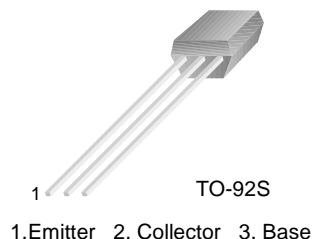


## FJNS3205R

### 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 FJNS4205R

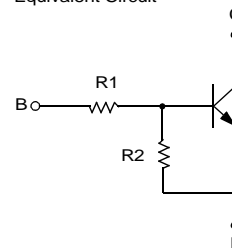


### NPN Epitaxial Silicon Transistor

#### 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	$V_{CE}=10\text{V}$ , $I_C=5\text{mA}$ $f=1\text{MHz}$		3.7		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}$ , $I_C=5\text{mA}$		250		MHz
$V_I(\text{off})$	Input Off Voltage	$V_{CE}=5\text{V}$ , $I_C=100\mu\text{A}$	0.3			V
$V_I(\text{on})$	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

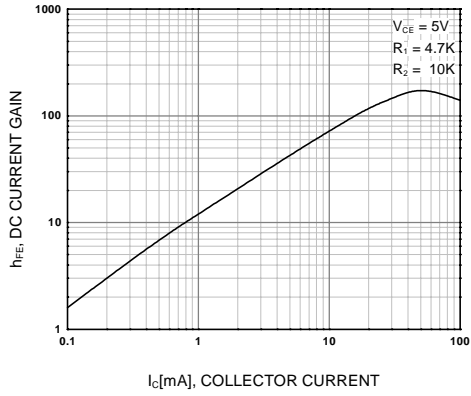


Figure 1. DC current Gain

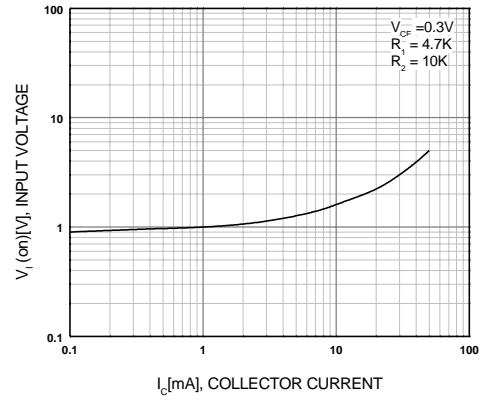


Figure 2. Input On Voltage

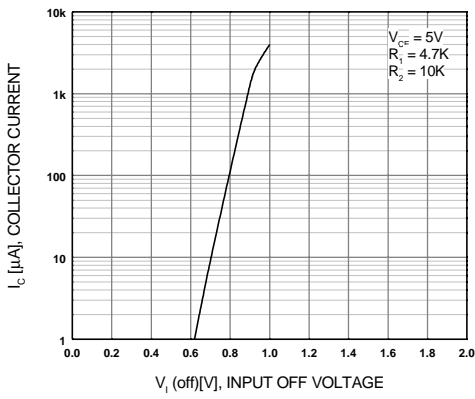


Figure 3. Input Off Voltage

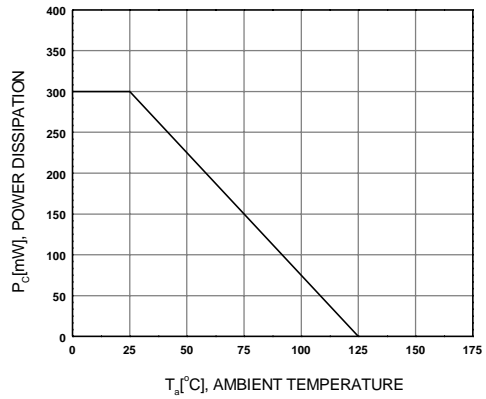


Figure 4. Power Derating

# Package Dimensions

FJNS3205R

## 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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