

#### 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 : 14 25V P-MOS
  - KID65503P/F
  - KID65506P/F }  $R_{IN}=2.7k$  : TTL, 5V C-MOS
  - KID65504P/F  $R_{IN}=10.5k$  : 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.

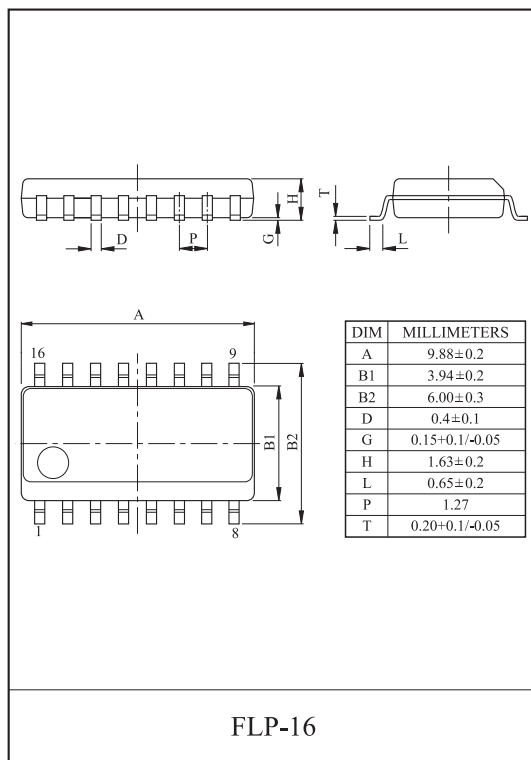
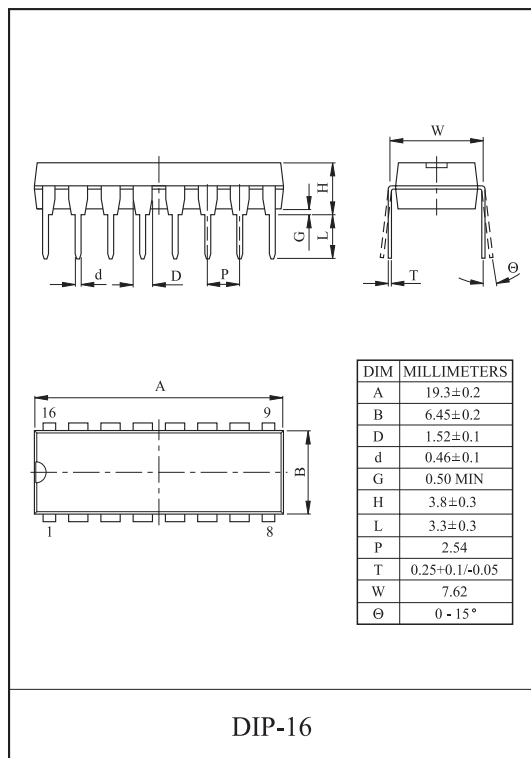
#### MAXIMUM RATINGS (Ta=25 , unless otherwise noted)

| 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 | 1.0      | W    |
|                           | KID65501F<br>KID65507F | 0.54     |      |
| Operating Temperature     | $T_{opr}$              | -40 85   |      |
| Storage Temperature       | $T_{stg}$              | -55 150  |      |

\* KID65506P/F

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

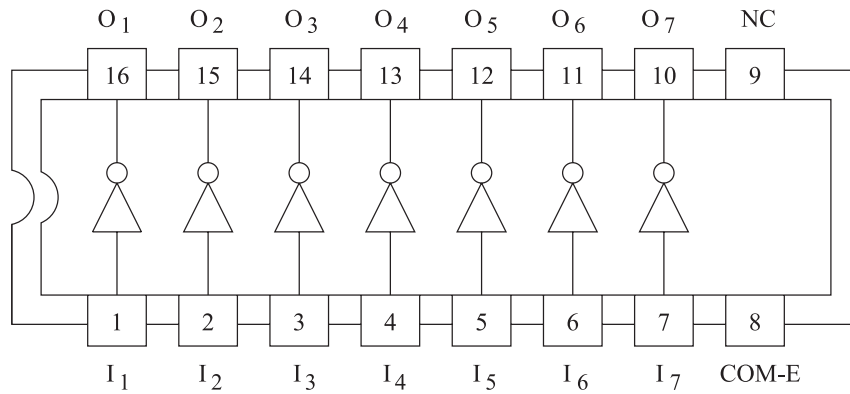
\*\*\* KID65501P/F, KID65505P/F, KID65507P/F



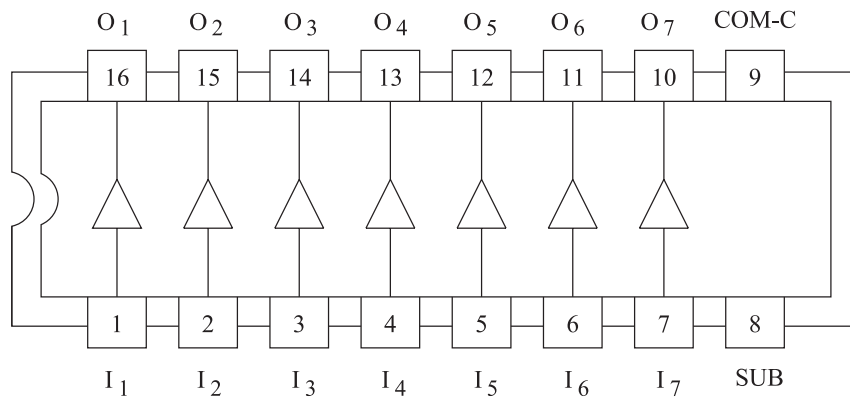
# KID65501P/F~KID65507P/F

PIN CONNECTIONS (TOP VIEW)

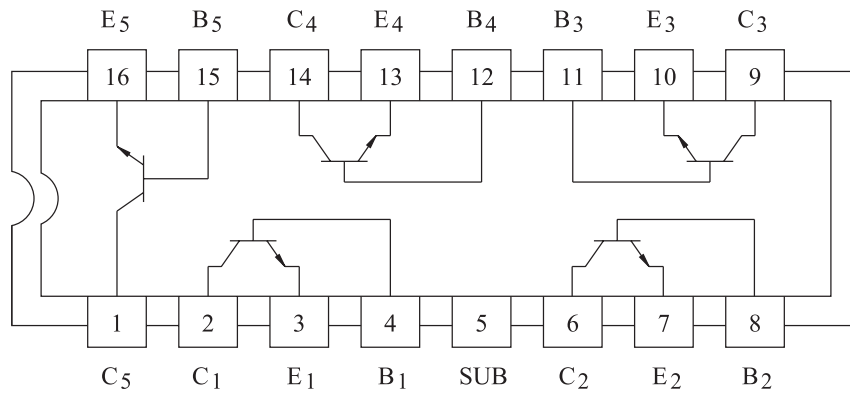
**KID65501P/F, KID65502P/F, KID65503P/F,  
KID65504P/F**



**KID65505P/F, KID65506P/F**



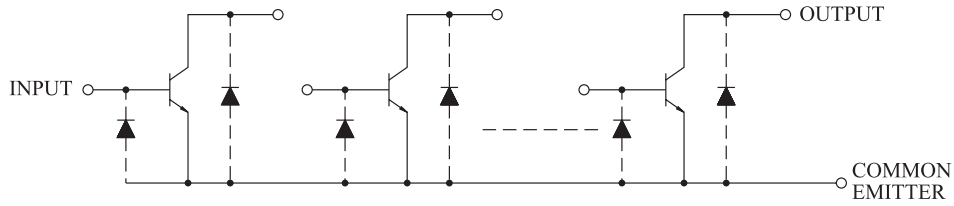
**KID65507P/F**



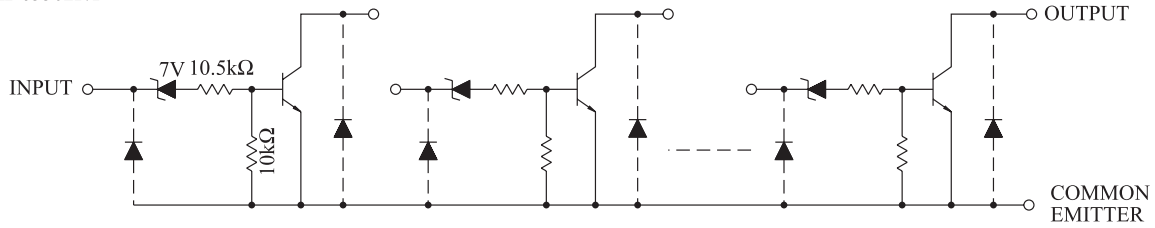
# KID65501P/F~KID65507P/F

## SCHEMATICS

KID65501P/F

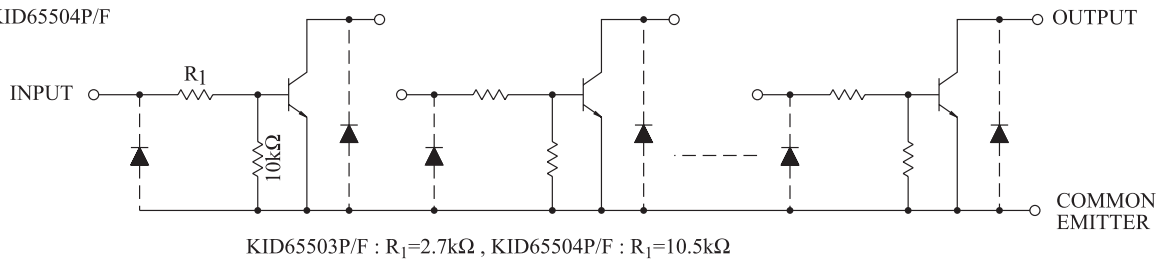


KID65502P/F

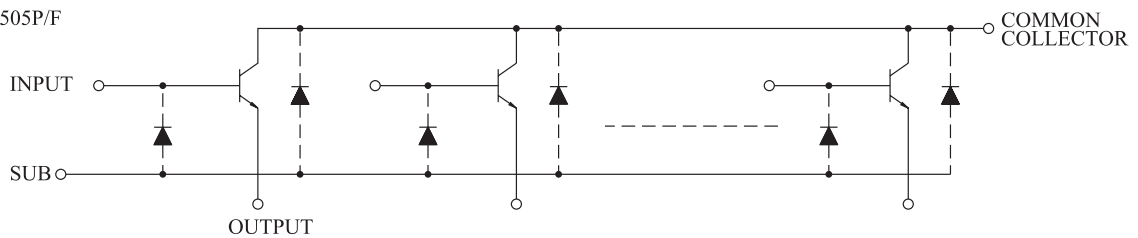


KID65503P/F

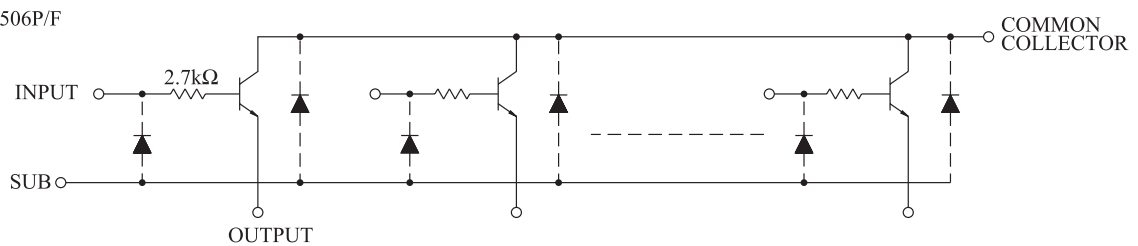
KID65504P/F



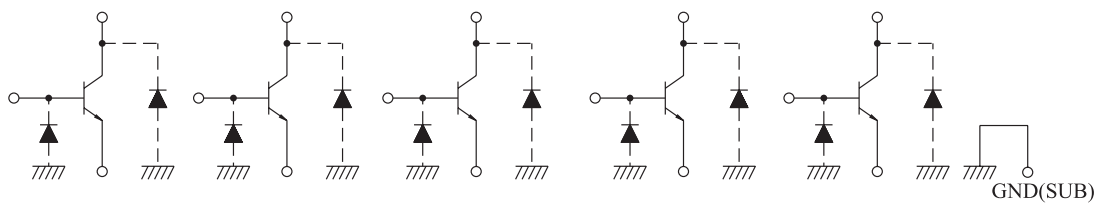
KID65505P/F



KID65506P/F



KID65507P/F



# KID65501P/F~KID65507P/F

RECOMMENDED OPERATING CONDITIONS (Ta=-40 ~ 85 )

| 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<br>KID65503P/F<br>KID65504P/F |   |           | 0    | -    | 25    |      |
| Input Current             |   | KID65501P/F<br>KID65505P/F<br>KID65507P/F | $I_{IN}$  | 0    | -    | 10    | mA   |
| Power Dissipation         | KID65501P<br>KID65507P                    | $P_D$                                     |           | -    | -    | 0.36  | W    |
|                           | KID65501F<br>KID65507F                    |   | On PCB *  | -    | -    | 0.325 |      |

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

ELECTRICAL CHARACTERISTICS (Ta=25 )

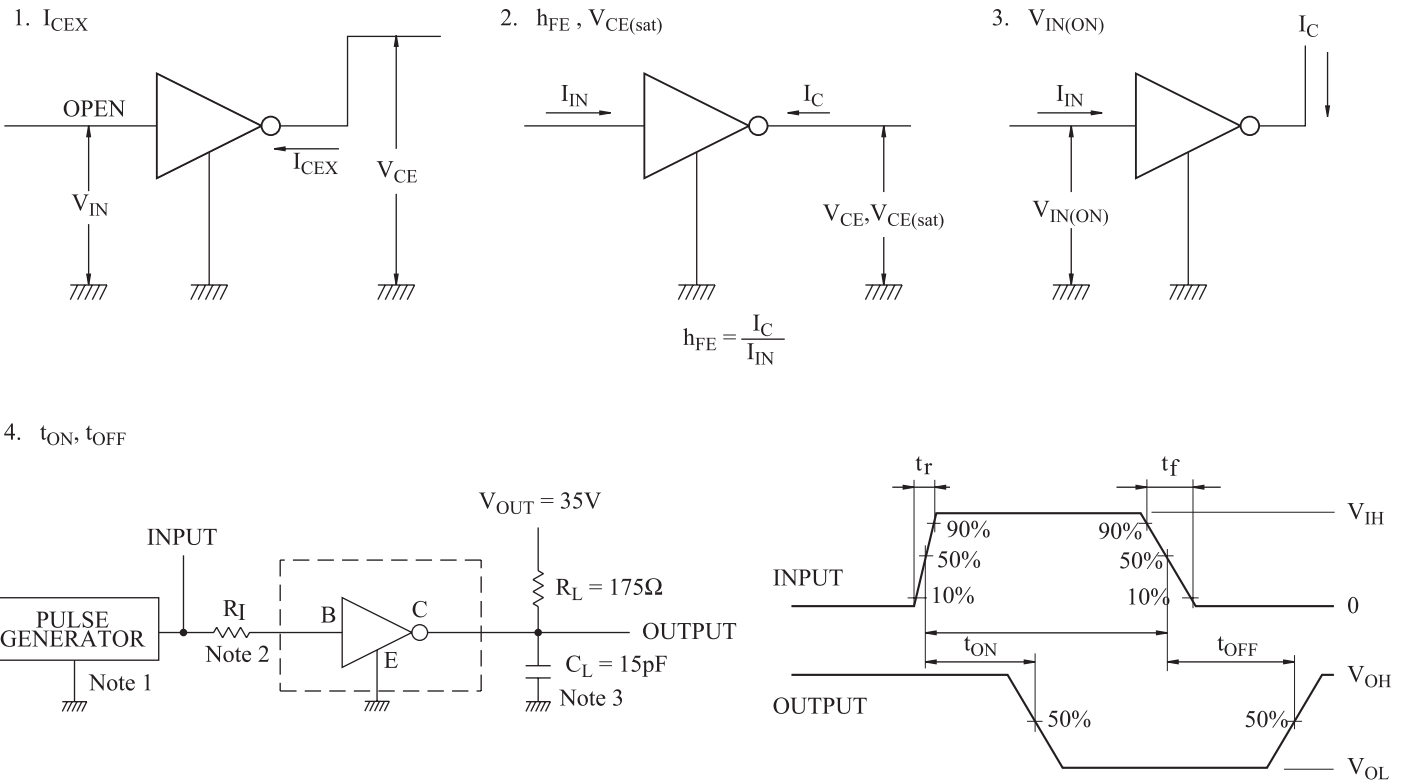
| CHARACTERISTIC                       | SYMBOL        | TEST CIRCUIT | TEST CONDITION                       | MIN.        | TYP. | MAX. | UNIT    |   |
|--------------------------------------|---------------|--------------|--------------------------------------|-------------|------|------|---------|---|
| 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            | $V_{CE}=10V,$<br>$I_C=10mA$          | **          | 70   | -    | -       |   |
|                                      |               |              |                                      | ***         | 50   | -    | -       |   |
| Input Voltage (Output ON)            | $V_{IN(ON)}$  | 3            | $I_{IN}=1mA,$<br>$I_C=10mA$          | 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            | $V_{OUT}=35V, R_L=175$<br>$C_L=15pF$ | -           | 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



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

2. See below

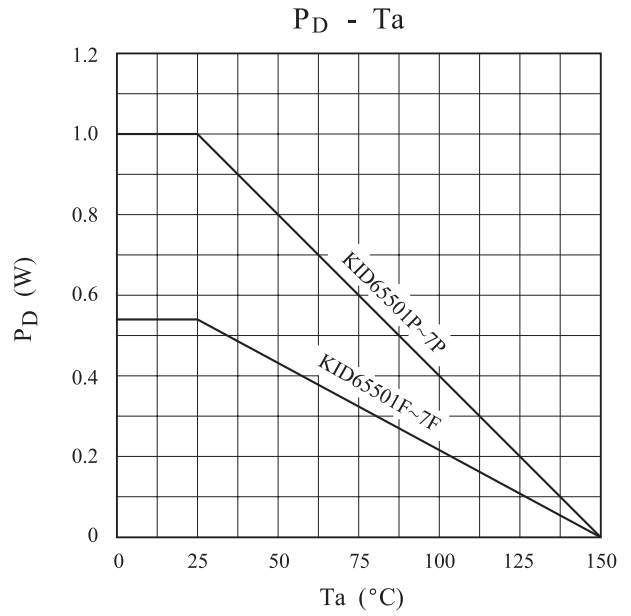
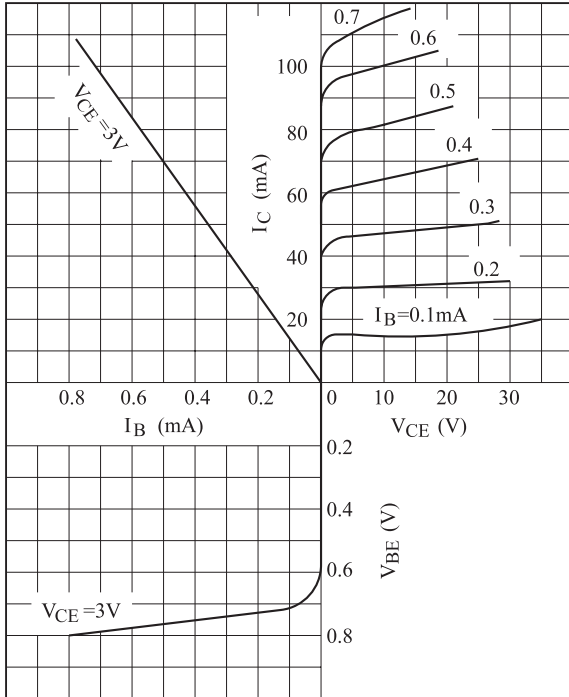
## Input Conditions

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

3.  $C_L$  includes probe and Jig capacitance.

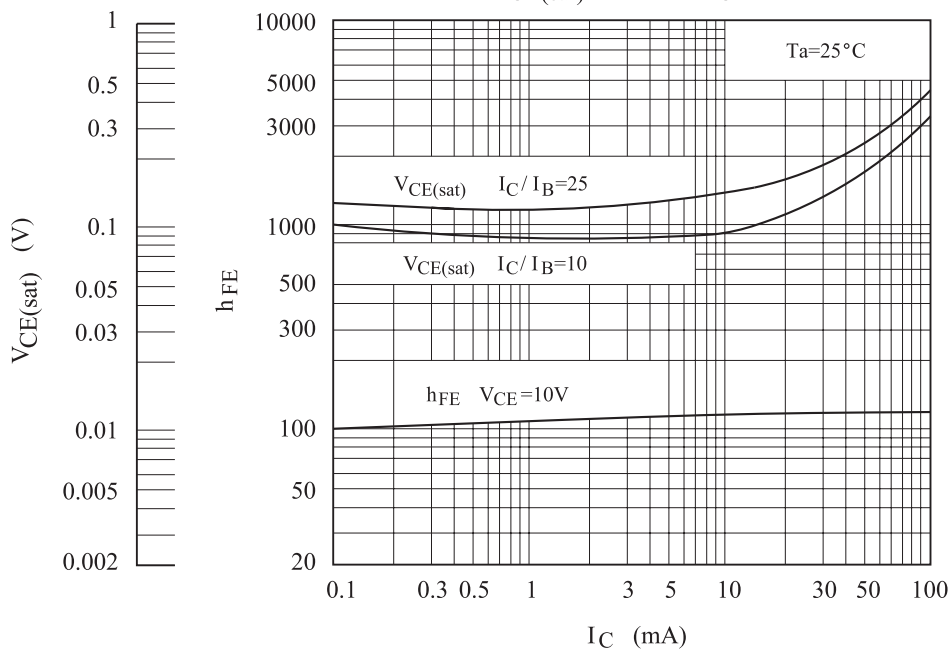
# KID65501P/F~KID65507P/F

## KID65501P/F, KID65505P/F, KID65507P/F STATIC CHARACTERISTICS



## KID65501P/F, KID65505P/F, KID65507P/F

### $V_{CE(sat)}$ , $h_{FE}$ - $I_C$



# KID65501P/F~KID65507P/F

