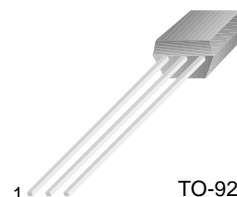


# FJNS4205R

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R_1=4.7K\Omega$ ,  $R_2=10K\Omega$ )
- Complement to FJNS3205R



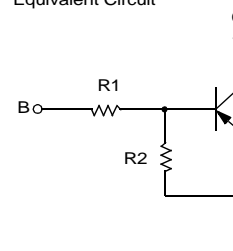
TO-92S  
1. Emitter 2. Collector 3. Base

## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-50	V
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-10	V
$I_C$	Collector Current	-100	mA
$P_C$	Collector Power Dissipation	300	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

Equivalent Circuit



### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}$ , $I_E = 0$	-50			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -100\mu\text{A}$ , $I_B = 0$	-50			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -40\text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = -5\text{V}$ , $I_C = -5\text{mA}$	30			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}$ , $I_B = -0.5\text{mA}$			-0.3	V
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}$ , $I_E = 0$ $f = 1.0\text{MHz}$		5.5		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}$ , $I_C = -5\text{mA}$		200		MHz
$V_{I(off)}$	Input Off Voltage	$V_{CE} = -5\text{V}$ , $I_C = -100\mu\text{A}$	-0.3			V
$V_{I(on)}$	Input On Voltage	$V_{CE} = -0.3\text{V}$ , $I_C = -20\text{mA}$			-2.5	V
$R_1$	Input Resistor		3.2	4.7	6.2	$K\Omega$
$R_1/R_2$	Resistor Ratio		0.42	0.47	0.52	

# Typical Characteristics

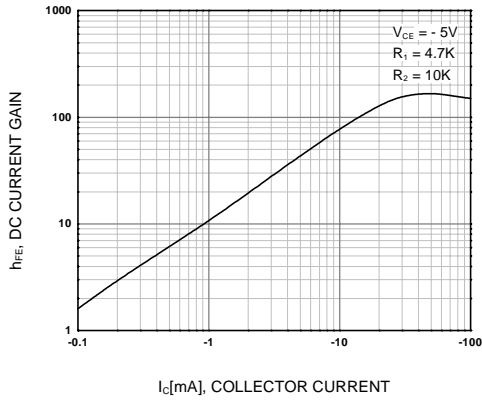


Figure 1. DC current Gain

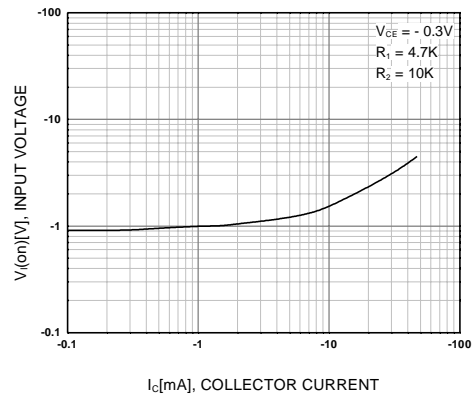


Figure 2. Input On Voltage

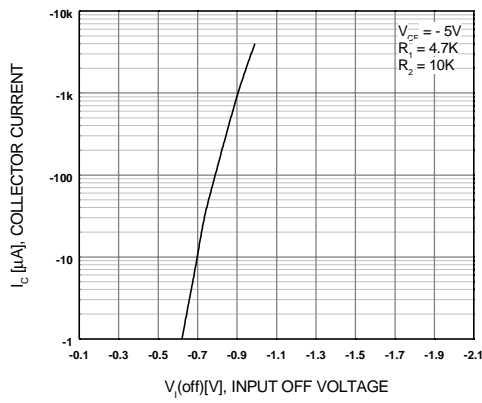


Figure 3. Input Off Voltage

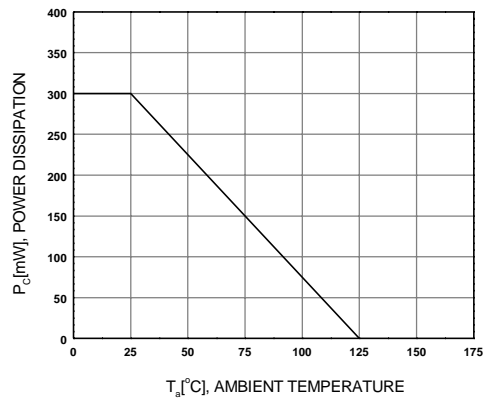
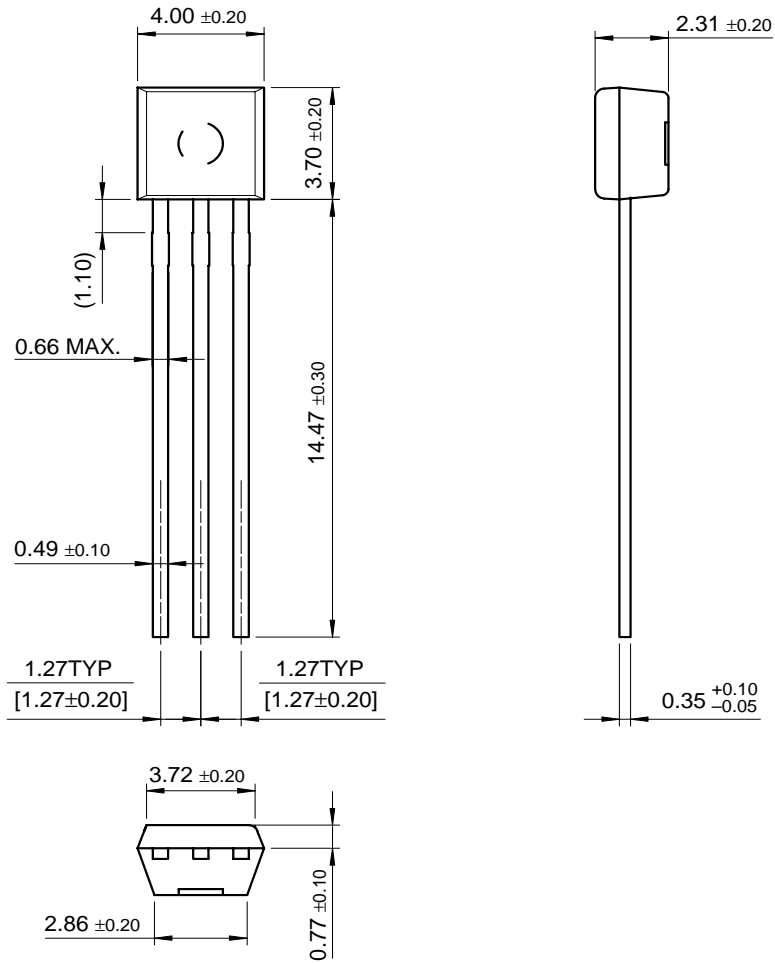


Figure 4. Power Derating

# Package Dimensions

## TO-92S



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	µC™	OCX™	RapidConfigure™	UHC™
Across the board. Around the world.™		OCXPro™	RapidConnect™	UltraFET®
The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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