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NTE2645 Silicon PNP Transistor General Purpose Amp

Absolute Maximum Ratings:

Collector-Base Voltage, V_{CBO}	175V
Collector-Emitter Voltage, V_{CEO}	175V
Emitter-Base Voltage, V_{EBO}	5V
Collector Current, I_C	1A
Total Power Dissipation, P_T	
$T_A = +25^\circ\text{C}$	1.0W
Derate linearly	5.71mW/ $^\circ\text{C}$
$T_C = +25^\circ\text{C}$	5.0W
Derate linearly	28.6mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to +200°C
Storage Temperature Range, T_{stg}	-65° to +200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
OFF Characteristics							
Collector-Emitter Breakdown Current	$V_{(BR)CEO}$	$I_C = 10\text{mA}$	175	-	-	V	
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = 100\text{V}$	-	-	100	nA	
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB} = 3\text{V}$	-	-	50	nA	
		$V_{EB} = 5\text{V}$	-	-	10	μA	
Collector-Emitter Cutoff Current	I_{CEO}	$V_{CE} = 100\text{V}$	-	-	10	μA	
ON Characteristics (Note 1)							
Forward-Current Transfer Ratio	h_{FE}	$V_{CE} = 10\text{V}$	$I_C = 0.1\text{mA}$	55	-	-	
			$I_C = 1.0\text{mA}$	90	-	-	
			$I_C = 10\text{mA}$	100	-	-	
			$I_C = 50\text{mA}$	100	-	300	
			$I_C = 150\text{mA}$	60	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$	-	-	0.3	V	
		$I_C = 50\text{mA}, I_B = 5.0\text{mA}$	-	-	0.6	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$	-	-	0.8	V	
		$I_C = 50\text{mA}, I_B = 5.0\text{mA}$	0.65	-	0.9	V	

Note 1. Pulse test: Pulse Width = 300 μs , Duty Cycle \leq 2.0%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Forward Current Transfer Ratio	$ h_{fe} $	$I_C = 30\text{mA}, V_{CE} = 30\text{V}, f = 100\text{MHz}$	2.0	-	5.8	
	h_{fe}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 1.0\text{kHz}$	80	-	320	
Small-Signal Short-Circuit Input Impedance	h_{je}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 1.0\text{kHz}$	200	-	1200	Ω
Small-Signal Open-Circuit Output Admittance	h_{oe}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 1.0\text{kHz}$	-	-	200	μs
Output Capacitance	C_{obo}	$V_{CB} = 20\text{V}, I_E = 0, 100\text{kHz} \leq f \leq 1.0\text{MHz}$	-	-	10	pF
Input Capacitance	C_{ibo}	$V_{EB} = 1.0\text{V}, I_C = 0, 100\text{kHz} \leq f \leq 1.0\text{MHz}$	-	-	75	pF
Noise Figure	NF	$f = 100\text{Hz}$	-	-	5.0	dB
		$f = 1.0\text{kHz}$	-	-	3.0	dB
		$f = 10\text{kHz}$	-	-	3.0	dB

