



## OPTO-COUPLERS

### KP SERIES

- A DIVERSE RANGE OF OPTOCOUPLERS, OFFERING 5,000V RMS ISOLATION
- MINIMUM 60% CURRENT TRANSFER RATIO, 600% FOR DARLINGTON OUTPUT
- PARTS SELECTED ACCORDING TO CURRENT TRANSFER RATIO
- FROM 4 TO 16 PIN SMD PACKAGE WITH 2.54mm PITCH
- KP1000: 1 TO 4 CHANNELS, DC INPUT, OPEN COLLECTOR OUTPUT
- KP2000: 1 CHANNEL, DC INPUT, BASE CONNECTION TO OPEN COLLECTOR OUTPUT
- KP3000: 1 TO 4 CHANNELS, AC INPUT, OPEN COLLECTOR OUTPUT
- KP4000: 1 TO 4 CHANNELS, DC INPUT, OPEN COLLECTOR DARLINGTON OUTPUT
- KP5000: 1 CHANNEL, DC INPUT, BASE CONNECTION TO OPEN COLLECTOR DARLINGTON OUTPUT
- KP6000: 1 CHANNEL, AC INPUT, BASE CONNECTION TO OPEN COLLECTOR OUTPUT
- KP7000: 1 CHANNEL, DC INPUT, AMPLIFIED OUTPUT WITH HYSTERESIS, BUILT IN PULL-UP RESISTOR GIVING TTL AND LS TTL COMPATIBLE OUTPUT
- FUNCTIONALLY EQUIVALENT TO INDUSTRY STANDARD PARTS FROM MOTOROLA, TOSHIBA, GE, SIEMENS, TELEFUNKEN, TEXAS INSTRUMENTS AND NEC

### ABSOLUTE MAXIMUM RATINGS

| General                     | KP1000 – KP6000      | KP7000            |
|-----------------------------|----------------------|-------------------|
| Total Power Dissipation     | 200mW                | 170mW             |
| Isolation Voltage, 1 min    | 5,000Vrms            | 5,000Vrms         |
| Operating Temperature       | -30 to +100°C        | -25 to +85°C      |
| Storage Temperature         | -55 to +125°C        | -40 to +125°C     |
| <b>Input</b>                | <b>DC</b>            | <b>AC</b>         |
| Forward Current             | 50mA                 | ±50mA             |
| Peak Forward Current        | 1A                   | ±1A               |
| Reverse Voltage             | 6V                   | 6V                |
| Power Dissipation           | 70mW                 | 70mW              |
| <b>Output</b>               | <b>Transistor</b>    | <b>Darlington</b> |
| Collector-Emitter Voltage   | 60V                  | 300V              |
| Collector Current           | 50mA                 | 150mA             |
| Collector Power Dissipation | 150mW                | 200mW             |
| <b>KP7000 Output</b>        | <b>Specification</b> |                   |
| Output Current              | 50mA                 |                   |
| Power Dissipation           | 150mW                |                   |

### ELECTRO-OPTIC CHARACTERISTICS

| Input                                | Parameter         | Conditions  |
|--------------------------------------|-------------------|---|
| Forward Voltage                      | 1.4V max          | I <sub>F</sub> = 20mA DC or ±20mA AC                              |
| Peak Forward Voltage                 | 3.5V max          | I <sub>FM</sub> = 0.5A DC or ±0.5A AC                             |
| Output                               | Parameter         | Conditions  |
| Isolation Resistance                 | 50GΩ min          | DC500V  |
| Floating Capacitance                 | 1.0pF max         | V = 0, f = 1MHz   |
| C – E Saturation Voltage, Transistor | 0.3V max          | I <sub>F</sub> = 20mA, I <sub>C</sub> = 1mA                       |
| C – E Saturation Voltage, Darlington | 1.5V max          | I <sub>F</sub> = 20mA, I <sub>C</sub> = 5mA                       |
| Cut-Off Frequency, Transistor        | 80KHz typ         | V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω |
| Cut-Off Frequency, Darlington        | 7KHz typ          | V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω |
| KP7000 Output                        | Parameter         | Conditions  |
| Operating Supply Voltage             | 4.5V min, 17V max |   |
| Low Level Output Voltage             | 0.4V max          | I <sub>OL</sub> = 16mA, V <sub>CC</sub> = 5V, I <sub>F</sub> = 0  |
| High Level Output Voltage            | 3.5V min          | V <sub>CC</sub> = 5V, I <sub>F</sub> = 1mA                        |
| High to Low Threshold I/P Current    | 0.1mA min         | V <sub>CC</sub> = 5V, R <sub>L</sub> = 280Ω                       |
| Low to High Threshold I/P Current    | 1.0mA max         | V <sub>CC</sub> = 5V, R <sub>L</sub> = 280Ω                       |
| Hysteresis                           | 0.7               | V <sub>CC</sub> = 5V, R <sub>L</sub> = 280Ω                       |
| Isolation Resistance                 | 50GΩ min          | DC500V  |

#### SQP – SMALL QUANTITY PRICES

A typical unit price for a quantity of 100 pieces. It will vary (up or down) depending on the time, order value etc. Call us for your update.



## OPTO-COUPLERS

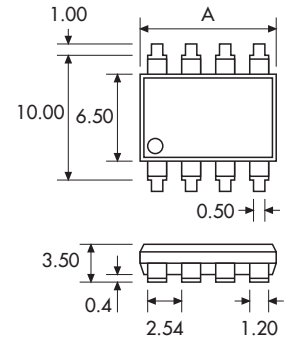


### KP SERIES SPECIFICATIONS

| Part Number                           | No. Channels | CTR Min % | CTR Max % | SQP £ ea. |
|---------------------------------------|--------------|-----------|-----------|-----------|
| <b>DC I/P, Transistor O/P</b>         |              |           |           |           |
| KP1010SA                              | 1            | 60        | 160       | 0.16      |
| KP1010SB                              | 1            | 130       | 260       | 0.16      |
| KP1010SC                              | 1            | 200       | 400       | 0.16      |
| KP1010SD                              | 1            | 300       | 600       | 0.16      |
| KP1010SE                              | 1            | 60        | 600       | 0.16      |
| KP1020SA                              | 2            | 60        | 160       | 0.34      |
| KP1020SB                              | 2            | 130       | 260       | 0.34      |
| KP1020SC                              | 2            | 200       | 400       | 0.34      |
| KP1020SD                              | 2            | 300       | 600       | 0.34      |
| KP1020SE                              | 2            | 60        | 600       | 0.34      |
| KP1040SA                              | 4            | 60        | 160       | 0.70      |
| KP1040SB                              | 4            | 130       | 260       | 0.70      |
| KP1040SC                              | 4            | 200       | 400       | 0.70      |
| KP1040SD                              | 4            | 300       | 600       | 0.70      |
| KP1040SE                              | 4            | 60        | 600       | 0.70      |
| <b>DC I/P, Transistor O/P w. Base</b> |              |           |           |           |
| KP2010SA                              | 1            | 60        | 160       | 0.16      |
| KP2010SB                              | 1            | 130       | 260       | 0.16      |
| KP2010SC                              | 1            | 200       | 400       | 0.16      |
| KP2010SD                              | 1            | 300       | 600       | 0.16      |
| KP2010SE                              | 1            | 60        | 600       | 0.16      |
| <b>AC I/P, Transistor O/P</b>         |              |           |           |           |
| KP3010SA                              | 1            | 60        | 600       | 0.20      |
| KP3010SB                              | 1            | 130       | 300       | 0.20      |
| KP3020SA                              | 2            | 60        | 600       | 0.40      |
| KP3020SB                              | 2            | 130       | 300       | 0.40      |
| KP3040SA                              | 4            | 60        | 600       | 0.80      |
| KP3040SB                              | 4            | 130       | 300       | 0.80      |

| Part Number                           | No. Channels | CTR Min % | CTR Max % | SQP £ ea. |
|---------------------------------------|--------------|-----------|-----------|-----------|
| <b>DC I/P, Darlington O/P</b>         |              |           |           |           |
| KP4010SA                              | 1            | 600       | 2,000     | 0.28      |
| KP4010SB                              | 1            | 1,500     | 4,000     | 0.28      |
| KP4010SC                              | 1            | 3,000     | 6,000     | 0.28      |
| KP4010SD                              | 1            | 5,000     | 9,000     | 0.28      |
| KP4010SE                              | 1            | 600       | 9,000     | 0.28      |
| KP4020SA                              | 2            | 600       | 2,000     | 0.56      |
| KP4020SB                              | 2            | 1,500     | 4,000     | 0.56      |
| KP4020SC                              | 2            | 3,000     | 6,000     | 0.56      |
| KP4020SD                              | 2            | 5,000     | 9,000     | 0.56      |
| KP4020SE                              | 2            | 600       | 9,000     | 0.56      |
| KP4040SA                              | 4            | 600       | 2,000     | 1.20      |
| KP4040SB                              | 4            | 1,500     | 4,000     | 1.20      |
| KP4040SC                              | 4            | 3,000     | 6,000     | 1.20      |
| KP4040SD                              | 4            | 5,000     | 9,000     | 1.20      |
| KP4040SE                              | 4            | 600       | 9,000     | 1.20      |
| <b>DC I/P, Darlington O/P w. Base</b> |              |           |           |           |
| KP5010SA                              | 1            | 600       | 2,000     | 0.30      |
| KP5010SB                              | 1            | 1,500     | 4,000     | 0.30      |
| KP5010SC                              | 1            | 3,000     | 6,000     | 0.30      |
| KP5010SD                              | 1            | 5,000     | 9,000     | 0.30      |
| KP5010SE                              | 1            | 600       | 9,000     | 0.30      |
| <b>AC I/P, Transistor O/P w. Base</b> |              |           |           |           |
| KP6010SA                              | 1            | 60        | 600       | 0.20      |
| KP6010SB                              | 1            | 60        | 300       | 0.20      |
| <b>DC I/P, TTL &amp; LS TTL O/P</b>   |              |           |           |           |
| KP7010SA                              | 1            | -         | -         | POA       |

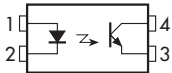
### DIMENSIONS



| A     | Pin Count |
|-------|-----------|
| 4.60  | 4 Pin     |
| 7.3   | 6 Pin     |
| 9.68  | 8 Pin     |
| 19.84 | 16 Pin    |

All dimensions in mm.

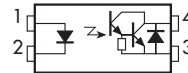
**KP1010**



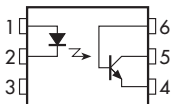
**KP3010**



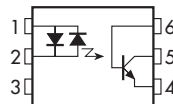
**KP4010**



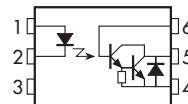
**KP2010**



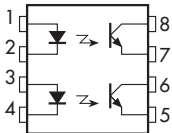
**KP6010**



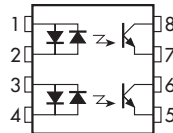
**KP5010**



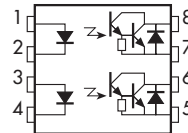
**KP1020**



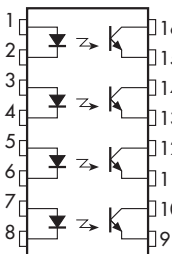
**KP3020**



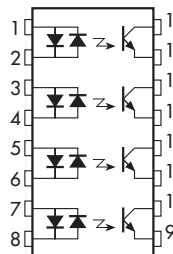
**KP4020**



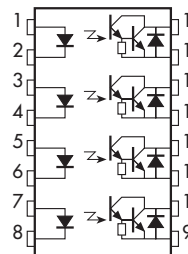
**KP1040**



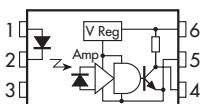
**KP3040**



**KP4040**



**KP7010**



### SQP – SMALL QUANTITY PRICES

A typical unit price for a quantity of 100 pieces. It will vary (up or down) depending on the time, order value etc. Call us for your update.