

### SINGLE DRIVER

KID65501P/F COMMON EMITTER.  
KID65502P/F COMMON EMITTER.  
KID65503P/F COMMON EMITTER.  
KID65504P/F COMMON EMITTER.  
KID65505P/F COMMON COLLECTOR.  
KID65506P/F COMMON COLLECTOR.  
KID65507P/F ISOLATED.

### FEATURES

- Output Current : 200mA Max.
- High Voltage Outputs : 35V
- Input Compatible with Various Types of Logic
  - KID65501P/F } Using external resistor : General Purpose
  - KID65505P/F }
  - KID65507P/F }
  - KID65502P/F  $R_{IN}=7V$  Zener Diode+10.5k $\Omega$  : 14~25V P-MOS
  - KID65503P/F }
  - KID65506P/F  $R_{IN}=2.7k\Omega$  : TTL, 5V C-MOS
  - KID65504P/F  $R_{IN}=10.5k\Omega$  : 6~15V P-MOS, C-MOS

### DESCRIPTION:

The KID65501P/F Series are comprised of seven or five NPN Transistor Arrays.  
For proper operation, the substrate (SUB) must be connected to the most negative voltage.

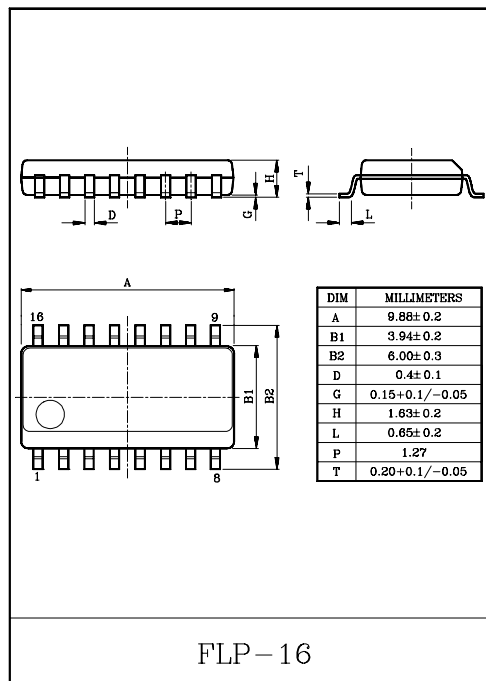
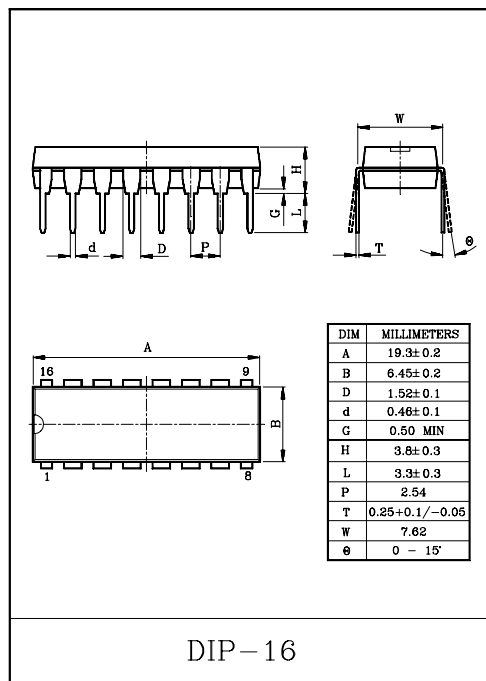
### MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

| CHARACTERISTIC            | SYMBOL                           | RATING     | UNIT |
|---------------------------|----------------------------------|------------|------|
| Collector-Emitter Voltage | $V_{CEO}$                        | 35         | V    |
| Collector-Base Voltage    | $V_{CBO}$                        | 50         | V    |
| Collector Current         | $I_C$                            | 200        | mA   |
| Input Voltage             | $V_{IN}^*$                       | -0.5 ~ +45 | V    |
|                           | $V_{IN}^{**}$                    | -0.5 ~ +30 |      |
| Input Current             | $I_{IN}^{***}$                   | 25         | mA   |
| Isolation Voltage         | $V_{SUB}$                        | 35         | V    |
| GND Terminal Current      | $I_{GND}$                        | 500        | mA   |
| Power Dissipation         | KID65501P~<br>KID65507P<br>$P_D$ | 1.0        | W    |
|                           |                                  | 0.54       |      |
| Operating Temperature     | $T_{opr}$                        | -30 ~ 75   | °C   |
| Storage Temperature       | $T_{stg}$                        | -55 ~ 150  | °C   |

\* KID65506P/F

\*\* KID65502P/F, KID65503P/F, KID65504P/F

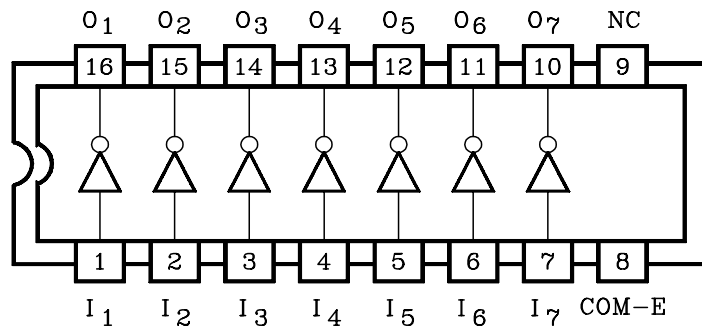
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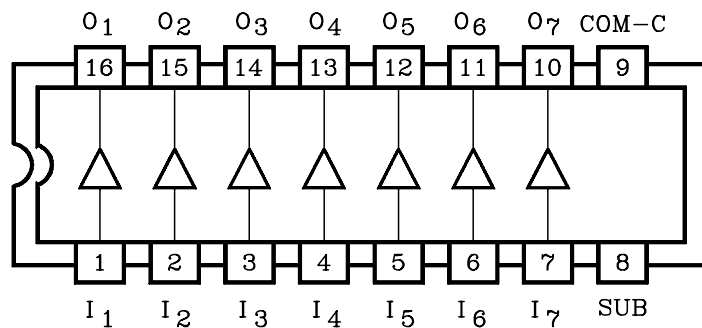
# KID65501P/F ~ KID65507P/F

## PIN CONNECTIONS (TOP VIEW)

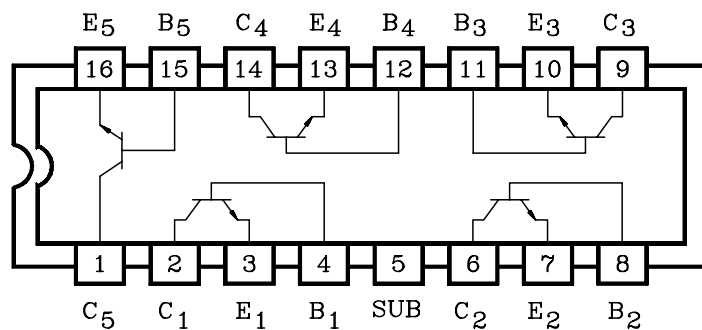
KID65501P/F ,KID65502P/F, KIP65503P/F,  
KID65504P/F



KID65505P/F, KID65506P/F



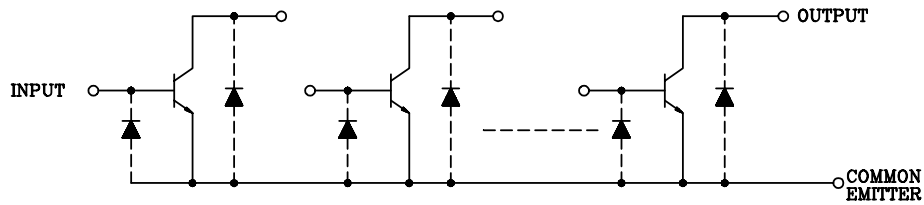
KID65507P/F



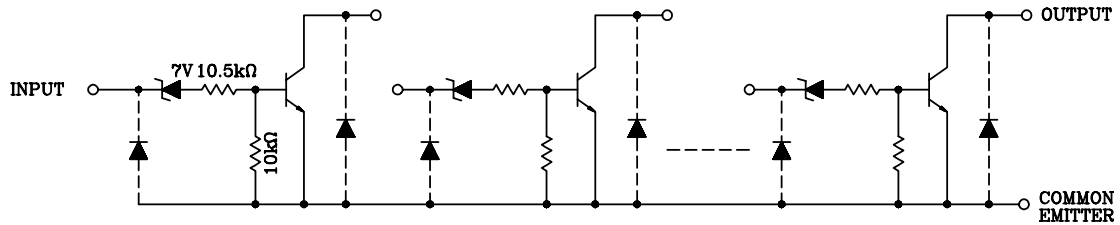
# KID65501P/F ~ KID65507P/F

## SCHEMATICS

KID65501P/F

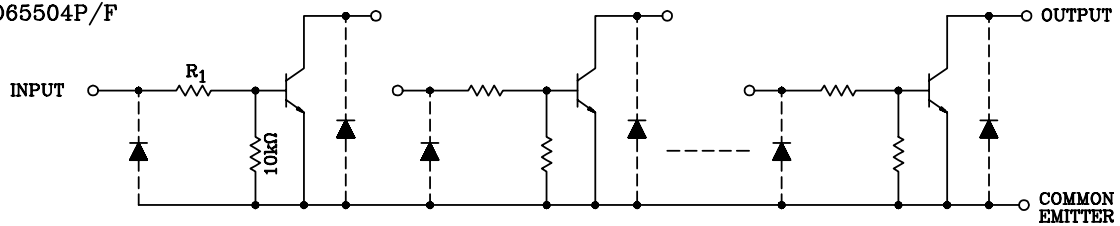


KID65502P/F



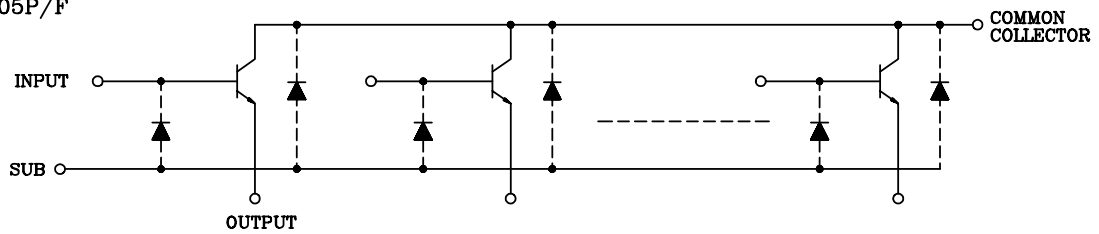
KID65503P/F

KID65504P/F

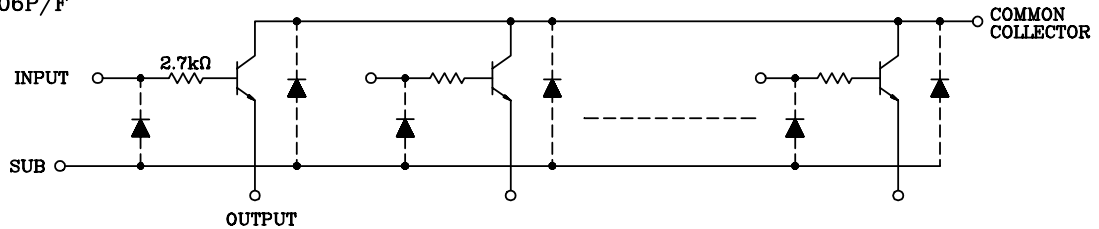


KID65503P/F :  $R_1 = 2.7k\Omega$ , KID65504P/F :  $R_1 = 10.5k\Omega$

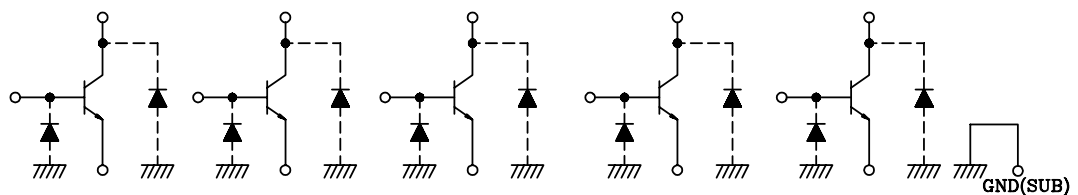
KID65505P/F



KID65506P/F



KID65507P/F



# KID65501P/F ~ KID65507P/F

## RECOMMENDED OPERATING CONDITIONS (Ta=-30~+75℃)

| CHARACTERISTIC            |                         | SYMBOL    | CONDITION | MIN. | TYP. | MAX.  | UNIT |
|---------------------------|-------------------------|-----------|-----------|------|------|-------|------|
| Collector-Emitter Voltage |                         | $V_{CE0}$ |           | 0    | -    | 35    | V    |
| Collector-Base Voltage    |                         | $V_{CB0}$ |           | 0    | -    | 50    | V    |
| Collector Current         |                         | $I_C$     |           | 0    | -    | 150   | mA   |
| Input Voltage             | KID65506P/F             | $V_{IN}$  |           | 0    | -    | 35    | V    |
|                           | KID65502P/F             |           |           | 0    | -    | 25    |      |
|                           | KID65503P/F             |           |           | 0    | -    | 25    |      |
|                           | KID65504P/F             |           |           | 0    | -    | 25    |      |
| Input Current             |                         | $I_{IN}$  |           | 0    | -    | 10    | mA   |
| Power Dissipation         | KID65501P~<br>KID65507P | $P_D$     |           | -    | -    | 0.36  | W    |
|                           | KID65501F~<br>KID65507F |           | On PCB *  | -    | -    | 0.325 |      |

\* : 30×30×1.6mm, Cu 50%

## ELECTRICAL CHARACTERISTICS (Ta=25℃)

| CHARACTERISTIC                       | SYMBOL        | TEST CIRCUIT | TEST CONDITION                         |             | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|---------------|--------------|----------------------------------------|-------------|------|------|------|---------|
| Output Leak Current                  | $I_{CEX}$     | 1            | $V_{CE}=25V, V_{IN}=0$                 |             | -    | -    | 10   | $\mu A$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | 2            | $I_{IN}=1mA, I_C=10mA$                 |             | -    | -    | 0.2  | V       |
|                                      |               |              | $I_{IN}=3mA, I_C=150mA^*$              |             | -    | -    | 0.8  |         |
| DC Forward Current Transfer Ratio    | $h_{FE}$      | 2            | $V_{CE}=10V, I_C=10mA$                 | **          | 70   | -    | -    |         |
|                                      |               |              |                                        | ***         | 50   | -    | -    |         |
| Input Voltage (Output ON)            | $V_{IN(ON)}$  | 3            | $I_{IN}=1mA, I_C=10mA$                 | KID65502P/F | 13   | 17   | 23   | V       |
|                                      |               |              |                                        | KID65503P/F | 2.4  | 3.4  | 4.2  |         |
|                                      |               |              |                                        | KID65504P/F | 7.5  | 11.5 | 15   |         |
| Turn-ON Delay                        | $t_{ON}$      | 4            | $V_{OUT}=35V, R_L=175\Omega, C_L=15pF$ |             | -    | 50   | -    | nS      |
| Turn-OFF Delay                       | $t_{OFF}$     |              |                                        |             | -    | 200  | -    |         |

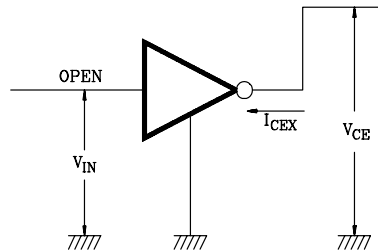
\* EXCEPT KID65502P/F

\*\* KID65501P/F, KID65505P/F, KID65506P/F, KID65507P/F

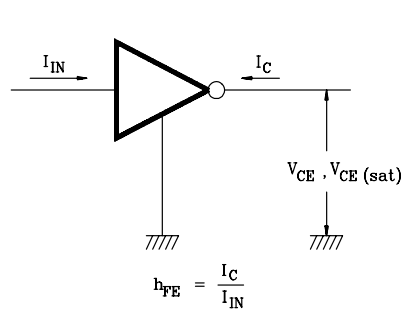
\*\*\* KID65502P/F, KID65503P/F, KID65504P/F

# KID65501P/F ~ KID65507P/F

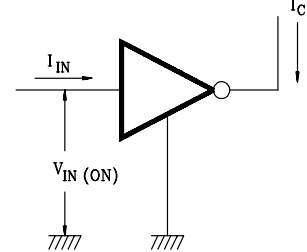
1.  $I_{CEX}$



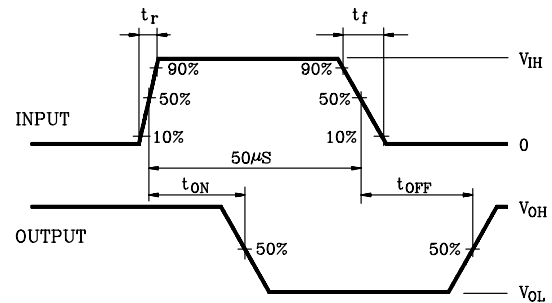
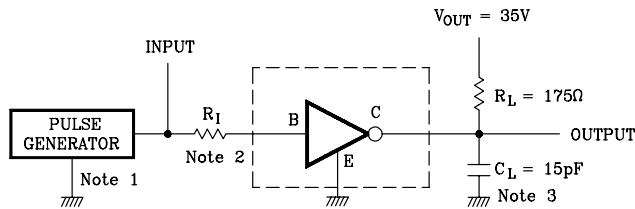
2.  $h_{FE}$ ,  $V_{CE(sat)}$



3.  $V_{IN(ON)}$



4.  $t_{ON}$ ,  $t_{OFF}$



Notes : 1. Pulse Width 50μs, Duty Cycle 10%  
Output Impedance 50Ω,  $t_r \leq 5ns$ ,  $t_f \leq 10ns$

2. See Below

Input Conditions

| Type Number | $R_I$ | $V_{III}$ |
|-------------|-------|-----------|
| KID65501P/F | 2.7kΩ | 3V        |
| KID65502P/F | 0     | 15V       |
| KID65503P/F | 0     | 3V        |
| KID65504P/F | 0     | 10V       |
| KID65505P/F | 2.7kΩ | 3V        |
| KID65506P/F | 0     | 3V        |
| KID65507P/F | 2.7kΩ | 3V        |

3.  $C_L$  Includes Probe and Jig capacitance.