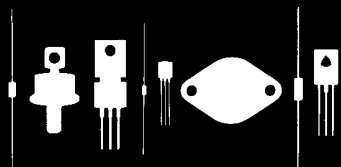


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145 Adams Avenue  
Hauppauge, New York 11788



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
		<u>2N4960, 2N4961</u>	<u>2N4962, 2N4963</u>	
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
$I_{CB0}$	$V_{CB}=50\text{V}$		10	nA
$I_{EB0}$	$V_{EB}=4.0\text{V}$		10	nA
$BV_{CB0}$	$I_C=10\mu\text{A}$ (2N4960,2)	60		V
$BV_{CB0}$	$I_C=10\mu\text{A}$ (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
$BV_{CE0}$	$I_C=10\text{mA}$ (2N4960,2)	60		V
$BV_{CE0}$	$I_C=10\text{mA}$ (2N4961,3)	80		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.5		V
$V_{CE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.07	V
$V_{CE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.18	V
$V_{CE}(\text{SAT})$	$I_C=300\text{mA}, I_B=30\text{mA}$		0.31	V
$V_{CE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.5	V
$V_{BE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.72	V
$V_{BE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.78	0.90	V
$V_{BE}(\text{SAT})$	$I_C=300\text{mA}, I_B=30\text{mA}$		1.05	V
$V_{BE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.30	V
$V_{BE}(\text{ON})$	$V_{CE}=10\text{V}, I_C=150\text{mA}$		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

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