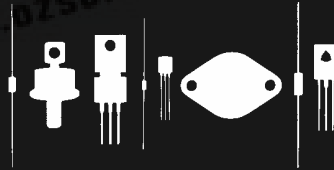


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145 Adams Avenue
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2N4960 2N4961 TO-39 CASE
2N4962 2N4963 TO-18 CASE

NPN SILICON TRANSISTORS

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4960 Series types are Silicon NPN Epitaxial Planar Transistors designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOL	2N4960, 2N4962	2N4961, 2N4963	UNIT
Collector-Base Voltage	V_{CB0}	60	80	V
Collector-Emitter Voltage	V_{CE0}	60	80	V
Emitter-Base Voltage	V_{EB0}	6.5	6.5	V
Collector Current	I_C	1.0	1.0	A
Power Dissipation	P_D	0.8	0.5	W
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	3.5	1.5	W
Operating & Storage Junc. Temp.	T_J, T_{stg}	-65 TO +200		$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_{CBO}	$V_{CB}=50\text{V}$		10	nA
I_{EBO}	$V_{EB}=4.0\text{V}$		10	nA
BV_{CBO}	$I_C=10\mu\text{A}$ (2N4960,2)	60		V
BV_{CBO}	$I_C=10\mu\text{A}$ (2N4961,3)	80		V
BV_{CES}	$I_C=10\mu\text{A}$ (2N4960,2)	60		V
BV_{CES}	$I_C=10\mu\text{A}$ (2N4961,3)	80		V
BV_{CEO}	$I_C=10\text{mA}$ (2N4960,2)	60		V
BV_{CEO}	$I_C=10\text{mA}$ (2N4961,3)	80		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.5		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.07	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.18	V
$V_{CE(SAT)}$	$I_C=300\text{mA}, I_B=30\text{mA}$		0.31	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.5	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.72	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.78	0.90	V
$V_{BE(SAT)}$	$I_C=300\text{mA}, I_B=30\text{mA}$		1.05	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.30	V
$V_{BE(ON)}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$		0.88	V
h_{FE}	$V_{CE}=10\text{V}, I_C=100\mu\text{A}$	30		
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	60		
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	90		
h_{FE}	$V_{CE}=10\text{V}, I_C=50\text{mA}$	100		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	40		
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	
h_{FE}	$V_{CE}=10\text{V}, I_C=300\text{mA}$	70		
h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	45		
f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	100		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		15	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		75	pF

