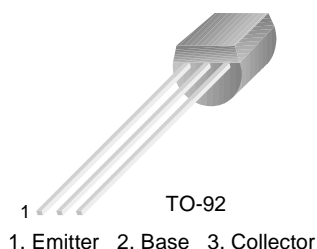


## KSP5179

### High Frequency Transistor



### NPN Epitaxial Silicon Transistor

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

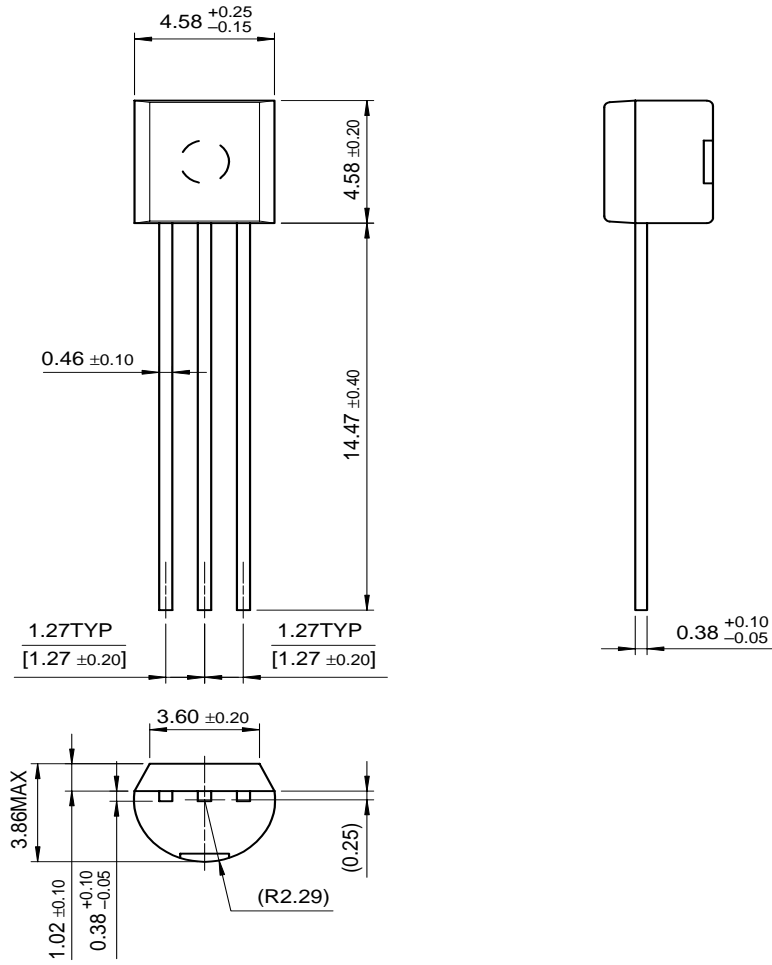
Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	20	V
$V_{CEO}$	Collector-Emitter Voltage	12	V
$V_{EBO}$	Emitter-Base Voltage	2.5	V
$I_C$	Collector Current	50	mA
$P_C$	Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	200	mW
	Derate above $25^\circ\text{C}$	1.6	mW/ $^\circ\text{C}$
$P_C$	Collector Power Dissipation ( $T_C=25^\circ\text{C}$ )	300	mW
	Derate above $25^\circ\text{C}$	2.4	mW/ $^\circ\text{C}$
$T_J$	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.	Max.	Units
$V_{CEO}$ (sus)	Collector-Emitter Sustaining Voltage	$I_C=3\text{mA}$ , $I_B=0$	12		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}$ , $I_E=0$	20		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}$ , $I_C=0$	2.5		V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=15\text{V}$ , $I_E=0$		0.02	$\mu\text{A}$
		$V_{CB}=15\text{V}$ , $I_E=0$ , $T_a=150^\circ\text{C}$		1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CB}=1\text{V}$ , $I_C=3\text{mA}$	25	250	
$V_{CE}$ (sat)	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}$ , $I_B=1\text{mA}$		0.4	V
$V_{BE}$ (sat)	Base-Emitter Saturation Voltage	$I_C=10\text{mA}$ , $I_B=1\text{mA}$		1	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=6\text{V}$ , $I_C=5\text{mA}$	900	2000	MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=0.1$ to $1\text{MHz}$		1	pF
$h_{fe}$	Small Signal Current Gain	$V_{CE}=6\text{V}$ , $I_C=2\text{mA}$ , $f=1\text{KHz}$	25	300	
$C_C \cdot r_{bb'}$	Collector Base Time Constant	$V_{CE}=6\text{V}$ , $I_E=2\text{mA}$ , $f=31.9\text{MHz}$	3	14	ps
NF	Noise Figure	$V_{CE}=6\text{V}$ , $I_C=1.5\text{mA}$ , $f=200\text{MHz}$ $R_S=50\Omega$		4.5	dB

# Package Dimensions

## TO-92



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

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