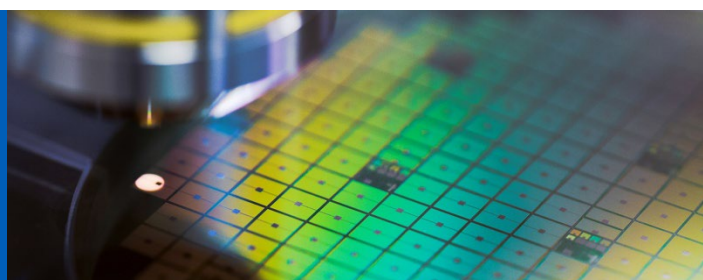




Silicon Carbide (SiC)








Power modules

Superior performance for high power, high frequency applications needing best-in-class power density.



Features

SiC MOSFET devices qualified at $T_j=200^\circ\text{C}$ and to AEC-Q101 standards

	Module Type	Part Number	Voltage Rating (V)	Current /Switch (A)	$R_{DS(on)}$ @25 °C (mΩ)	Thermal Cooling System* (K/W)	Max Junction Temp (°C)	Size W x L x H (mm)
Diode Modules								
	Full Bridge Rectifier	GE06020HAA4	650	200	N/A	$R_{th(j-c)} = 0.2$	175	69 x 103 x 16
	Center Tap Rectifier	GE06040GAA4	650	400	N/A	$R_{th(j-c)} = 0.1$		
MOSFET Modules								
	Dual	GE12047BCA3	1200	475	3.90	$R_{th(j-c)} = 0.12$	175	48 x 86 x 18
		GE17042BCA3	1700	425	4.75			
	1/2 Bridge	GE12047CCA3	1200	475	3.90	$R_{th(j-c)} = 0.12$	175	48 x 86 x 18
		GE17042CCA3	1700	425	4.75			
	1/2 Bridge	GE12090CDA3	1200	900	2.15	$R_{th(j-c)} = 0.055$	175	100 x 140 x 38
		GE17080CDA3	1700	800	2.60			
	1/2 Bridge	GE12160CEA3	1200	1600	1.35	$R_{th(j-c)} = 0.034$	175	90 x 134 x 41
		GE17140CEA3	1700	1400	1.60			
	6 Switch	GE12050HEA3	1200	6 x 500	3.90	$R_{th(j-c)} = 0.1$	175	90 x 134 x 37
		GE17045HEA3	1700	6 x 450	4.75			
	6 Pack (3 phase)	GE12050EEA3	1200	3 x 500	3.90	$R_{th(j-c)} = 0.1$	175	90 x 134 x 30
		GE17045EEA3	1700	3 x 450	4.75			

* All current ratings are for standard AlSiC baseplates. Copper baseplates, available, yield 10% higher current rating



Module part numbering code

GEVVIIEPQN

VV = Voltage rating, first two significant digits, i.e. 12=1200, 17=1700, 33=3300

III x10 = Current rating, switch rating in amps @25°C case temperature

E = Electrical Configuration

- A Single
- B Dual
- C 1/2 Bridge
- D 1/2 Bridge with Diodes
- E Six Pack
- F Full bridge
- G Rectifier – Center Tap
- H Rectifier – Full Bridge
- I Reserved

P = Package Configuration

- A Wirebond
- B Single POL Tile
- C Two POL Tiles
- D Four POL Tiles
- E Six POL Tiles
- F Reserved

Q = Package Material Grade

- A Si₃N₄ on AlSiC
- B Si₃N₄ on Copper
- C AlN on AlSiC
- D AlN on Copper
- E Insulated Metal Substrate (IMS)
- F Reserved

N = Generation of Die

Examples

Dual Module with 1700V Gen3 Die; 400A current rating; Si ₃ N ₄ on AlSiC Baseplate	GE17040BCA3
Six Pack Module with 1700V Gen3 Die; 400A current rating; 6 POLs; Si ₃ N ₄ on Cu Baseplate	GE17040EEB3
1/2 Bridge Module with 1200V Gen3 Die; 1600A current rating; 6 POLs; Si ₃ N ₄ on AlSiC BP	GE12160CEA3

Conversion and control systems

SiC power modules are produced at the State-of-the-Art, Wide Band Gap development and manufacturing facility in Pompano Beach, Florida. For more information and pricing on standard and custom designed modules for environmentally demanding applications contact: SiC.Products@ge.com

Find out more at <https://www.geaviation.com/military/systems/silicon-carbide>

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Part Number	Mass (Lbs./kg)
GE06020HAA4	0.67 / 0.304
GE06040GAA4	0.67 / 0.304
GE12047BCA3	0.26 / 0.118
GE17042BCA3	0.26 / 0.118
GE12040DCA3	0.26 / 0.118
GE12047CCA3	0.26 / 0.118
GE17042CCA3	0.26 / 0.118
GE12012DAF3	0.40 / 0.181
GE12120DEA3	1.01 / 0.458
GE12160CEA3	1.01 / 0.458
GE17140CEA3	1.01 / 0.458
GE12090CDA3	1.66 / 0.755
GE17080CDA3	1.66 / 0.755
GE12050HEA3	1.14 / 0.517
GE17045HEA3	1.14 / 0.517
GE12050EEA3	1.20 / 0.544
GE17045EEA3	1.20 / 0.544