Power Solid State Relays

(Power dissipation greater than 1 Watt)

Power SIP, ISOPLUS™-264 and i4-PAC™ Relays

Clare and IXYS have joined forces to bring OptoMOS™ technology, reliability, and compact size to the new Power SIP, i4-PAC and ISOPLUS-264 series of power solid state relays. Development of these new products was founded on the blending of Clare's traditional strengths in the design and manufacture of photovoltaic integrated circuits (ICs), leadframe design, and multichip packaging with IXYS' expertise in power MOSFETs, power packages, and substrate technology.

The optically coupled MOSFET technology provides 2500V_{rms} of input to output isolation. Similar to Clare's solid state relays, the optically coupled output is controlled by a GaAlAs infrared LED.

Clare Power Relays are now offered in three package types: the **Power SIP**, the **i4-PAC**, and the **ISOPLUS-264**. The Power SIP package offers pin-to-pin compatibility with other solid state relays providing an easy upgrade path for existing designs and compatibility for new designs.

The i4-PAC and the ISOPLUS-264 packages feature a unique assembly process whereby the silicon is soft soldered onto a Direct Copper Bond (DCB) substrate rather than traditional bonding onto an epoxy encapsulated copper frame. This structure allows for a substantially lower junction-to-case thermal impedance when compared to conventionally assembled power relays. The i4-PAC thermal resistance is 0.35°C/W while the ISOPLUS-264 has an even lower impedance of 0.30°C/W.

Although exposed on the backside of these packages, the electrically non-conductive surface of the DCB ceramic substrate provides 2500V_{rms} of isolation to the package's electrically conductive power switching and control leads.

The combination of an electrically isolated non-conductive exterior and low thermal impedance makes the new i4-PAC and ISOPLUS-264 power relays an ideal solution for power applications preferring a non-biased heat sink with superior thermal management properties.

Features

- Handles loads up to 9A
- Voltage ratings up to 1000V_P
- Low On-resistance
- Non-conductive thermal pad for heat sink applications
- Industry standard 4-Pin SIP package
- Low input control current
- Low thermal impedances:
  0.30°C/W - ISOPLUS-264
  0.35°C/W - i4-PAC
  1.5°C/W - Power SIP

Applications

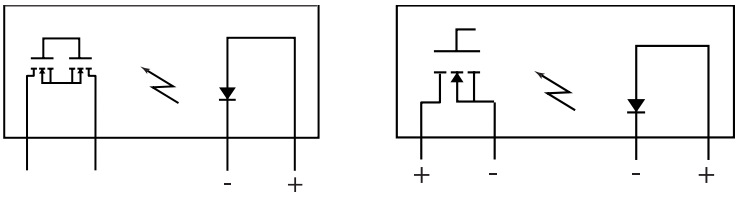
- Motor controls
- Robotics
- Medical equipment
- Railroad/traffic controls
- Consumer appliances
- Industrial control
- Test and measurement equipment

Specifications for: AC/DC Single Pole Power SIP, ISOPLUS-264 and i4-PAC Relays

Part Number ② ➤ New	Blocking Voltage V_P	Load Curent No Heat Sink A_{rms}	Load Curent with Heat Sink ① A_{rms}	Load Curent with T_C=25°C A_{rms}	On Resistance Ω	Input Control Current mA	Switching Speeds T_{ON}/T_{OFF} ms	Package Type
CPC1906	60	2.0		-	0.3	10	10 / 5	Power SIP
CPC1908	60	3.5	8.5	15	0.3	10	20 / 5	i4-PAC
CPC1909	60	6.5	15.0	15	0.1	10	25 / 10	ISOPLUS-264
CPC1916Y	100	2.5		-	0.34	10	5 / 3	Power SIP
CPC1918	100	5.25	13.0	15	0.1	10	25 / 10	ISOPLUS-264
CPC1926Y	250	0.7		-	1.4	10	10 / 10	Power SIP
➤ **CPC1927**	250	2.7	6.7	15	0.2	10	25 / 10	ISOPLUS-264
CPC1967	400	1.35	3.35	13.15	0.85	10	20 / 5	i4-PAC
CPC1973Y	400	0.35		-	5.0	10	5 / 3	Power SIP
CPC1977	600	1.25	3.1	12.25	1.0	10	20 / 5	i4-PAC
CPC1978	800	0.75	1.85	7.25	2.3	10	20 / 5	i4-PAC
CPC1979	600	1.4	3.5	14.5	0.75	10	25 / 5	ISOPLUS-264
CPC1981Y	1000	0.18		-	18.0	10	10 / 5	Power SIP
CPC1986	1000	0.65	1.6	6.5	3.0	10	20 / 5	i4-PAC
CPC1988	1000	0.9	2.25	9.4	2.5	10	20 / 5	ISOPLUS-264

① *5°C/W Heat Sink,* ② *All parts provide 2500 V_{rms} of isolation voltage.*

Block Diagrams



DC Only