

Reach the PINNACLE of Performance and Reliability

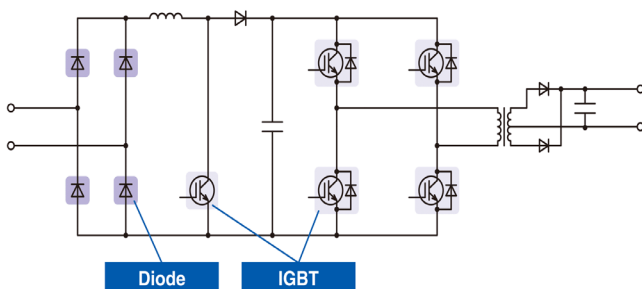
Welding Machines and Plasma Cutters

Welding is the most common method used to join two materials. The welder creates an electric arc that melts and integrates two or more metallics. Welding machines are used in myriad applications, including robotic welders for automotive chassis assembly, arc and spot welding, construction, and manufacturing, as well as art and DIY home projects. Fuji Electric provides high-speed, high-efficiency IGBT power modules to create the energy necessary for the power supply and pilot arc starting-circuit to operate welding machines efficiently.

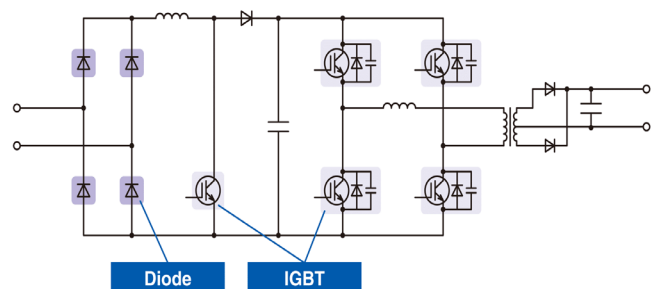
A plasma cutter or plasma cutting system uses a plasma stream to transfer energy to a conductive work material. The plasma stream is typically formed by forcing a gas, such as nitrogen, oxygen, argon, or even air, through a narrow nozzle. An electric current produced by an external power supply adds sufficient energy to the gas flow to ionize it, turning it into a plasma arc. This is why the process is often called plasma arc cutting. The plasma arc cuts the workpiece by first melting it, and then blowing away the molten metal. Fuji Electric provides high-speed, high-efficiency IGBT power modules to create the energy necessary for the power supply and pilot arc starting circuit to operate plasma cutters or plasma cutting systems efficiently.

Circuit Examples

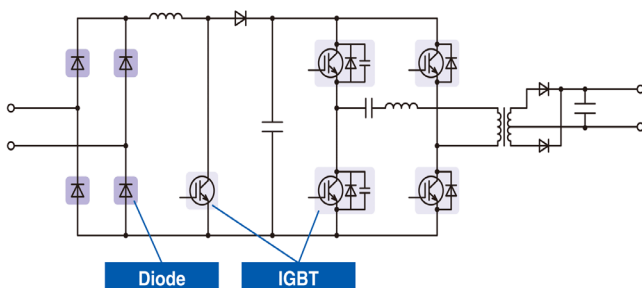
Hard Switching Type



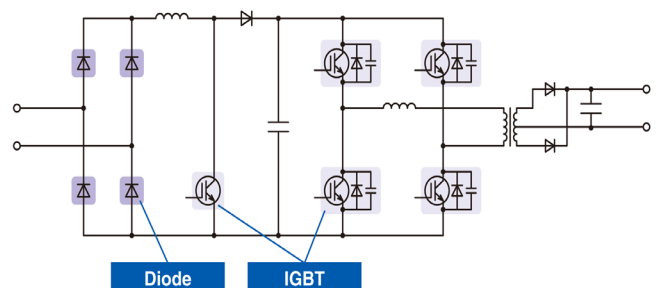
Soft Switching Type (ZVS)



Soft Switching Type (ZVZCS)



Phase Shift Soft Switching Converter (ZVZCS)



Half-Bridge Circuit

Ic (A)	IGBT Modules	Application Example
100	2MBI100HJ-120-50	Fig. 4
150	2MBI150HJ-120-50	Fig. 4
200	2MBI200HJ-120-50	Fig. 4
300	2MBI300HJ-120-50	Fig. 4



Discrete IGBT

Vces (V)	Ic (A)	High-Speed V Series	High-Speed W Series	XS Series
650	30	-	-	FGW30XS65C
	35	FGW35N60HD	-	-
		FGW35N60HC	-	-
	40	-	FGW40N65WD	FGW40XS65C
		-	FGW40N65WE	
	50	FGW50N60HD FGW50N60HC	FGW50N65WD	FGW50XS65D
			FGW50N65WE	
			FGZ50N65WD	FGW50XS65C
			FGZ50N65WE	
	60	-	FGW60N65WD	-
		-	FGW60N65WE	-
	75	FGW75N60HD	FGW75N65WE	FGW75XS65D
FGW75N60HC		FGZ75N65WE	FGW75XS65C	
-		-	FGZ75XS65C	
1200	15	FGW15N120HD	-	-
	25	-	FGW25N120WD	-
		-	FGW25N120WE	-
	30	FGW30N120HD	-	-
	40	FGW40N120HD	FGW40N120WD	FGW40XS120C
			FGZ40N120WE	
75	-	-	FGW75XS120C	