



## Intelligent Power Modules (IPMs)

Product	Description	Pricing (\$/Unit)	Compliance	Status	Family	Type	Substrate	Input Logic	Rated Voltage Min (V)	$I_{CS}$ @ 25 °C Min (A)	$V_{CE(sat)}$ @ 25 °C Typ (V)	$R_{DS(on)}$ ()	Emitter Configuration	Shutdown Pin	Mounting Type	Package Type
FAM65V05DF1	Intelligent Power Module (IPM), AEC-Q, Automotive, Inverter 650V, 50A	37.8457	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	50	2.25		3 Emitter Pins	Yes	DIP	DIP-027
			PPAP Capable													
			Pb-free Halide free													
FNA25060	Intelligent Power Module, 600 V, 50A	40.25	Pb-free	Active	SPM34	3-Phase Inverter IGBT	DBC	Active High	600	50	1.5		3 Emitter Pins	Yes	DIP	DIP-034
			Halide free													
			non AEC-Q and PPAP													
FNA41560T2	Intelligent Power Module (IPM), 600V, 15A	8.1833	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	15	1.6		3 Emitter Pins	No	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
FNB33060T	Intelligent Power Module, 600 V, 30A	13.594	Pb-free	Active	SPM3V	3-Phase Inverter IGBT	DBC	Active High	600	30	1.6		3 Emitter Pins	No	DIP	DIP-027
			Halide free													
			non AEC-Q and PPAP													
FNB34060T	Intelligent Power Module, 600 V, 40A	19.4827	Pb-free	Active	SPM3V	3-Phase Inverter IGBT	DBC	Active High	600	40	1.5		3 Emitter Pins	No	DIP	DIP-027
			Halide free													
			non AEC-Q and PPAP													
FNB34060T6	Intelligent Power Module, 600 V, 40A		Pb-free	Active	SPM3V	3-Phase Inverter IGBT	DBC	Active High	600	40	1.5		3 Emitter Pins	No	DIP	SPMCF-027 / PDD, STD, SPM27-CF SHORT LEAD (Special CUSTOMER SPECIFIC OPTION)
			Halide free													
			non AEC-Q and PPAP													
FNB35060T	Intelligent Power Module, 600 V, 50A	24.7612	Pb-free	Active	SPM3V	3-Phase Inverter IGBT	DBC	Active High	600	50	1.65		3 Emitter Pins	No	DIP	DIP-027
			Halide free													
			non AEC-Q and PPAP													
FNB41060	Intelligent Power Module, 600 V, 10A	9.7051	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	10	1.5		3 Emitter Pins	No	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
FNB43060T2	Intelligent Power Module, 600 V, 30A	11.0645	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	30	1.65		3 Emitter Pins	No	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
FND43060T2	Intelligent Power Module, 600 V, 30A	9.775	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	30	1.65		3 Emitter Pins	Yes	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
FPAM30LH60	PFC Intelligent Power Module, 600V, 30A	21.85	Pb-free	Active	SPM2 PFC	Interleaved PFC with Input Bridge Rectifier	DBC	Active High	600	30	2.2	-	Combined Emitter Pin	Yes	DIP	DIP-032
			non AEC-Q and PPAP													



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FSB50250AS	Intelligent Power Module, 500V, 2A	3.9651	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	1.2	-	2.5	3 Source Pins	No	SMD	SMD-023
			Halide free													
			non AEC-Q and PPAP													
FSB50250AT	Intelligent Power Module (IPM), Motion Control	3.4328	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	1.2	-	2.5	3 Source Pins	No	DIP	DIP-023
			Halide free													
			non AEC-Q and PPAP													
FSB50250BS	Intelligent Power Module, 500V, 2A	3.4133	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	2.2		5.5	3 Source Pins	No	SMD	SMD-023
			non AEC-Q and PPAP													
FSB50450AS	Intelligent Power Module, 500V, 4A	4.0498	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	1.5	-	1.9	3 Source Pins	No	SMD	SMD-023
			Halide free													
			non AEC-Q and PPAP													
FSB50550AS	Intelligent Power Module, 500V, 5A	4.5885	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	2	-	1	3 Source Pins	No	SMD	SMD-023
			Halide free													
			non AEC-Q and PPAP													
FSB50550AT	Intelligent Power Module (IPM), Motion Control	4.97	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	2	-	1	3 Source Pins	No	DIP	DIP-023
			Halide free													
			non AEC-Q and PPAP													
FSB50550BS	Intelligent Power Module (IPM), Motion Control	4.3357	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	500	3	-	3	3 Source Pins	No	SMD	SMD-023
			non AEC-Q and PPAP													
FSB50825AB	Intelligent Power Module, 250V, 3.6A	3.8156	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	250	3.6	-	0.33	3 Source Pins	No	DIP	DIP-021
			Halide free													
			non AEC-Q and PPAP													
FSB50825AS	Intelligent Power Module, 250V, 3.6A	6.1049	Pb-free	Active	SPM5	3-Phase Inverter MOSFET	Full Pack	Active High	250	3.6	-	0.33	3 Source Pins	No	SMD	SMD-023
			Halide free													
			non AEC-Q and PPAP													
FSB70250	Intelligent Power Module, 500V, 2A	3.45	Pb-free	Active	SPM7	3-Phase Inverter MOSFET	PQFN	Active High	500	3.3	-	2.5	3 Source Pins	Yes	SMD	PQFN-27
			Halide free													
			non AEC-Q and PPAP													
FSB70450	Intelligent Power Module, 500V, 4A	4.6	Pb-free	Active	SPM7	3-Phase Inverter MOSFET	PQFN	Active High	500	4.8	-	1.9	3 Source Pins	Yes	SMD	PQFN-27
			Halide free													
			non AEC-Q and PPAP													
FSB70550	Intelligent Power Module, 500V, 5A	5.2808	Pb-free	Active	SPM7	3-Phase Inverter MOSFET	PQFN	Active High	500	5.3	-	1.6	3 Source Pins	Yes	SMD	PQFN-27
			Halide free													
			non AEC-Q and PPAP													



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FSBB10CH120DF	Intelligent Power Module (IPM), Motion Control, 1200 V	21.6891	Pb-free	Active	SPM3V	3-Phase Inverter IGBT	DBC	Active High	1200	10	2.8		3 Emitter Pins	Yes	DIP	DIP-027
			Halide free													
			non AEC-Q and PPAP													
NFA41560R42	Intelligent Power Module(IPM), SPM45, 600V, 15A	6.325	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	15	1.5		3 Emitter Pins	No	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
NFA42060R42	Intelligent Power Module(IPM), SPM45, 600V, 20A	6.9805	Pb-free	Active	SPM45	3-Phase Inverter IGBT	Ceramic	Active High	600	20	1.5		3 Emitter Pins	No	DIP	CDIP-026
			Halide free													
			non AEC-Q and PPAP													
NFA50460R47	Intelligent Power Module, 600V, 4A, DIP	3.5413	Pb-free	Active	SPM5	3-Phase Inverter IGBT	Full Pack	Active High	600	4	1.85	-	3 Source Pins	No	SMD	SMD-023
			Halide free													
			non AEC-Q and PPAP													
NFA50460R4B	Intelligent Power Module, 600V, 4A, DIP	3.4666	Pb-free	Active	SPM5	3-Phase Inverter IGBT	Full Pack	Active High	600	4	1.85	-	3 Source Pins	No	DIP	DIP-023
			Halide free													
			non AEC-Q and PPAP													
NFAL5065L4B	Intelligent Power Module, SPM49, 650 V, 50A	37.5376	Pb-free	Active	SPM49	3-Phase Inverter IGBT	DBC	Active High	650	50	1.55		3 Emitter Pins	Yes	DIP	DIP30, 79x30/S PM49 CAA
			non AEC-Q and PPAP													
NFAL5065L4BT	Intelligent Power Module, SPM49, 650 V, 50A (NTC option)	33.6664	Pb-free	Active	SPM49	3-Phase Inverter IGBT	DBC	Active High	650	50	1.55		3 Emitter Pins	Yes	DIP	DIP31, 79x30/S PM49 CAB
			non AEC-Q and PPAP													
NFAL7565L4B	Intelligent Power Module, SPM49, 650 V, 75A	44.4015	Pb-free	Active	SPM49	3-Phase Inverter IGBT	DBC	Active High	650	75	1.55		3 Emitter Pins	Yes	DIP	DIP30, 79x30/S PM49 CAA
			non AEC-Q and PPAP													
NFAL7565L4BT	Intelligent Power Module, SPM49, 650 V, 75A (NTC option)	45.5478	Pb-free	Active	SPM49	3-Phase Inverter IGBT	DBC	Active High	650	75	1.55		3 Emitter Pins	Yes	DIP	DIP31, 79x30/S PM49 CAB
			non AEC-Q and PPAP													
NFAM2065L4B	Intelligent Power Module, SPM31, 650 V, 20 A	16.1	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	20	1.6		3 Emitter Pins	Yes	DIP	DIP39, 54.5x31.0 EP-2
			non AEC-Q and PPAP													
NFAM2065L4BT	Intelligent Power Module, SPM31, 650 V, 20 A (NTC option)	23.7286	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	20	1.6		3 Emitter Pins	Yes	DIP	MINI DIP39, 31.0x54.5
			non AEC-Q and PPAP													
NFAM3065L4B	Intelligent Power Module, SPM31, 650 V, 30A	19.55	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6		3 Emitter Pins	Yes	DIP	DIP39, 54.5x31.0 EP-2
			non AEC-Q and PPAP													
NFAM3065L4BL	Intelligent Power Module, SPM31, 650 V, 30A (Low speed version)		Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6		3 emitter pins	Yes	DIP	DIP39, 54.5x31.0 EP-2
			non AEC-Q and PPAP													
NFAM3065L4BT	Intelligent Power Module, SPM31, 650 V, 30A (NTC option)	18.4	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6		3 Emitter Pins	Yes	DIP	MINI DIP39, 31.0x54.5
			non AEC-Q and PPAP													
NFAM3065L4BTL	Intelligent Power Module, SPM31, 650 V, 30A (Low speed version, NTC option)	16.6663	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6		3 emitter pins	Yes	DIP	MINI DIP39, 31.0x54.5
			non AEC-Q and PPAP													



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NFAM5065L4B	Intelligent Power Module, SPM31, 650 V, 50A	21.85	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	50	1.65		3 Emitter Pins	Yes	DIP	DIP39, 54.5x31.0 EP-2
			non AEC-Q and PPAP													
NFAM5065L4BL	Intelligent Power Module, SPM31, 650 V, 50A (Low Speed Version)	18.4	Pb-free	Active	SPM31	Inverter	DBC	Active High	650	50	1.65		3 emitter pins	Yes	DIP	DIP39, 54.5x31.0 EP-2
			non AEC-Q and PPAP													
NFAM5065L4BT	Intelligent Power Module, SPM31, 650 V, 50A (NTC option)	20.7	Pb-free	Active	SPM31	3-Phase Inverter IGBT	DBC	Active High	650	50	1.65		3 Emitter Pins	Yes	DIP	MINI DIP39, 31.0x54.5
			non AEC-Q and PPAP													
NFAM5065L4BTL	Intelligent Power Module, SPM31, 650 V, 50A (Low speed Version, NTC option)	19.32	Pb-free	Active	SPM31	Inverter	DBC	Active High	650	50	1.65		3 emitter pins	Yes	DIP	MINI DIP39, 31.0x54.5
			non AEC-Q and PPAP													
NFAQ0560R43T	Intelligent Power Module (IPM), 600V, 5A	5.234	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	5	2	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x9.80, 1.00P (EP5)
			non AEC-Q and PPAP													
NFAQ0860L33T	Intelligent Power Module (IPM), 600V, 8A, Long lead	7.5384	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	8	2.4		3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x9.80, 1.00P (EP3)
			non AEC-Q and PPAP													
NFAQ0860L36T	Intelligent Power Module (IPM), 600 V, 8 A, Short lead	6.6127	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	8	2.4	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x7.70, 1.00P (EP4)
			non AEC-Q and PPAP													
NFAQ1060L33T	Intelligent Power Module (IPM), 600 V, 10 A, Long lead	8.074	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	10	1.9	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x9.80, 1.00P (EP3)
			non AEC-Q and PPAP													
NFAQ1060L36T	Intelligent Power Module (IPM), 600 V, 10 A	8.074	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	10	1.9	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x7.70, 1.00P (EP4)
			non AEC-Q and PPAP													
NFAQ1060L36TB	Intelligent Power Module (IPM), 600 V, 10 A	6.2398	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	10	1.9		3 Emitter Pin	Yes	DIP	DIP38, 29.60x18.20x7.70, 1.00P (EP4)
			non AEC-Q and PPAP													
NFAQ1560R43T	Intelligent Power Module (IPM), 600V, 15A	10.9151	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	15	1.8	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x9.80, 1.00P (EP5)
			non AEC-Q and PPAP													
NFAQ1560R43TL	Intelligent Power Module (IPM), 600V, 15A, EMI optimized version	6.7989	Pb-free	Active	Compact IPM	3-Phase Inverter IGBT	DBC	Active High	600	15	1.8	N/A	3 Emitter Pins	Yes	DIP	DIP38, 29.60x18.20x9.80, 1.00P (EP5)
			non AEC-Q and PPAP													
NFCS1060L3TT	Intelligent Power Module (IPM), PFC Combo, 600V, 10A	12.6278	Pb-free	Active	SIP2A Combo	3-Phase Inverter with PFC	IMS Full Pack	Active High	600	10	2		3 Emitter Pins	Yes	Vertical SIP	SIP35 56x25.8 (SIP2A-2)
			non AEC-Q and PPAP													
NFL25065L4BT	PFC SPM® 2 Series for 2-Phase Interleaved PFC	25.5513	Pb-free	Active	SPM2 PFC	Interleave PFC with Input Bridge Rectifier	DBC	Active High	650	50	1.55		Combined Emitter Pin	Yes	DIP	DIP-032
			non AEC-Q and PPAP													
NFP36060L42T	SPM® 3 27 Series Intelligent Power Module (IPM) Bridgeless PFC, 600 V, 60 A	15.0896	Pb-free	Active	SPM3V PFC	Bridgeless PFC Module with Shunt Resistor	DBC	Active High	600	60	1.55		Combined Emitter Pin with Internal Sense Resistor	Yes	DIP	DIP-027
			non AEC-Q and PPAP													
NFVA22512NP2T	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter 1200V, 25A	34.5	AEC Qualified	Active	ASPM34	3-Phase Inverter IGBT	DBC	Active High	1200	25	1.9		3 Emitter Pins	Yes	DIP	DIP34 80x33, AUTOMOTIVE MODULE
			PPAP Capable													
			Pb-free													



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NFVA23512NP2T	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter 1200V, 35A	51.7561	AEC Qualified	Active	ASPM34	3-Phase Inverter IGBT	DBC	Active High	1200	35	1.9		3 Emitter Pins	Yes	DIP	DIP34 80x33, AUTOMOTIVE MODULE
			PPAP Capable													
			Pb-free													
NFVA25012NP2T	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter 1200V, 50A	60.6769	AEC Qualified	Active	ASPM34	3-Phase Inverter IGBT	DBC	Active High	1200	50	1.9		3 Emitter Pins	Yes	DIP	DIP34 80x33, AUTOMOTIVE MODULE
			PPAP Capable													
			Pb-free													
NFVA33065L32	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter, 650V,30A	19.55	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6		3 Emitter Pins	Yes	DIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													
NFVA33065L42	Intelligent Power Module (IPM), ASPM27-V3, AEC-Q & AQG324, Automotive, Inverter 650V,30A	19.55	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	30	1.6	NA	3 Emitter Pin	Yes	Vertical SIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													
NFVA34065L32	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter 650V,40A	25.99	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	40	1.5		3 Emitter Pins	Yes	DIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													
NFVA35065L32	Intelligent Power Module (IPM), AEC-Q & AQG324, Automotive, Inverter 650V,50A	27.6	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	50	1.75		3 Emitter Pins	Yes	DIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													
NFVA35065L42	Intelligent Power Module (IPM), ASPM27-V3, AEC-Q & AQG324, Automotive, Inverter 650V,50A, Fast Switching	21.85	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	50	1.6	NA	3 Emitter Pin	Yes	Horizontal SIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													
NFVA36065L42	Intelligent Power Module (IPM), ASPM27-V3, AEC-Q & AQG324, Automotive, Inverter 650V,60A, Fast Switching	27.6	AEC Qualified	Active	ASPM27	3-Phase Inverter IGBT	DBC	Active High	650	60	1.8	NA	3 Emitter Pin	Yes	Horizontal SIP	DIP-027
			PPAP Capable													
			Pb-free													
			Halide free													