

# Cooler, Faster, Tougher, Better . . . Polar.

## 500V & 600V PolarHV™ Standard and HiPerFET™ Power MOSFETs

### Features

- Over 30% Lower  $R_{DS(on)}$  and  $Q_G$
- Lower thermal impedance and increased power handling
- Excellent ruggedness and dV/dt capability
- HiPerFETs incorporate a fast intrinsic body diode with very low  $Q_{rr}$  and  $t_{rr}$

### Benefits

- Reduced conduction and switching losses
- Reduced gate drive requirements
- Reduced cost versus power handling
- Improved reliability and ruggedness
- ISOPLUS™ packages provide for enhanced thermal cycling capability as compared to standard discrete packages

### Polar HV Product Family Part Numbers

Example Part Number: IX F V 26 N 50 P S

IXYS Part Number	T - Standard F - HiPerFET	Package Type (2)	Current [A] XX or XRX = X.X	N-Channel	50 - 500V 60 - 600V	Polar Technology	Suffix
IX	T	P, Y	1R6	N	50	P	
IX	T	P, Y	2R4	N	50	P	
IX	T, F	A, P, Y, P...M	3	N	50	P	M
IX	T, F	A, P, U, Y, P...M	5	N	50	P	M
IX	T	A, P	6	N	50	P	
IX	T, F	A, P, P...M	8	N	50	P	M
IX	T, F	I, A, P, P...M	12	N	50	P	M
IX	T, F	Q, C, H, A, P	16	N	50	P	
IX	T, F	Q, H, V, V...S	22	N	50	P	S
IX	T, F	Q, H, T, V, V...S	26	N	50	P	S
IX	T, F	Q, C, R, H, T, V, V...S	30	N	50	P	S
IX	T, F	Q, C, R, H, T, V, V...S	36	N	50	P	S
IX	T, F	Q, H, K, R, T	44	N	50	P	
IX	F	K, N, R, X	64	N	50	P	D2, D3
IX	F	K, N, R, X	80	N	50	P	
IX	F	B, L, N	100	N	50	P	
IX	T	P, U, Y	1R4	N	60	P	
IX	T	P, Y	2	N	60	P	
IX	T	A, P, Y	3	N	60	P	
IX	T	A, P, U, Y	4	N	60	P	
IX	T	A, P	5	N	60	P	
IX	T	A, P, P...M	7	N	60	P	M
IX	T, F	I, P...M, A, P	10	N	60	P	M
IX	T, F	Q, P...M, C, H, A, P	14	N	60	P	M
IX	T, F	Q, P...M, H, V, V...S	18	N	60	P	S, M
IX	T, F	Q, C, H, V, V...S	22	N	60	P	S
IX	T, F	Q, H, T, V, V...S	26	N	60	P	S
IX	T, F	Q, C, R, H, T, V, V...S	30	N	60	P	S
IX	F	H, K, R, T	36	N	60	P	
IX	F	K, N, R, X	48	N	60	P	
IX	F	K, N, R, X	64	N	60	P	
IX	F	B, L, N	82	N	60	P	

RED = Package Type available in Standard; BLUE = Package Type available in HiPerFET; GREEN = Package Type available in both Standard and HiPerFET. If you can't find the combination you need, contact your IXYS representative.

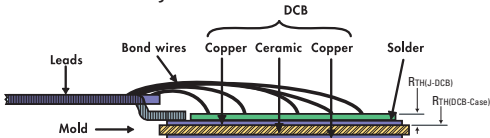
An "M" suffix designates the PLUS220SMD (P...M) Package Type. An "S" suffix designates the Overmolded TO-220 (V...S) Package Type. The "D2" suffix indicates the inclusion of a FRED diode in Boost configuration. "D3" indicates a FRED diode in Buck configuration. "D2" & "D3" are currently available in the "N" (SOT-227B) package.

IXYS offers the Polar family in voltages ranging from 55V to 800V. Check our entire portfolio online.

For a complete listing of Standard Polar Power MOSFETs please visit: <http://www.ixys.com/Appasp/pdmfet03.asp>

For a complete listing of HiPerFET Polar Power MOSFETs please visit: <http://www.ixys.com/Appasp/pdhfet02.asp>

### ISOPLUS™ Packages with Internal Alumina DCB Isolation\*



- Provides 2500V, UL recognized isolation with superior thermal performance (E153432).
- Improves temperature and power cycling capability.
- Cost effective clip mounting.

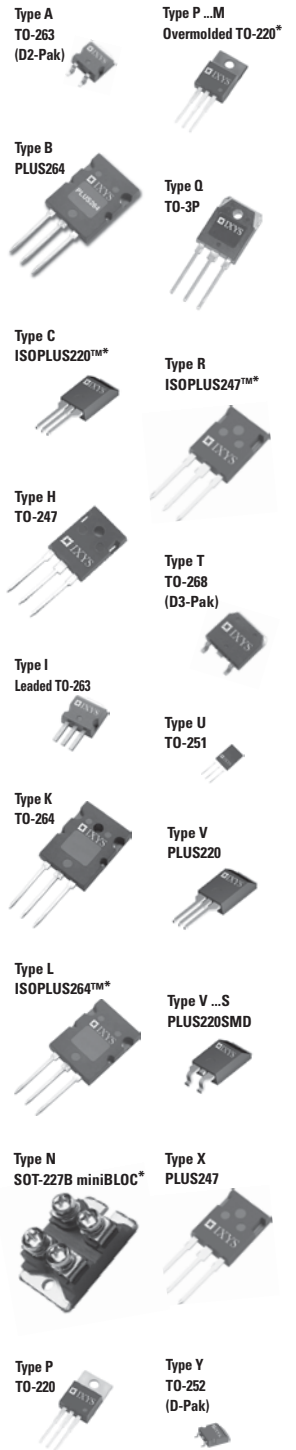
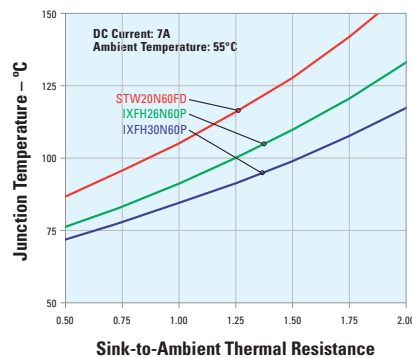
\* IXYS Patented Packages, Patent No. 6,404,065

Example Part + Isolation Medium	$R_{th(J-C)}$	$R_{th(C-S)}$	$R_{th(J-S)}$
IXFP14N60P with SIL-PAD 2000™	0.42 C/W	2.37 C/W	2.79 C/W
IXFC14N60P (ISOPLUS247™ with Internal DCB Isolation)	$R_{th(J-DCB)}$ 0.75 C/W	$R_{th(DCB-Case)}$ 0.50 C/W	0.21 C/W 1.46 C/W

□ – Denotes Inclusion of Isolation Boundary.

SIL-PAD is a trademark of Berquist Co. PolarHV, ISOPLUS and HiPerFET are trademarks of IXYS Corporation

Graph showing lower operating temperature of PolarHV Power MOSFETs vs. competition as a function of sink to ambient thermal resistance.



\*Drain and Source currents may be limited by package constraints

[www.ixys.com](http://www.ixys.com)

Efficiency Through Technology

