

650V Ultra Junction X2-Class Power MOSFETs

Ideal for Power Factor Correction (PFC) circuits and switching power supplies



Leiden, The Netherlands and Milpitas, CA. August, 2015 – IXYS Corporation (NASDAQ: IXYS), a worldwide manufacturer of power semiconductors and ICs for energy efficiency, power management, medical, transportation and motor control applications, announces its Ultra Junction Power MOSFET product line: 650V X2-Class Power MOSFETs. With current ratings ranging from 2A to 120A and on resistance as low as 24 milliohms, they are well suited for high-efficiency, high-speed power switching applications.

These devices were developed using a charge compensation principle and proprietary process technology, resulting in Power MOSFETs with significantly reduced on resistance and gate charge. A low on-state resistance reduces the conduction losses. It also lowers the energy stored in the output capacitance, thereby minimizing the switching losses. A low gate charge results in higher efficiency at light loads as well as lower gate drive requirements. In addition, these MOSFETs are avalanche rated and exhibit a superior dv/dt performance. Also due to the positive temperature coefficient of their on-state resistance, they can be operated

in parallel to meet higher current requirements.

“Our Ultra Junction technology has a better figure of merit than the state of the art super junction technology, when it comes to power MOSFET performance and cost of manufacturing. Our scientists have developed it with IXYS’ standards of ruggedness that made our power MOSFETs world famous. With the combination of reduced on resistance and improved switching and thermal performance, these devices offer the best cost performance to our customers, even better than SiC MOSFETs, especially in ruggedness and reliability,” commented Dr. Nathan Zommer, CEO and Founder of IXYS Corporation. “We have already been delivering these products to select customers and utilize them in our new Power Solid State Relay products.”

Designed for such applications as Power Factor Correction (PFC) circuits, switched-mode and resonant-mode power supplies, DC-DC converters, AC and DC motor drives, solid state relays, and robotic and servo control, these MOSFETs enable higher efficiency along with high power density and cooler system performance.

These new 650V X2 Power MOSFETs are available in the following international standard size packages: TO-252, TO-220 (standard or over-molded), TO-263, SOT-227, PLUS247, and TO-264. Some example part numbers include IXTY2N65X2, IXTA4N65X2, IXTP8N65X2, and IXTK102N65X2, with drain current ratings of 2A, 4A, 8A, and 102A, respectively.

Available Parts

Part Number	V _{max} (V)	I _{max} T _c = 25°C (A)	R _{th(jc)} max T _i = 25°C (°C)	C _{in} typ (pF)	Q _{th(jc)} typ (nC)	t _{tr} typ (µs)	R _{th(jc)} max (°C/W)	P _d max (W)	Package Type
IXTY2N65X2	650	2	2.3	180	4.3	137	2.27	55	TO-252
IXTP2N65X2	650	2	2.3	180	4.3	137	2.27	55	TO-220
IXTP4N65X2	650	4	0.85	455	8.3	160	1.56	80	TO-220
IXTP8N65X2M	650	4	0.55	800	12	200	3.9	32	TO-220 (overmolded)
IXTY4N65X2	650	4	0.85	455	8.3	160	1.56	80	TO-252
IXTA4N65X2	650	4	0.85	455	8.3	160	1.56	80	TO-263
IXTY8N65X2	650	8	0.5	800	12	200	0.83	150	TO-252
IXTA8N65X2	650	8	0.5	800	12	200	0.83	150	TO-263
IXTP8N65X2	650	8	0.5	800	12	200	0.83	150	TO-263
IXTA12N65X2	650	12	0.3	1100	17	220	0.69	180	TO-263
IXTH12N65X2	650	12	0.3	1100	17	220	0.69	180	TO-247
IXTP12N65X2	650	12	0.3	1100	17	220	0.69	180	TO-220
IXTH34N65X2	650	34	0.105	3120	53	400	0.22	540	TO-247
IXTH48N65X2	650	48	0.068	4420	77	400	0.19	660	TO-247
IXTR102N65X2	650	54	0.033	10900	152	450	0.38	330	ISOPLUS247
IXTH62N65X2	650	62	0.052	5940	104	420	0.16	780	TO-247
IXTN102N65X2	650	76	0.03	10900	152	450	0.21	595	SOT-227
IXTH80N65X2	650	80	0.04	7753	144	400	0.14	890	TO-247
IXTX102N65X2	650	102	0.03	10900	152	450	0.12	1040	PLUS247
IXTK102N65X2	650	102	0.03	10900	152	450	0.12	1040	TO-264
IXTX120N65X2	650	120	0.024	13600	240	410	0.1	1250	PLUS247
IXTK120N65X2	650	120	0.024	13600	240	410	0.1	1250	TO-264

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