Package (Isolated)



Applications

- ▶ Industrial Inverter
- ▶ Uninterruptible Power Supply
- ▶ EV Battery Charger
- ▶ Various Switching Mode Power Supplies

UL Compliant
UL File No. E76102

Features

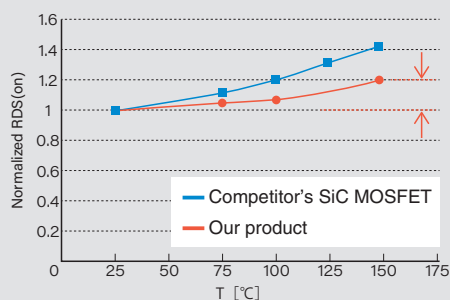
- Isolated package with good heat dissipation. ($R_{th(j-c)}=0.22^{\circ}\text{C/W Typ}$)
- The 4-pin structure reduces the effect of inductance on the source pins, resulting in faster switching and reduced energy loss.
- Industry-leading low ON Resistance. ($15\text{m}\Omega \text{ Typ. } T_j=150^{\circ}\text{C}$)
- Mitigates energy loss with little change in on-resistance even during high-temperature operation.
- Gate characteristics that provide high noise immunity at high frequency operation. ($V_{GS(th)} : 4.0\text{V Typ.}$)
- Top-level short-circuit withstand voltage of over 5μsec for easy circuit protection design. ($8\mu\text{sec Typ}$)

Superior performance with DioMOS* technologies

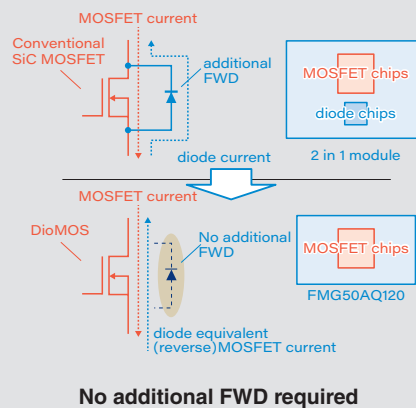
*SiC MOSFET (DioMOS) with reflux diode function developed by Panasonic is mounted.
Low RDS(on) due to maximization of package space.

Low ON resistance

ON Resistance temperature characteristics (normalized at 25 °C)

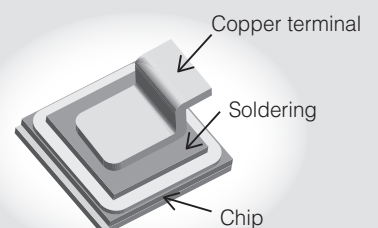


Embedded FWD



Supports high current density

The double side solder bonding reduces wire resistance and increases robustness, bringing out SiC chips performance with a current density four times greater than in conventional products.



SiC MOSFET (TO-247-4L) FMG50AQ120N6

Maximum Ratings

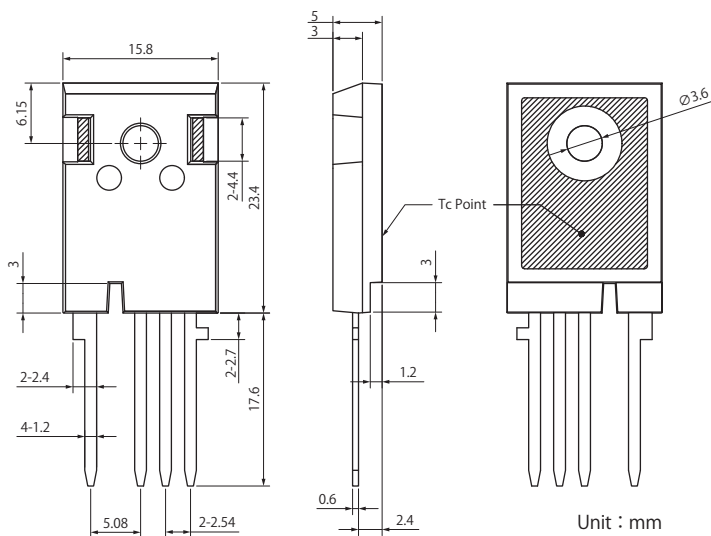
T_j=25°C unless otherwise specified

Item	Symbol	Unit	Rating	Conditions
Drain-Source Voltage	V _{DS}	V	1200	
Continuous Drain Current	I _D	A	50	V _{GS} =20V, T _c =108°C, DC
Total Power Dissipation	P _{tot}	W	440	T _c =25°C
Operating Junction Temperature	T _j	°C	-40 ~ +150	
Isolation Voltage	V _{iso}	V	2500	AC, RMS, 1min, Main Terminal to Case

Electrical Characteristics

T_j=25°C unless otherwise specified

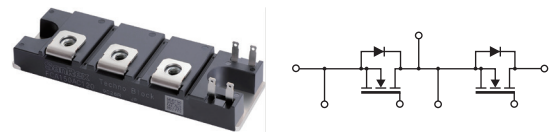
Item	Symbol	Unit	Rating			Conditions
			Min.	Typ.	Max.	
On-State Resistance	R _{DS(on)}	mΩ		13.0	28.0	V _{GS} =20V, I _D =50A
				15.0	30.0	V _{GS} =20V, I _D =50A, T _j =150°C
Drain Cut-off Current	I _{DSS}	μA			100	V _{DS} =1200V, V _{GS} =0V
Gate-Source Threshold Voltage	V _{GS(th)}	V	3	4	5	V _{DS} =10V, I _D =1.5mA
Gate-Source Leakage Current	I _{GSS}	nA			100	V _{GS} =20V, V _{DS} =0V
Thermal Resistance	R _{th(j-c)}	°C/W	0.22	0.28		Junction to Case



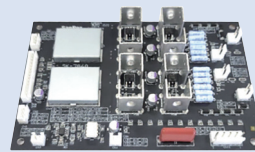
Other Products

SiC MOSFET Module

Highly reliable "TechnoBlock" package
FCA150AC120 / FCA100AC120 (150A / 100A 1200V)



Please inquire about the gate drive unit.



**Evaluation gate drive unit
SK-7640**

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- Appearance and specifications of products are subject to change without notice for improvement reasons.

Sansha Electric Manufacturing Co., Ltd.

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