



NTE2414 (NPN) & NTE2415 (PNP) Silicon Complementary Transistors Digital ^W/2 Built-In Bias 10k Resistors (Surface Mount)

Features:

- Built-In Bias Resistors
- Small SOT-23 Surface Mount Package

Applications:

- Switching Circuits
- Inverters
- Interface Circuits
- Driver

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Collector-Base Voltage, V_{CBO}	50V
Collector-Emitter Voltage, V_{CEO}	50V
Emitter-Base Voltage, V_{EBO}	10V
Collector Current, I_C	
Continuous	100mA
Peak	200mA
Collector Dissipation, P_C	200mW
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-55° to +150°C

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$	—	—	0.1	μA
	I_{CEO}	$V_{CE} = 40V, I_B = 0$	—	—	0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	170	250	330	μA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 10mA$	50	—	—	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	50	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu A, R_{BE} = \infty$	50	—	—	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 0.5mA$	—	0.1	0.3	V
Current Gain-Bandwidth Product NTE2414	f_T	$V_{CE} = 10V, I_C = 5mA$	—	250	—	MHz
NTE2415			—	200	—	MHz

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2414	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	–	3.5	–	pF
NTE2415			–	5.3	–	pF
Input OFF Voltage	$V_{I(off)}$	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}$	0.8	1.1	1.5	V
Input ON Voltage	$V_{I(on)}$	$V_{CE} = 0.2\text{V}, I_C = 10\text{mA}$	1.0	2.0	4.0	V
Input Resistance	R_1		7	10	13	k Ω
Input Resistance Ratio	R_1/R_2		0.9	1.0	1.1	

