Twin Builder Components: Power Semiconductors Library

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The power semiconductor components in **Twin Builder Elements>Manufacturers>Power Semiconductors** are the real characterized power devices from the manufacturers. There are Si diodes, Si Average IGBTs, Si Basic Dynamic IGBTs, Si Basic Dynamic MOSFETs, SiC diodes, and SiC Basic Dynamic MOSFETs.

The components are characterized using the Twin Builder device characterization tool, with related models (Power Diode Model/Average IGBT Model/Basic Dynamic IGBT Model/Power MOSFET Model). The characterization procedures follow the Twin Builder device characterization steps with the information from device datasheets. The device parameters are extracted at normal working point (VNOM, INOM, TNOM), provided by datasheets. The components' names are their part numbers.

Table 1

		Component (Device Part Number)	**Manufacturer**	**Max. Voltage**	**Max. Current**
Si	**Diodes**	APT100S20B	Advanced Power Technology	200V	100A
		APT60D100B	Advanced Power Technology	1000V	60A
		APT60D120B	Advanced Power Technology	1200V	60A
		BYR29X800	NXP	800V	60A
		D690S	Infineon	2200V	690A
		DSEI120	IXYS	600V	126A
		HFA15TB60	International Rectifier	600V	15A
		IDP18E120	Infineon	1200V	18A
		IDP30E120	Infineon	1200V	30A
	IGBTs_Average	5SNA0800N330100	ABB	3300V	800A(at 80°C)
		FS400R12A2T4	Infineon	1200V	400A
		FZ200R65KF2	Infineon	6500V(at 125°C)	200A (at 80°C)
		FZ2400R12HP4	Infineon	1200V	2400A (at 95°C)
		FZ600R65KF1	Infineon	6500V(at 125°C)	600A (at 80°C)
	IGBTs_ BasicDyn	5SNA0800N330100	ABB	3300V	800A(at 80°C)
		BSM200GA120DLC	Infineon	1200V	200A (at 80°C)
		FF1200R17KE3	Infineon	1700V	1200A(at 80°C)
		FF450R06ME3	Infineon	600V	450A(at

					80°C)
		FS400R12A2T4	Infineon	1200V	400A
		FS800R07A2E3	Infineon	650V	800A
		FZ1500R33HE3	Infineon	3300V(at 150°C)	1500A
		FZ200R65KF2	Infineon	6500V(at 125°C)	200A (at 80°C)
		FZ2400R12HP4	Infineon	1200V	2400A (at 95°C)
		FZ600R65KF1	Infineon	6500V(at 125°C)	600A (at 80°C)
	MOSFETs_ BasicDyn	2SK3579-01	Fuji	150V	23A
		APT12060B2VFR	Advanced Power Technology	1200V	20A
		BUK7Y13-40B	NXP	40V	38A(at 100°C)
		FDA59N25	Fairchild	250V	59A(at 25°C) 35A(at 100°C)
		IRFB4310	International Rectifier	100V	140A(at 25°C) 97A(at 100°C)
		IXFN130N30	IXYS	300V	130A
		IXFN32N120	IXYS	1200V	32A
	Thyristor	T1190N	Infineon	1400V	1190A
		5STP06T1600	ABB	1600V	641A
		5STP34Q5200	ABB	5300V	3875A
SiC	**Diodes**	APT2X21DC120J	Microsemi	1200V	20A(at 100°C)
		C4D20120D	Cree	1200V	33A(at 135°C)
		IDD04S60C	Infineon	650V	4A
		SCS205KGHR	ROHM	1200V	5A
	MOSFETs_ BasicDyn	APTMC120AM20CT1AG	Microsemi	1200V	143A(at 25°C) 108A(at 80°C)
		BSM180D12P2C101	ROHM	1200V	180A(at 60°C)
		CAS300M17BM2	Cree	1700V	325A(at 25°C) 225A(at 90°C)
		CPMF1200S080B	Cree	1200V	50A(at 25°C)

					30A(at 100°C)
		CPMF1200S160B	Cree	1200V	28A(at 25°C) 18A(at 100°C)
		IMW120R045M1	Infineon	1200V	52A(at 25°C)
		QJD1210010	POWEREX	1200V	150A(at 100°C)
		SCH2080KE	ROHM	1200V	35A(at 25°C) 22A(at 100°C)
		SCT30N120	ST	1200V	45A(at 25°C) 34A(at 100°C)
		SCTMU001F	ROHM	400V	20A(at 25°C)
	MOSFETs_ Average	APTMC120AM20CT1AG	Microsemi	1200V	143A(at 25°C) 108A(at 80°C)
		CAS300M17BM2	Cree	1700V	325A(at 25°C) 225A(at 90°C)

* Please check manufacturer datasheets of devices for more detailed information and data.

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