

POWERLINE SERIES — for semi-custom Design

International Rectifier's custom products facility houses the full compliment of automatic assembly and test equipment necessary to manufacture and develop power modules to meet virtually any application-specific requirement you may have. Dedicated thick film firing, production tooling, automatic testing and engineering development capability provide the foundation for total and immediate responsiveness to product quality, product performance, product reliability and product delivery.

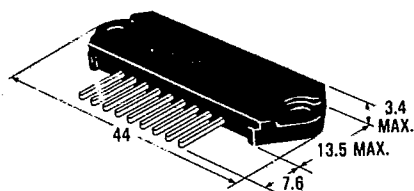
To further ensure the integrity of your design — from concept to finished product — every step of manufacture is carried out in a modern, self-contained clean room equipped for thick film processing of raw silicon to final device testing.

The POWERLINE series forms part of this custom product range and provides both standard and custom configurations in four outlines. The packages are designated POWERLINE 1, 2, 3 & 4 and are shown below. Pages 17 & 18 give details of the range of standard configurations. Should none of these suit your application then this and the following page will give basic details of IR's capability.

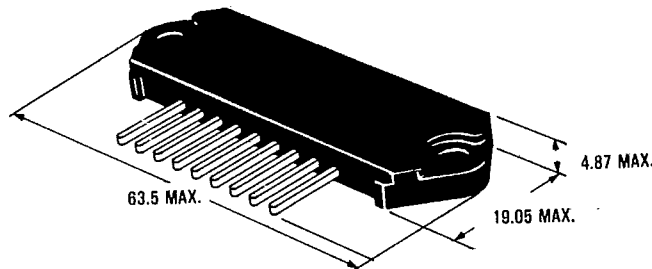
On page 16 the part numbering system breakdown is given, along with the number of die that can be mounted in each package, and the current/voltage capability for a full bridge circuit.

For further details and discussions for your specific application please contact your local sales office.

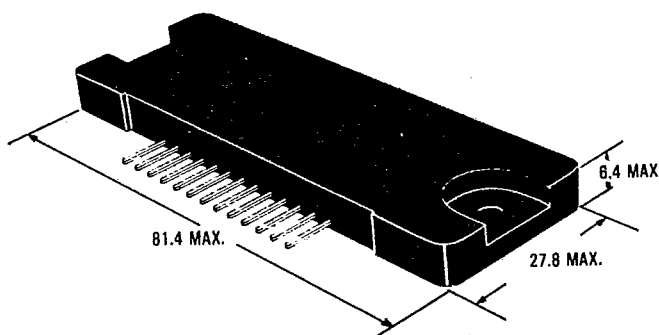
Powerline 1



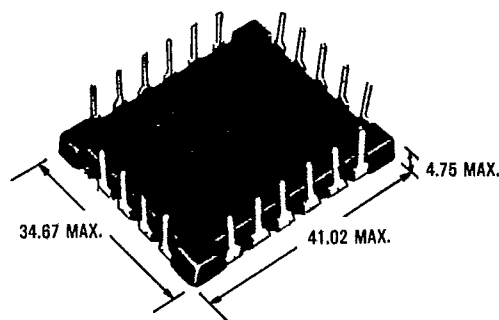
Powerline 2



Powerline 3



Powerline 4



The number of pins will vary depending on the circuit.

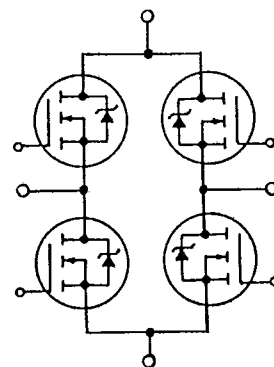
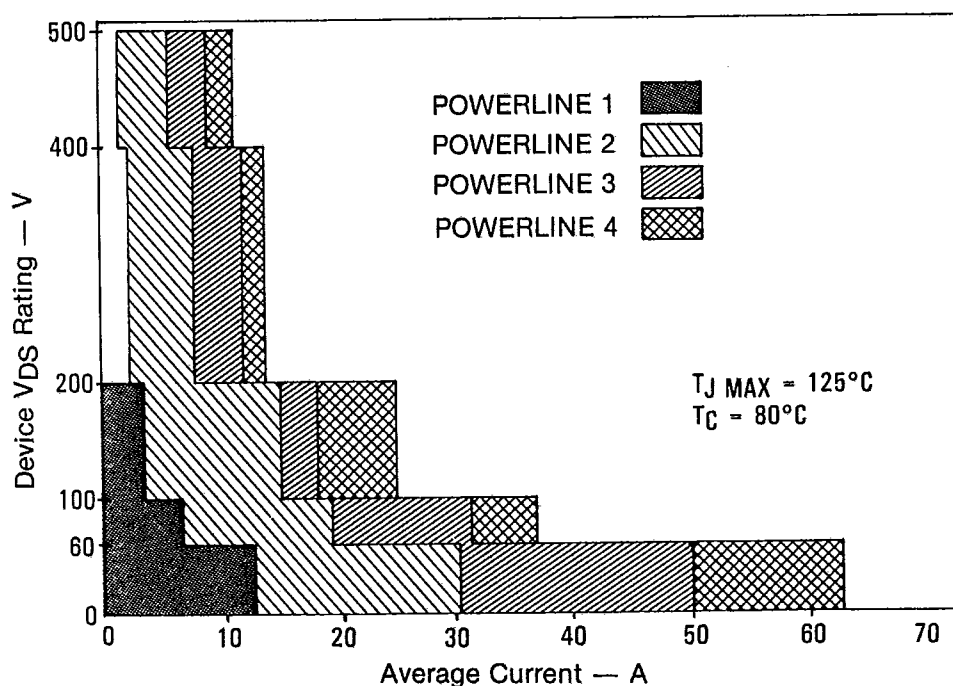
Part Numbering system for POWERLINE SERIES

T-39-03

CP	W	2	5	5	A
CUSTOM PRODUCT					
M = POWERLINE 4					
W = POWERLINE 3					
X = POWERLINE 2					
Y = POWERLINE 1					
1 = 1/2 'H' Bridge					
2 = 'H' Bridge					
3 = 3 ϕ Bridge					
4 = 2 die or more common source					
5 = 2 or more independent HEXFETs					
VOLTAGE					
0 = 60V					
1 = 100V					
2 = 200V					
3 = 250V					
4 = 400V					
5 = 500V					
					HEXFET Die Size
					2 = HEX-2.
					3 = HEX-3.
					4 = HEX-4.
					5 = HEX-5.
					6 = HEX-6.

Number of Die per Package

	DIE SIZE				
POWERLINE	HEX-2	HEX-3	HEX-4	HEX-5	HEX-6
1	6	4	2	2	—
2	8	6	4	4	2
3	—	8	6	6	4
4	—	—	8	8	6

Voltage/Current Capability


HEXFET POWER MODULES — POWERLINE SERIES

Part Number	V _{DS}	I _D max. (1) @ T _C = 45°C	Maximum R _{DS(on)} Per switch		V _{SD} (2) Per switch		Typical R _{thJC} K/W	Circuit	Outline	Bulletin
			LOW SIDE Ω	HIGH SIDE Ω	LOW SIDE V	HIGH SIDE V				

3 PHASE BRIDGES FOR BRUSHLESS DC MOTORS

IRFT004 CPY301F	50 50(6)	3.3 3.3	0.24 0.24	0.50 0.50	1.0 1.0	-5.5 1.5	10.8 10.8	A B(3)	POWERLINE 1 POWERLINE 1	PD-5.021 PD-5.015
CPX303A●	60	17.5	0.05	0.05	1.6	1.6	3.8	A(3)	POWERLINE 2	PD-5.018
IRFT002● CPY302F	60 60(6)	6.1 6.1	0.10 0.10	0.28 0.28	1.25 1.25	-6.3 1.5	5.6 5.6	A B(4)	POWERLINE 1 POWERLINE 1	PD-5.021 PD-5.015
CPX313A	100	7.8	0.18	0.18	2.5	2.5	5.3	A(3)	POWERLINE 2	PD-5.018
IRFT001 CPY312F	100 100(6)	3.5 3.6	0.30 0.30	0.60 0.60	2.5 2.5	-6.3 1.5	7.5 7.5	A B(6)	POWERLINE 1 POWERLINE 1	PD-5.021 PD-5.015

H-BRIDGES FOR STEPPER MOTORS, BRUSH DC MOTORS, SERVO AMPLIFIERS & POWER SUPPLIES

CPY203E● IRFT003● CPY213E	60(6) 60 100(6)	10.1 6.1 6.1	0.05 0.10 0.18	0.14 0.28 0.30	1.6 1.25 2.5	1.5 -6.3 1.5	5.6 3.8 5.3	E(3)(4) D E(3)(4)	POWERLINE 1 POWERLINE 1 POWERLINE 1	PD-5.014 PD-5.014 PD-5.014
CPX234A CPX233A	250 250	9.0 5.9	0.28 0.45	0.28 0.45	1.8 2.0	1.8 2.0	1.8 2.6	G G	POWERLINE 2 POWERLINE 2	PD-5.017 —
CPW256K● CPW255K	500 500	16.0 10.5	0.27 0.40	0.27 0.40	1.3 1.4	1.3 1.4	0.6 1.0	F(5) F(5)	POWERLINE 3 POWERLINE 3	— —
CPX254A●	500	5.3	0.85	0.85	2.0	2.0	1.8	G	POWERLINE 2	PD-5.017

HALF-BRIDGES FOR HIGH POWER MOTOR AND POWER SUPPLY APPLICATIONS

CPY135K CPY155K	250 500	17.5 10.5	0.14 0.40	0.14 0.40	1.8 1.4	1.8 1.4	1.0 1.0	H H	POWERLINE 1 POWERLINE 1	PD-5.013 PD-5.013
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UNIPOLAR DRIVE FOR STEPPER MOTORS AND SOLENOID DRIVES

CPY402H CPY400H *	60(6) 100(6)	10.0 7.8	0.10 0.18	— —	1.25 2.5	1.5 1.5	5.6 5.3	C(4) C(4)	POWERLINE 1 POWERLINE 1	PD-5.016 PD-5.016
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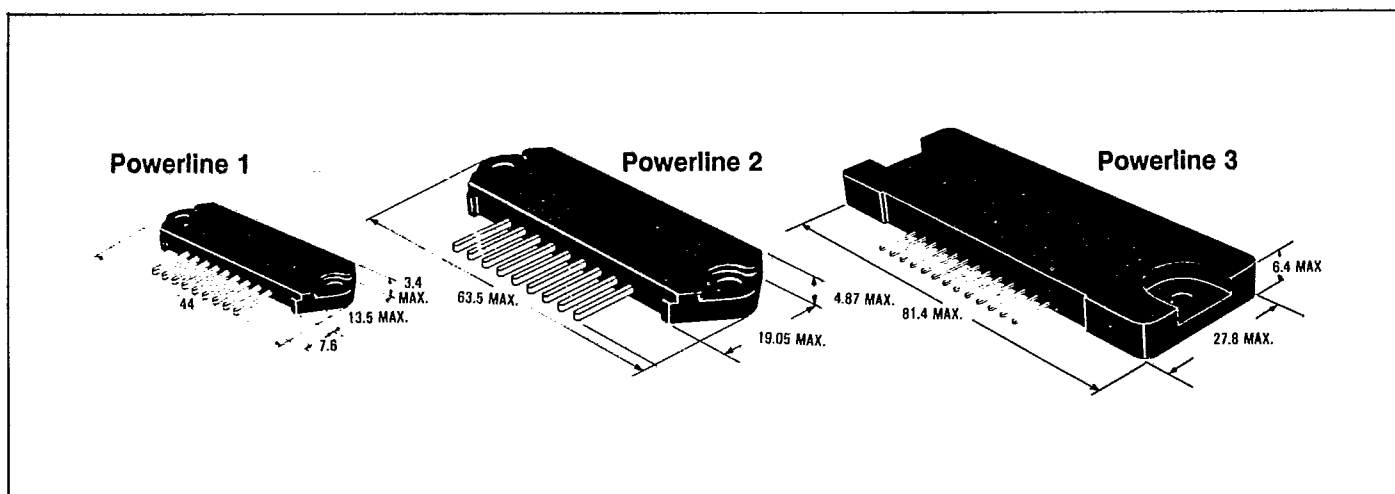
Notes: (1) Complementary pair; p-channel limited where applicable. (2) Typical; consult bulletin for test conditions. (3) Contains HEXSense current sensing die.

(4) Includes freewheeling diode across the p-channel die. (5) Employs gate-source zener diodes for ESD protection.

(6) V_{SD} value given for reverse conduction through freewheeling diode.

● Preferred part.

* The coding of this device does not follow that shown on page 28.



Powerline Series Standard Configurations

T-39-03

