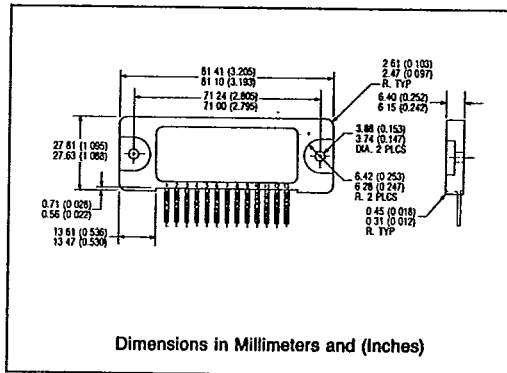
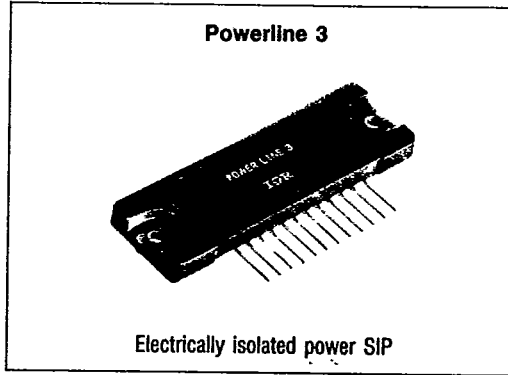


HEXFET® Power Module

CPW200-Series Power H-Bridges

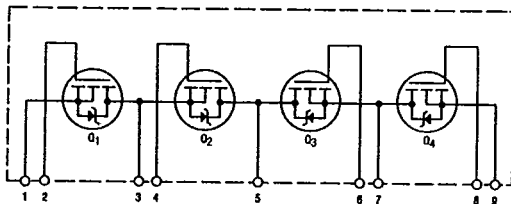
The CPY200 series of power modules are H-bridge (full-bridge) configured HEXFETs, in a practical, heat-sinkable electrically isolated SIP (single in-line) package. The series is available in a variety of voltages, on-resistances, and current ratings to satisfy almost any design requirement in medium to high-power power supplies, high-voltage motor drives, amplifiers, etc.

Contained in a compact 1" x 3.2" x 0.25" package, these modules feature voltage ratings of 500 volts, with on-resistances ranging from 0.4 down to 0.27 ohms. A single CPW200 module replaces four TO-3 type HEXFETs, and can handle up to 25 amperes. The CPW200 series offers the designer space savings, electrical isolation, ease of construction, and rugged, avalanche-rated HEXFETs.



MODULE DEVICES

Schematic



Absolute Maximum Ratings

Parameter	Device		Units	Notes
	CPW255A	CPW256A		
Breakdown Voltage	500		V	
Gate-to-Source Voltage	±20		V	
Continuous Current	11	17.5	A	All devices conducting, T _C = 25°C
	10.5	16	A	All devices conducting, T _C = 45°C
	7.0	11	A	All devices conducting, T _C = 100°C
Pulsed Drain-to-Source Current	52	84	A	Any single device, limited by Junction Temperature
Operating and Storage Temperature	-30 to +150		°C	
Lead Temperature	+300		°C	0.063" (1.6 mm) from case for 10 sec
Mounting Torque	8.0 (0.9)		lbf • in (N • m)	#6-32 Pan Head Screw, non-lubricated threads

INTERNATIONAL RECTIFIER

HEXFET Electrical Characteristics @ $T_C = 25^\circ\text{C}$ (Unless Otherwise Specified)

T-39-27

		Device		Units	Test Conditions
		CPW256A	CPW255A		
BV_{DSS}	Max. Drain Source Breakdown Voltage	500	500	V	$V_{GS} = 0, I_D = 250 \mu\text{A}$
$R_{DS(on)}$	Max. Static Drain-to-Source On-State Resistance of Die $\text{\textcircled{O}}$	0.40	0.27	Ω	$V_{GS} = 10\text{V}$
$V_{GS(th)}$	Gate Threshold Voltage	2.0 to 4.0		V	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$
I_{GSS}	Max. Gate Source Reverse Leakage	100		nA	$V_{GS} = 20\text{V}$
I_{DSS}	Max. Zero Gate Voltage Drain Current	250		μA	$V_{DS} = \text{Max. Rating}, V_{GS} = 0\text{V}$
		1000		μA	$V_{DS} = 0.8$ (Max. Rating), $V_{GS} = 0\text{V}, T_C = 125^\circ\text{C}$
g_{fs}	Min. Forward Transconductance	8.7	13	S (l)	
$t_{d(on)}$	Max. Turn-On Delay Time	27	35	ns	$V_{DD} = 0.5 (BV_{DSS})$
t_r	Max. Rise Time	66	120	ns	
t_f	Max. Fall Time	60	98	ns	
Q_g	Max. Total Gate Charge	130	200	nC	
V_{SD}	Max. Diode Forward Voltage	1.4	1.3	V	
t_{rr}	Diode Recovery Time	1800	1200	ns	@ $di/dt = 100 \text{ A}/\mu\text{s}$
Q_{RR}	Diode Recovery Charge	11	17	μC	@ $di/dt = 100 \text{ A}/\mu\text{s}$
For test conditions and other information, consult these data sheets:		IRF450	IRF460	—	

Thermal Resistance:

R_{thJC}	Thermal Resistance, (Each Device, junction to case)	1.0	0.6	$^\circ\text{C}/\text{W}$	Typical
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$\text{\textcircled{O}}$ Pulse Test: Pulse Width $\leq 300 \mu\text{s}$. Duty Cycle $\leq 2\%$.

The CPW200 series can be manufactured with different voltages, on-resistances, current-sensing HEXSENSE[®] die, and other components, to suit your semi-custom requirements. Contact IR and ask about minimum order quantities.

The CPW200 series will be available December, 1987.