

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
 - KID65505P/F } Using external resistor : General Purpose
 - KID65507P/F
 - KID65502P/F } $R_{IN}=7V$ Zener Diode+10.5k Ω : 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.

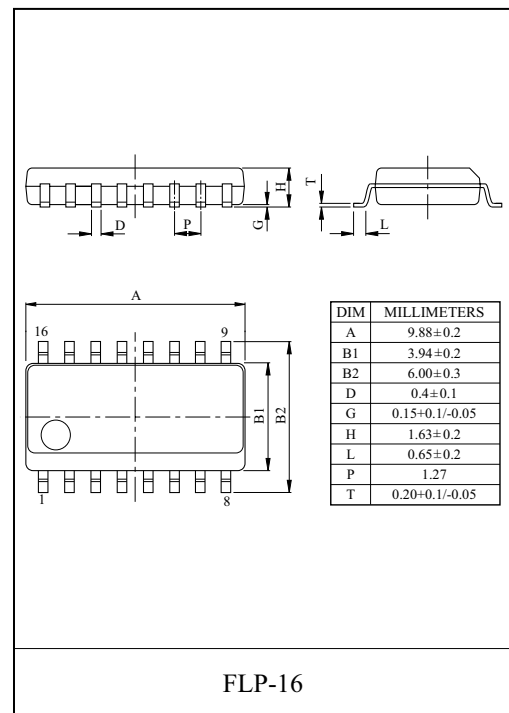
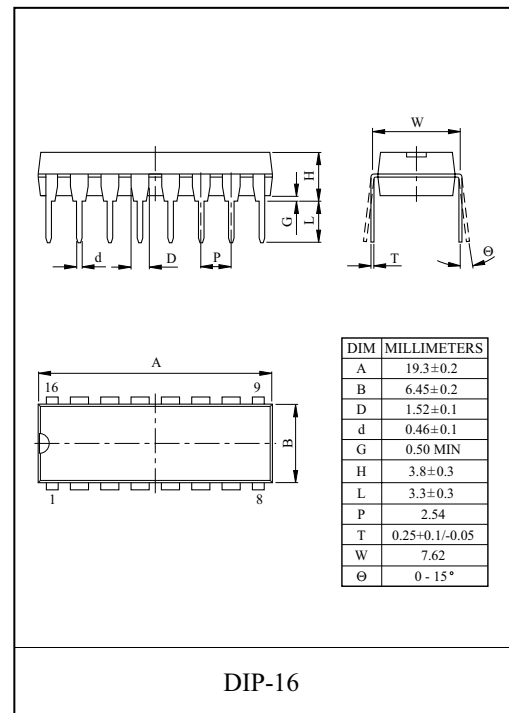
MAXIMUM RATINGS (Ta=25 °C, unless otherwise noted)

| 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 | 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

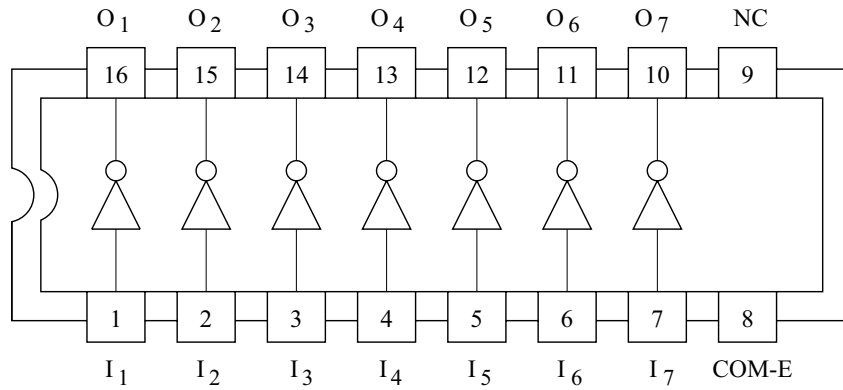
*** KID65501P/F, KID65505P/F, KID65507P/F



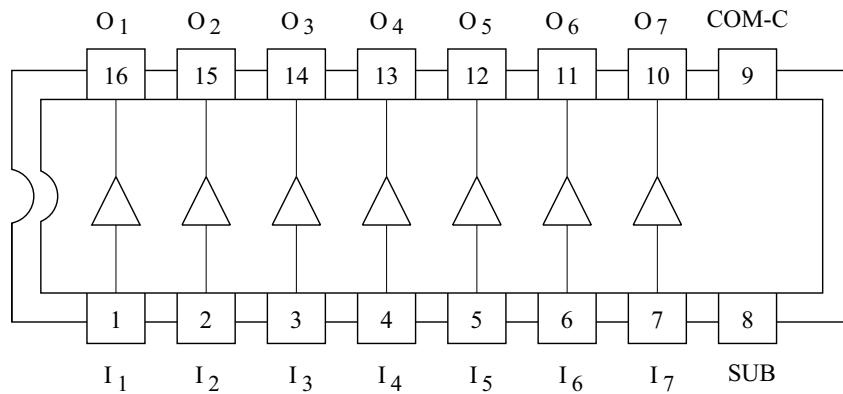
KID65501P/F~KID65507P/F

PIN CONNECTIONS (TOP VIEW)

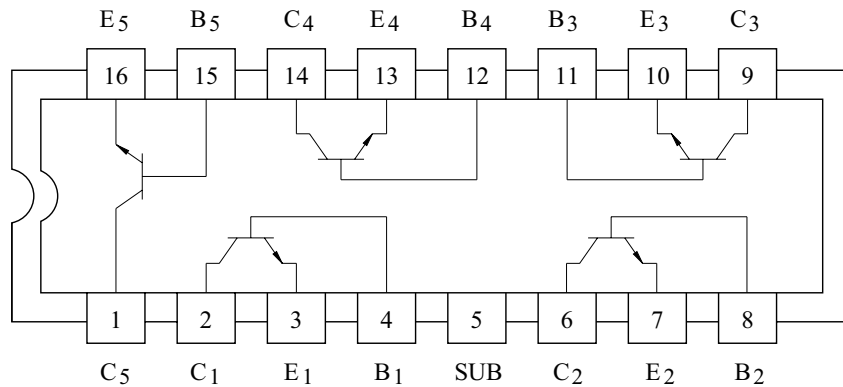
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KID65504P/F



KID65505P/F, KID65506P/F



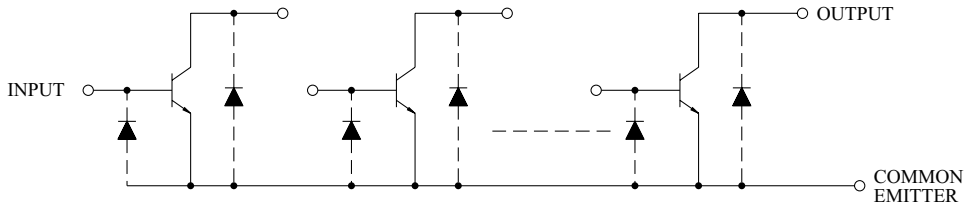
KID65507P/F



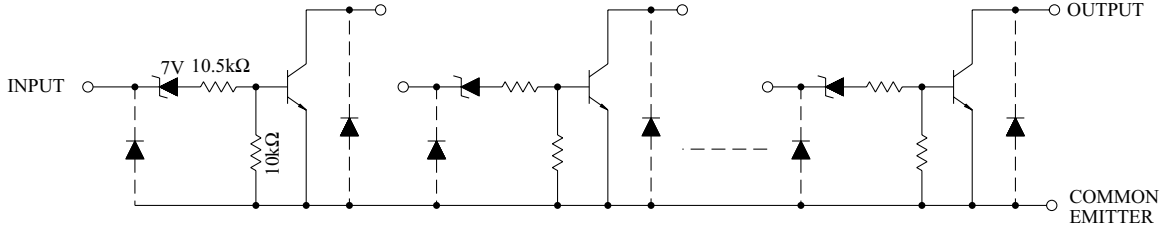
KID65501P/F~KID65507P/F

SCHEMATICS

KID65501P/F

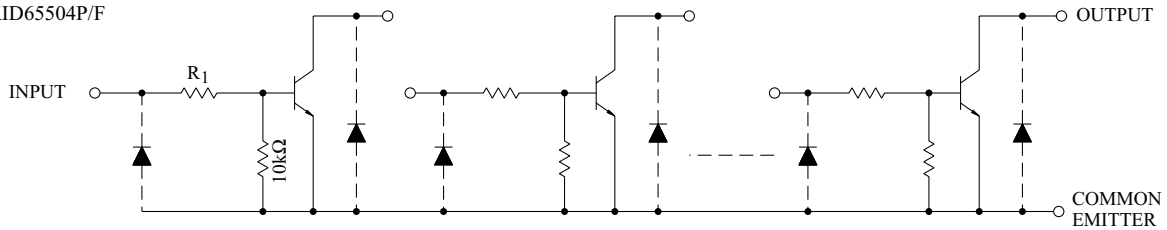


KID65502P/F



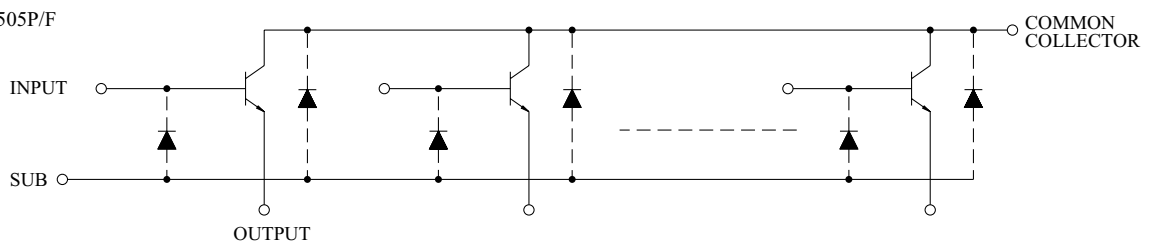
KID65503P/F

KID65504P/F

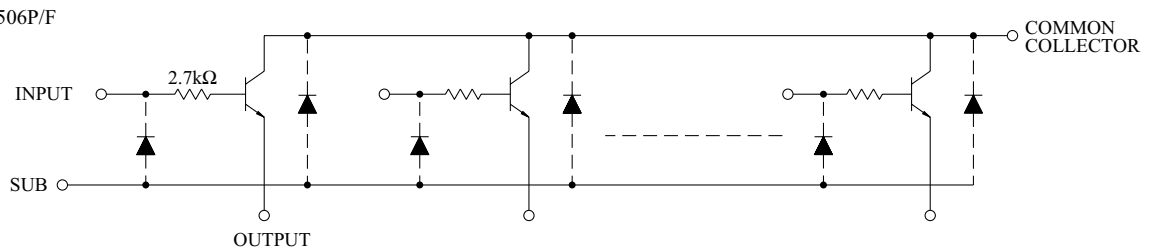


KID65503P/F : R₁=2.7kΩ , KID65504P/F : R₁=10.5kΩ

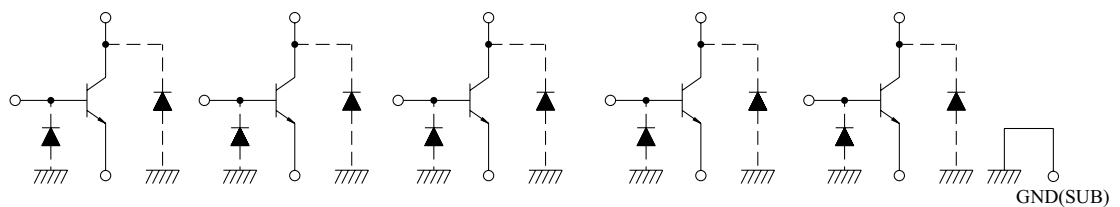
KID65505P/F



KID65506P/F



KID65507P/F



KID65501P/F~KID65507P/F

RECOMMENDED OPERATING CONDITIONS (Ta=-30 ~ 75 °C)

| CHARACTERISTIC | | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|---|---|-----------|------|------|-------|------|
| Collector-Emitter Voltage | | V_{CEO} | | 0 | - | 35 | V |
| Collector-Base Voltage | | V_{CBO} | | 0 | - | 50 | V |
| Collector Current | | I_C | | 0 | - | 150 | mA |
| Input Voltage | KID65506P/F | V_{IN} | | 0 | - | 35 | V |
| | KID65502P/F KID65503P/F KID65504P/F | | | 0 | - | 25 | |
| Input Current | | KID65501P/F KID65505P/F KID65507P/F | I_{IN} | 0 | - | 10 | mA |
| Power Dissipation | KID65501P ~ KID65507P | P_D | | - | - | 0.36 | W |
| | KID65501F ~ KID65507F | | On PCB * | - | - | 0.325 | |

* : on glass epoxy PCB (30 × 30 × 1.6mm Cu50%)

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|--------------------------------------|---------------|--------------|---|-------------|------|------|---------|---|
| Output Leak Current | I_{CEX} | 1 | $V_{CE}=25V, V_{IN}=0$ | - | - | 10 | μA | |
| 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 | - | | |

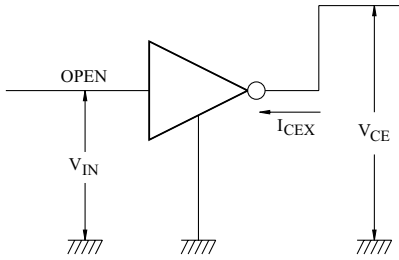
* EXCEPT KID65502P/F

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

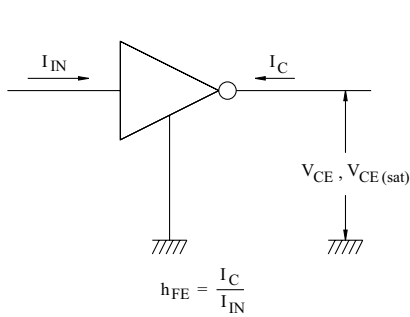
*** KID65502P/F, KID65503P/F, KID65504P/F

KID65501P/F~KID65507P/F

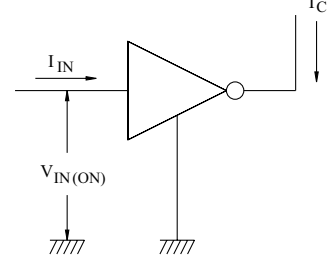
1. I_{CEX}



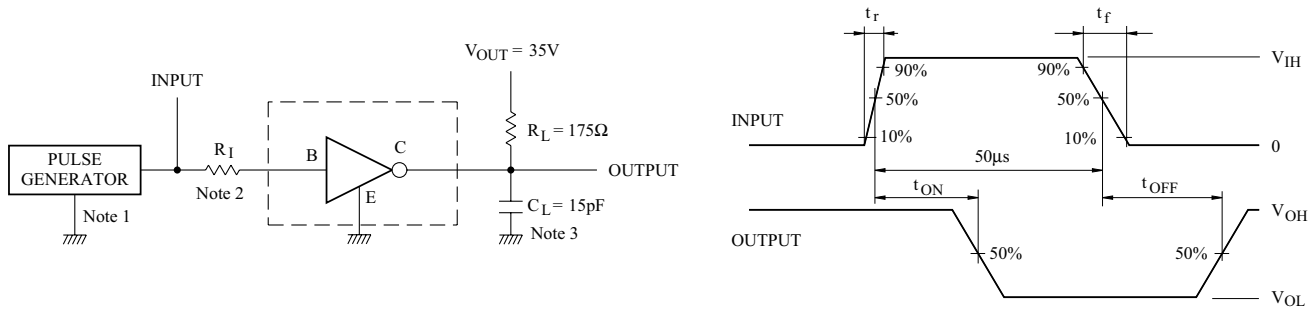
2. h_{FE} , $V_{CE(sat)}$



3. $V_{IN(ON)}$



4. t_{ON} , t_{OFF}



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

2. See below

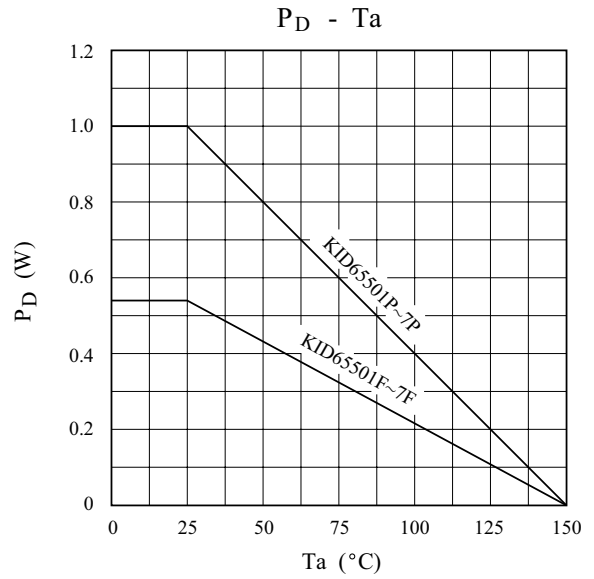
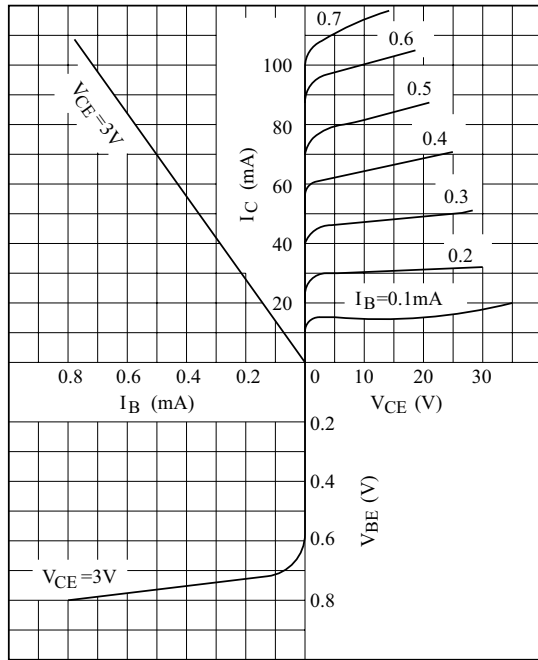
Input Conditions

| Type Number | R_1 | V_{IH} |
|-------------|--------------|----------|
| KID65501P/F | $2.7k\Omega$ | 3V |
| KID65502P/F | 0 | 15V |
| KID65503P/F | 0 | 3V |
| KID65504P/F | 0 | 10V |
| KID65505P/F | $2.7k\Omega$ | 3V |
| KID65506P/F | 0 | 3V |
| KID65507P/F | $2.7k\Omega$ | 3V |

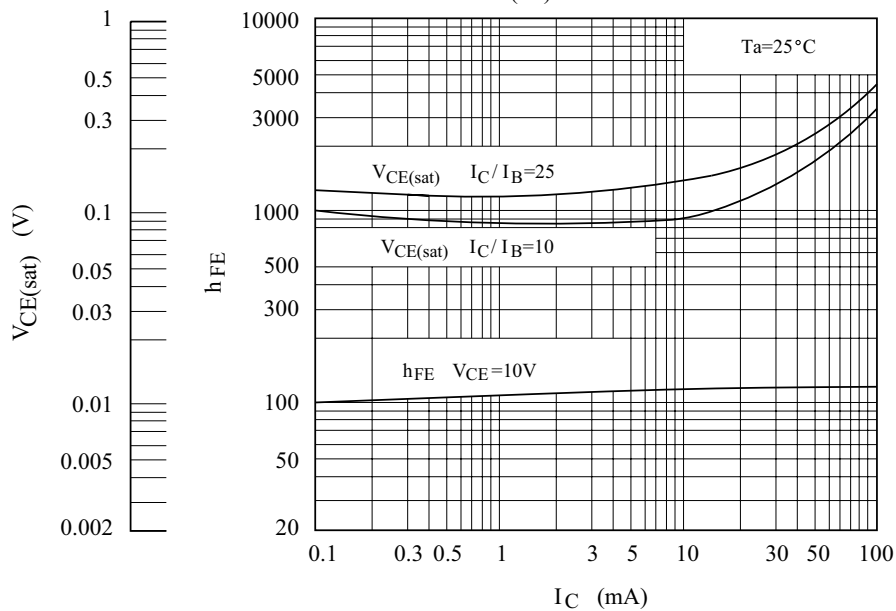
3. C_L includes probe and Jig capacitance.

KID65501P/F~KID65507P/F

KID65501P/F, KIA65505P/F, KIA65507P/F STATIC CHARACTERISTICS



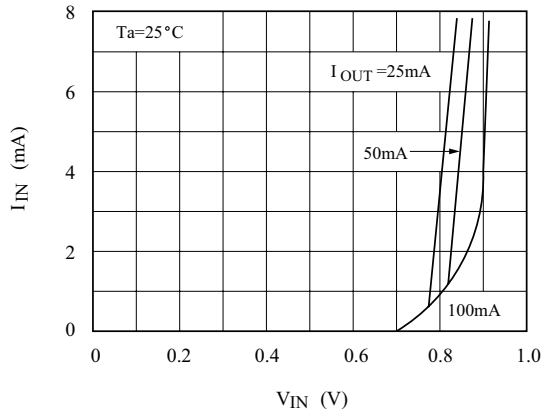
KID65501P/F, KIA65505P/F, KIA65507P/F $V_{CE(sat)}, h_{FE} - I_C$



KID65501P/F~KID65507P/F

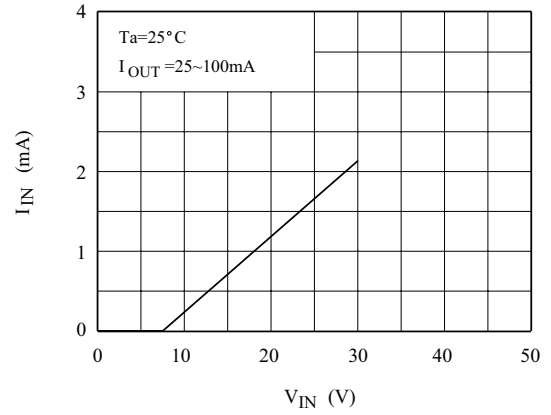
KID65501P/F

$V_{IN} - I_{IN}$



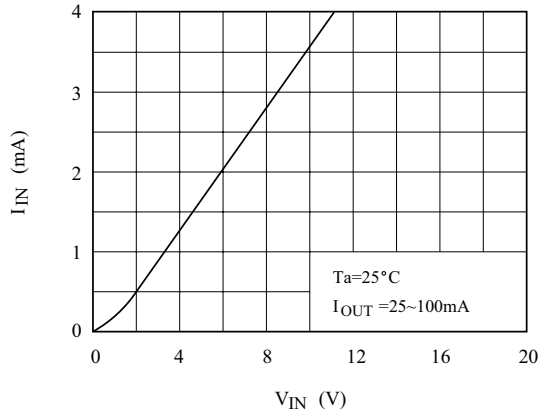
KID65502P/F

$V_{IN} - I_{IN}$



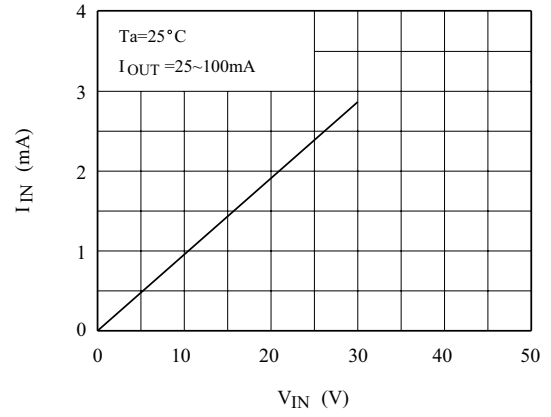
KID65503P/F

$V_{IN} - I_{IN}$



KID65504P/F

$V_{IN} - I_{IN}$



$V_{CE(sat)} - I_C$

