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[FJN3309RBU](#)

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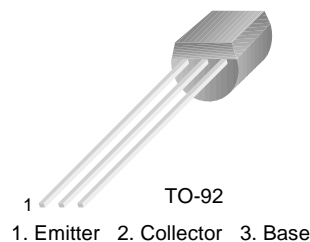
sales@integrated-circuit.com



FJN3309R

Switching Application (Bias Resistor Built In)

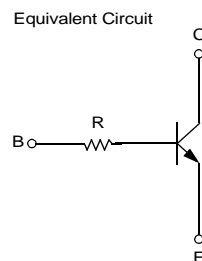
- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ($R=4.7K\Omega$)
- Complement to FJN4309R



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	40	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	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	$^\circ\text{C}$



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	$I_C=100\mu\text{A}, I_E=0$	40			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_E=1\text{mA}, I_B=0$	40			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE}=5\text{V}, I_C=1\text{mA}$	100		600	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$			0.3	V
C_{ob}	Output Capacitance	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{MHz}$		3.70		pF
f_T	Current Gain Bandwidth Product	$V_{CE}=10\text{V}, I_C=5\text{mA}$		250		MHz
R	Input Resistor		3.2	4.7	6.2	K Ω

Typical Characteristics

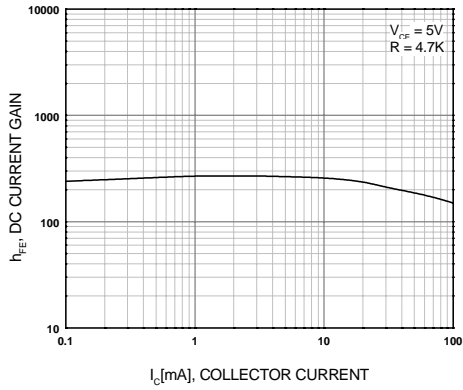


Figure 1. DC current Gain

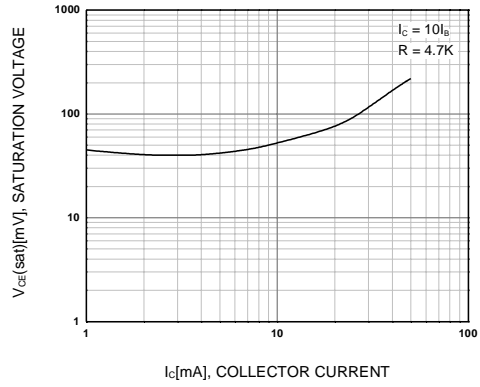


Figure 2. Collector-Emitter Saturation Voltage

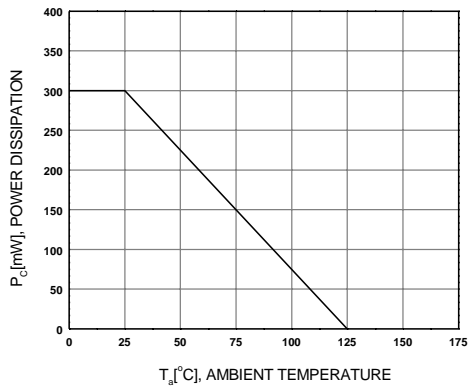
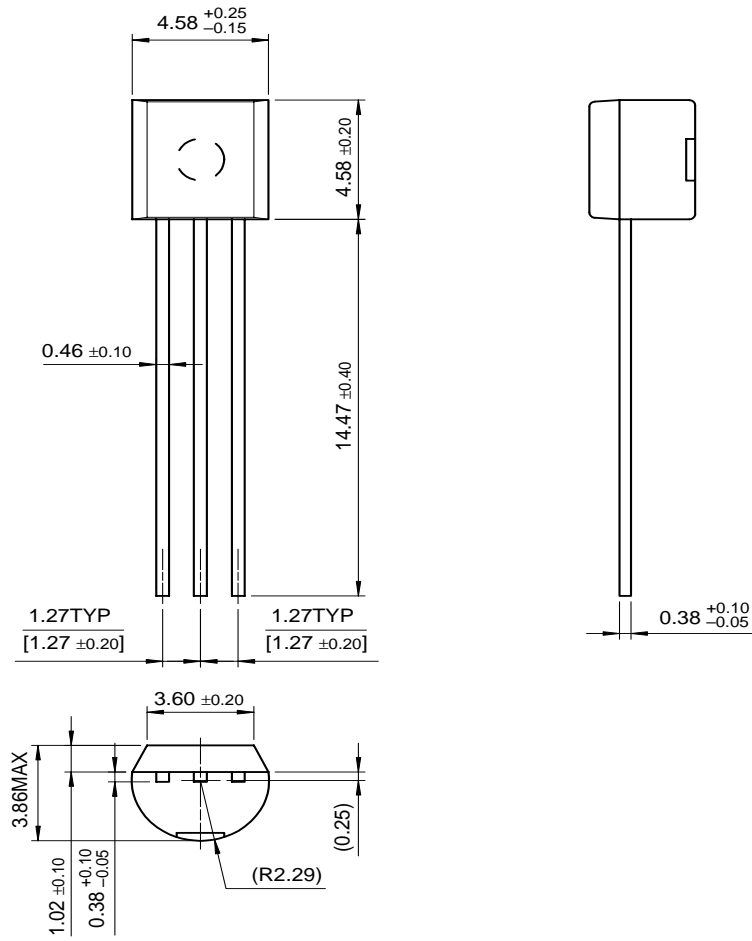


Figure 3. Power Derating

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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