

#### 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 $\Omega$  : 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.

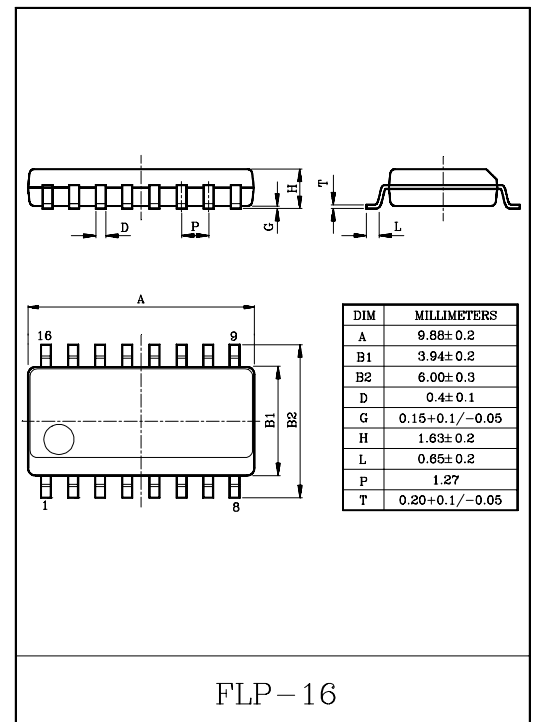
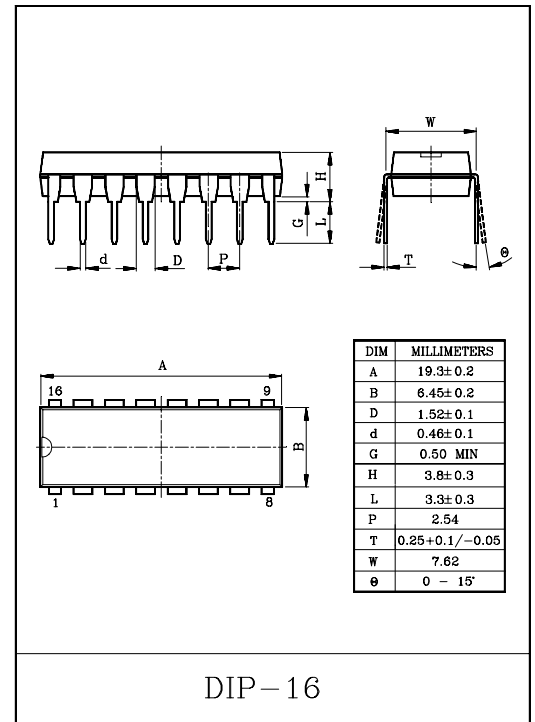
#### MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

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 ~ KID65507P	1.0	W
	KID65501F ~ KID65507F	0.54	
Operating Temperature	$T_{opr}$	-30 ~ 75	°C
Storage Temperature	$T_{stg}$	-55 ~ 150	°C

\* KID65506P/F

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

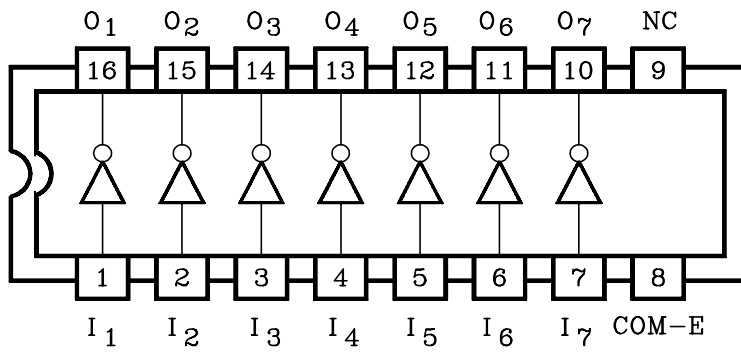
\*\*\* KID65501P/F, KID65505P/F, KID65507P/F



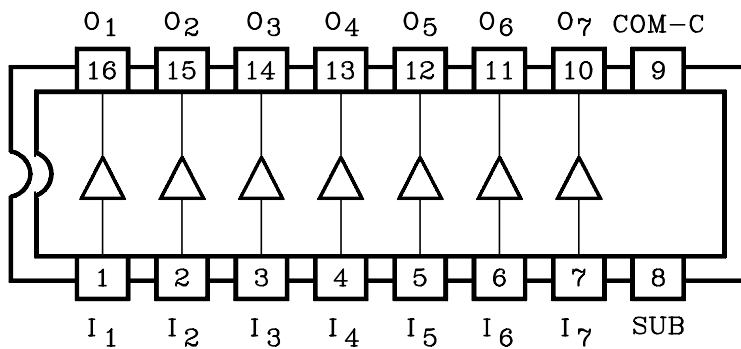
# KID65501P/F ~ KID65507P/F

PIN CONNECTIONS (TOP VIEW)

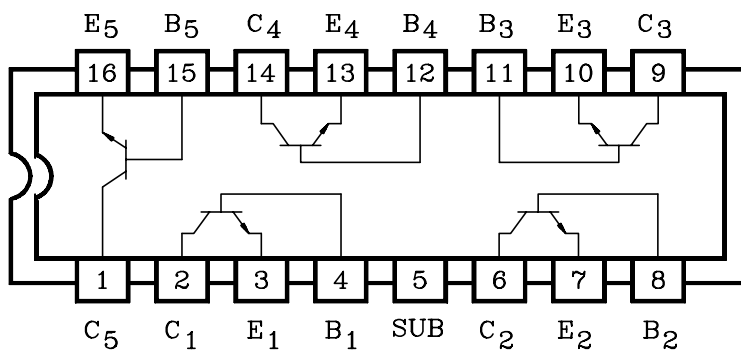
KID65501P/F ,KID65502P/F, KIP65503P/F,  
KID65504P/F



KID65505P/F, KID65506P/F



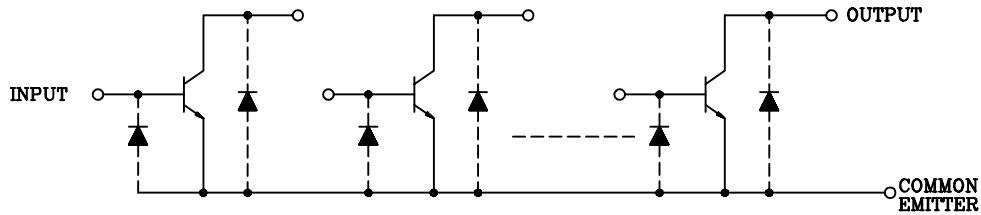
KID65507P/F



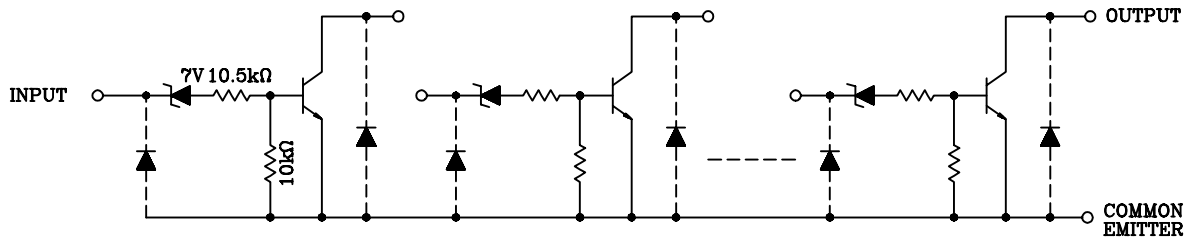
# KID65501P/F ~ KID65507P/F

## SCHEMATICS

KID65501P/F

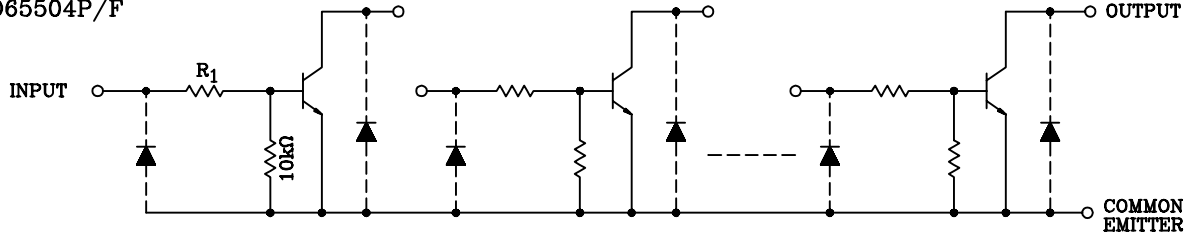


KID65502P/F



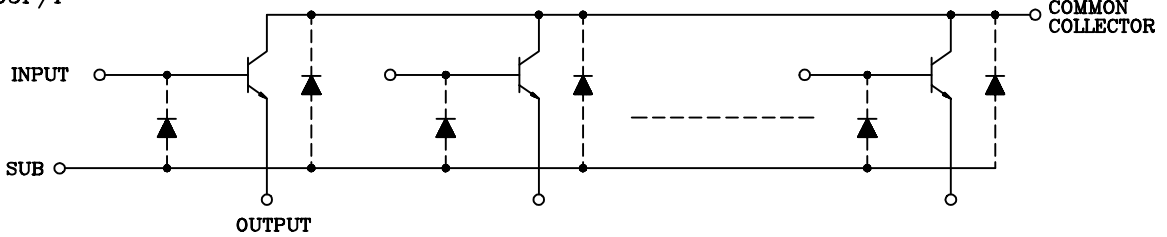
KID65503P/F

KID65504P/F

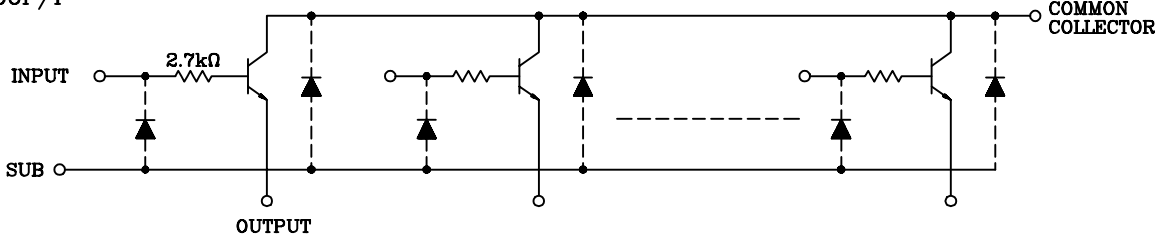


KID65503P/F :  $R_1 = 2.7k\Omega$ , KID65504P/F :  $R_1 = 10.5k\Omega$

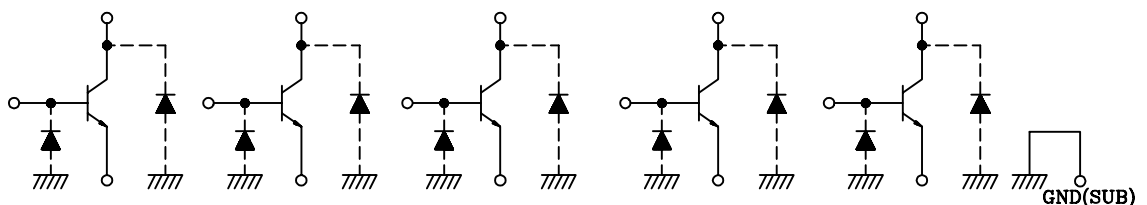
KID65505P/F



KID65506P/F



KID65507P/F



# KID65501P/F ~ KID65507P/F

## RECOMMENDED OPERATING CONDITIONS (Ta=-30~+75°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 *	-	-	

\* : 30×30×1.6mm, Cu 50%

## 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	$\mu A$	
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	-		

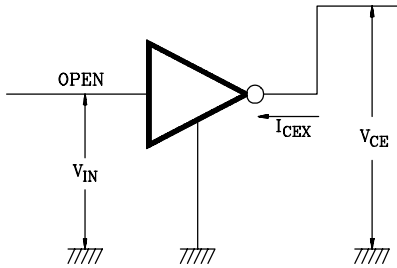
\* EXCEPT KID65502P/F

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

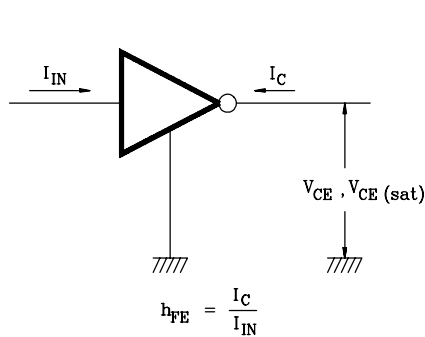
\*\*\* KID65502P/F, KID65503P/F, KID65504P/F

# KID65501P/F ~ KID65507P/F

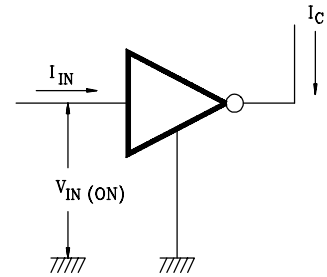
1.  $I_{CEX}$



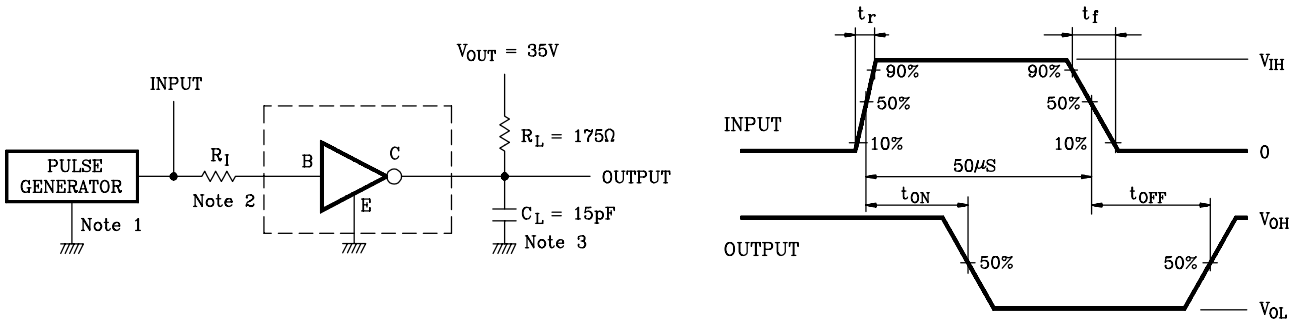
2.  $h_{FE}, V_{CE(sat)}$



3.  $V_{IN(ON)}$



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



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

2. See Below

Input Conditions

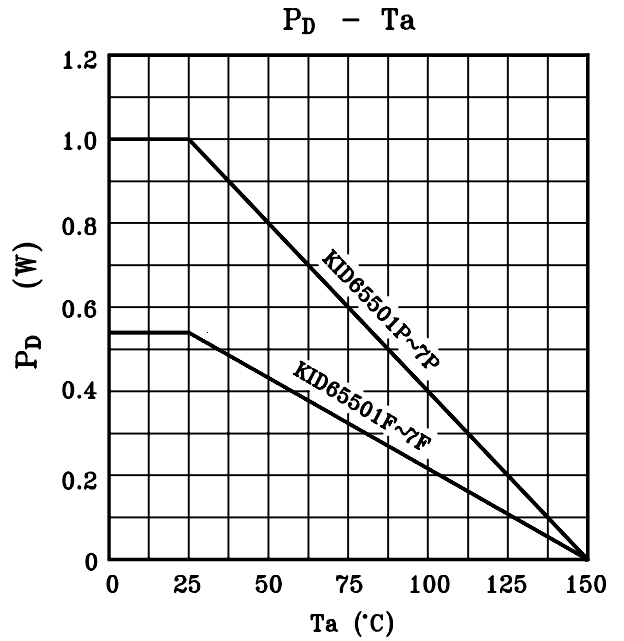
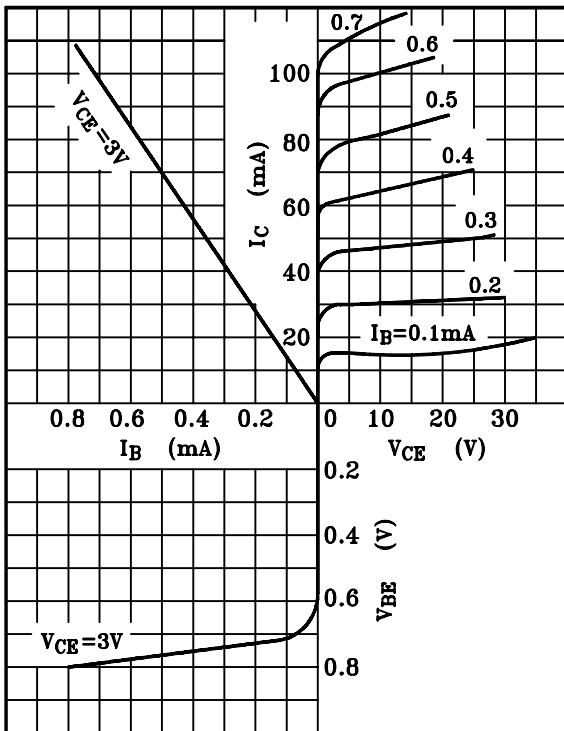
Type Number	$R_1$	$V_{IH}$
KID65501P/F	$2.7k\Omega$	3V
KID65502P/F	0	15V
KID65503P/F	0	3V
KID65504P/F	0	10V
KID65505P/F	$2.7k\Omega$	3V
KID65506P/F	0	3V
KID65507P/F	$2.7k\Omega$	3V

3.  $C_L$  Includes Probe and Jig capacitance.

# KID65501P/F ~ KID65507P/F

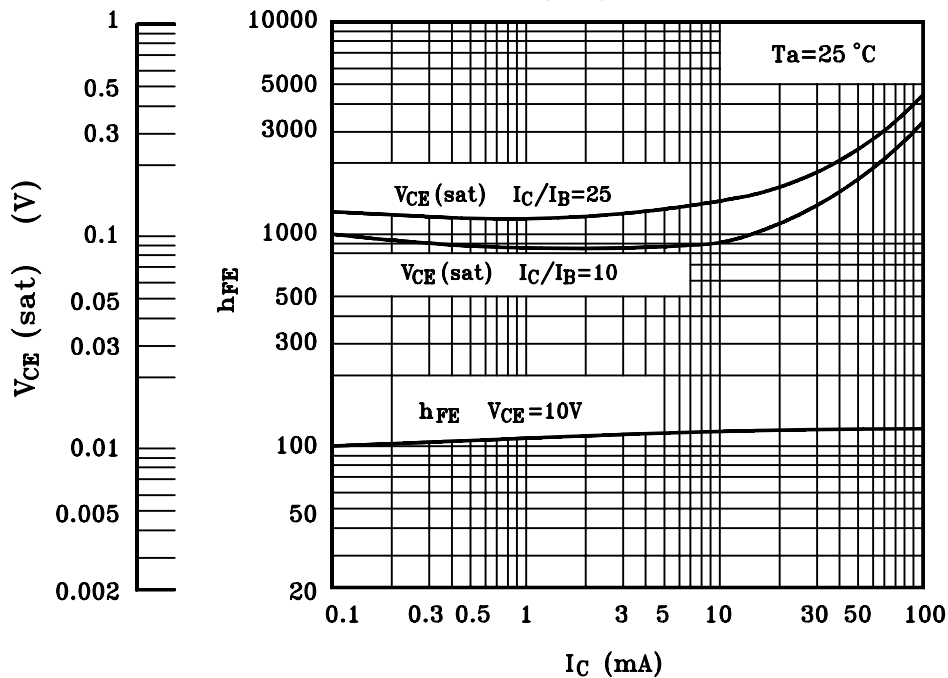
KID65501P/F, KIA65505P/F, KIA65507P/F

## STATIC CHARACTERISTICS



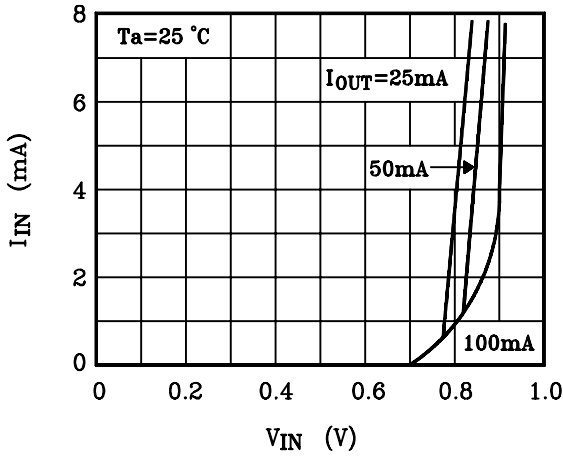
KID65501P/F, KIA65505P/F, KIA65507P/F

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

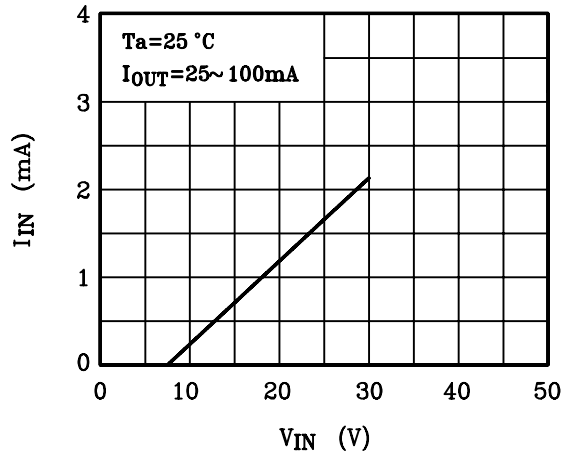


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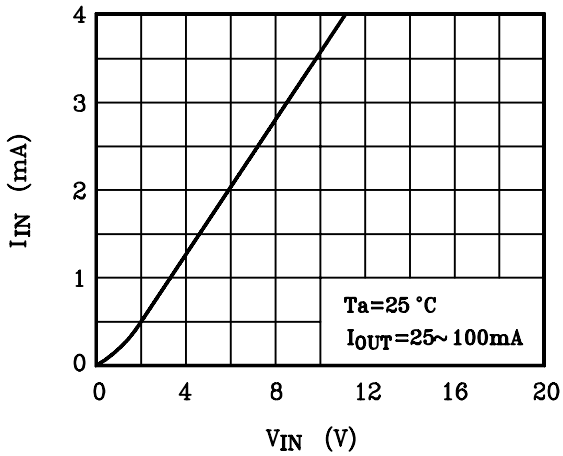
KID65501P/F  $V_{IN} - I_{IN}$



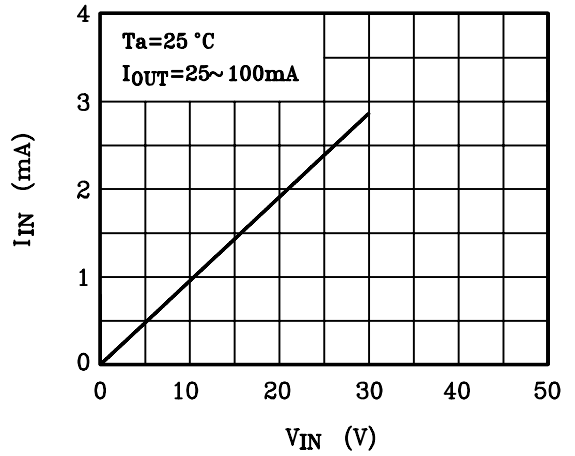
KID65502P/F  $V_{IN} - I_{IN}$



KID65503P/F  $V_{IN} - I_{IN}$



KID65504P/F  $V_{IN} - I_{IN}$



$V_{CE}(\text{sat}) - I_C$

