T-39-31

2.6 IGBT Module Range with Soft and Fast (SFD) Free-Wheeling Diodes

In order to maintain switching losses to minimal, improving Free Wheeling Diodes, (FWD), is essential and Hitachi's version of this is the Soft and Fast Recovery (SFD) Free Wheeling Diode. Basically, improvements have been achieved in the following key requirements.

- High speed ... small recovery time, tr
- Low loss ... small reverse-peak current, Irp
- Low noise ... small rate of charge of recovery current, di/dt

Ultimately reducing your energy losses, Qrr.

2.7 IGBT Modules Electrical Characteristics

Voltage Series	Type Number	Absolute Maximum Ratings					Typical Electrical Characteristics						
		Package	VCES (V)	VGES (V)	IC (A)	PC (W)	VCE(sat) (V)	Cies (pF)	tr (µs)	ton (µs)	tf (µs)	toff (µs)	trr (µs)
600V	MBN200A6	Single Arm	600	±20	300	1200	2.5	18000	0.35	0.45	0.3	0.85	0.3
	MBN400A6				400	1300					0.35		
	MBM50A6	Single Phase (Dual Pack)	600	±20	50	250	3	2400	0.3	0.35	0.3	0.55	0.1
	MBM75A6				75	325		3700					0.15
	MBM100A6				100	400		4500					
	MBM150A6				150	600		7400	0.4	0.45		0.7	
	MBM200A6				200	730		9000					
	MBM300A6				300	1000		17000	0.35			0.85	
	MBB50A6	Three Phase (Six Pack)	600	±20	50	250	3	2700	0.3	0.35	0.3	0.55	0.1
	MBB75A6				75	300		3700					0.15
	MBB100A6				100	400		4500					
1200V	MBN200F12	Single Arm	1200	±20	200	1200	3	19000	0.4	0.5	0.4	1	0.3
	MBN300F12				300	1700		33000					
	MBM50F12	Single Phase (Dual Pack)	1200	±20	50	400	3	4800	0.4	0.5	0.4	0.75	0.25
	MBM75F12				75			8900				1	0.3
	MBM100F12				100	700		9300					
	MBM150F12				150	800		18000					
	MBB50F12	Three Phase (Six Pack)	1200	±20	50	-	-	-	-	-	-	-	-