ELECTRONICS, INC.
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NTE287 (NPN) & NTE288 (PNP)
Silicon Complementary Transistors
High Voltage, General Purpose Amplifier

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 300V
Collector–Base Voltage, V_{CBE} 300V
Emitter–Base Voltage, V_{EBO}
NTE287 . . . . . 6V
NTE288 . . . . . 5V
Continuous Collector Current, I_C 500mA
Total Device Dissipation @ T_A = +25°C, P_D 625mW
Derate Above +25°C . . . . . 5mW/°C
Total Device Dissipation @ T_C = +25°C, P_D 1.5W
Derate Above +25°C . . . . . 12mW/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 200°C/mW
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 83.3°C/mW

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0, Note 1	300	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	300	–	–	V
Emitter–Base Breakdown Voltage NTE287	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	6	–	–	V
NTE288			5	–	–	V
Collector Cutoff Current NTE287	I_{CBO}	V_{CB} = 200V, I_E = 0	–	–	0.1	μA
NTE288			–	–	0.25	μA
Emitter Cutoff Current NTE287	I_{EBO}	V_{EB} = 6V, I_C = 0	–	–	0.1	μA
NTE288		V_{EB} = 3V, I_C = 0	–	–	0.1	μA

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain NTE287 & NTE288	h_{FE}	I_C = 1mA, V_{CE} = 10V	25	–	–	
		I_C = 10mA, V_{CE} = 10V	40	–	–	
NTE287		I_C = 30mA, V_{CE} = 10V	40	–	–	
NTE288			25	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 20mA, I_B = 2mA	–	–	0.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 20mA, I_B = 2mA	–	–	0.9	V
Small–Signal Characteristics						
Current Gain – Bandwidth Product	f_T	I_C = 10mA, V_{CE} = 20V, f = 100MHz	50	–	–	MHz
Collector–Base Capacitance NTE287	C_{cb}	V_{CB} = 20V, I_E = 0, f = 1MHz	–	–	3	pF
NTE288			–	–	6	pF

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

