



NES

NEW ENGLAND SEMICONDUCTOR

NSQ2907

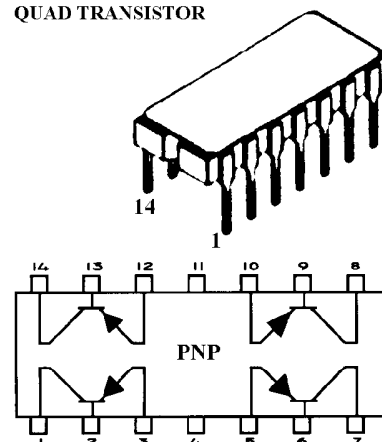
QUAD GENERAL PURPOSE DUAL-IN-LINE TRANSISTORS

...designed for general-purpose switching circuits and DC to VHF amplifier applications.

- FOUR ISOLATED TRANSISTORS.
- DC CURRENT GAIN SPECIFIED
- LOW COLLECTOR-CUTOFF CURRENT
- HIGH COLLECTOR BREAKDOWN VOLTAGES

TO-116

PNP HERMETIC SILICON
QUAD TRANSISTOR

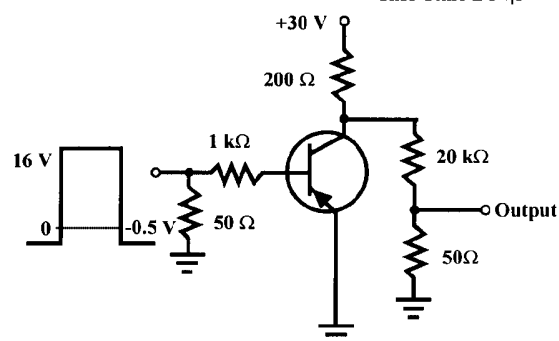


MAXIMUM RATINGS

RATINGS		SYMBOL	VALUE		UNITS
Collector-Emitter Voltage		V_{CEO}	40		Vdc
Collector-Base Voltage		V_{CBO}	60		Vdc
Emitter-Base Voltage		V_{EBO}	5.0		Vdc
Collector Current -- Continuous		I_C	600		mAdc
			Each Transistor	Total Device	
Total Power Dissipation @ $T_C = 25^{\circ}C$ Derate above $25^{\circ}C$		P_D	0.525	1.5	W
			3.0	8.57	mW/ $^{\circ}C$
Operating & Storage Junction Temperature Range		T_J, T_{stg}	-65 to +200		$^{\circ}C$

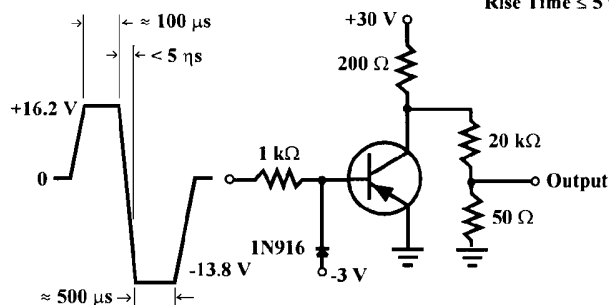
Generator Rise Time $\leq 2 \text{ ns}$
PW $\leq 200 \text{ ns}$
Duty Cycle = 2%

SCOPE
 $R_{in} > 100 \text{ k}\Omega$
 $C_{in} \leq 12 \text{ pF}$
Rise Time $\leq 5 \text{ ns}$



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SCOPE
 $R_{in} > 100 \text{ k}\Omega$
 $C_{in} \leq 12 \text{ pF}$
Rise Time $\leq 5 \text{ ns}$



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6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-055 REV: --

**NES****NEW ENGLAND SEMICONDUCTOR****NSQ2907****ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)**

Characteristics	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 10 \text{ mAdc}, I_B = 0$	$V_{(BR)CEO}$	40		Vdc
Collector-Base Breakdown Voltage $I_C = 10 \mu\text{Adc}, I_E = 0$	$V_{(BR)CBO}$	60		Vdc
Emitter-Base Breakdown Voltage $I_E = 10 \mu\text{Adc}, I_C = 0$	$V_{(BR)EBO}$	5.0		Vdc
Collector Cutoff Current $I_E = 0, V_{CB} = 100 \text{ Vdc}$ $I_E = 0, V_{CB} = 100 \text{ Vdc}, T_A = 150^{\circ}\text{C}$	I_{CBO}		30 15	ηAdc μAdc
Emitter Cutoff Current $I_B = 0, V_{CB} = 4.0 \text{ Vdc}$	I_{EBO}		20	ηAdc

ON CHARACTERISTICS (1)

DC Current Gain $I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ dc}$ $I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, T_A = -55^{\circ}\text{C}$	h_{FE}	50 75 100 30 25		
Collector-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{CE(sat)}$		0.4 1.6	Vdc
Base-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{BE(sat)}$		1.4 2.6	Vdc

DYNAMIC CHARACTERISTICS

Small-Signal Current Gain $V_{CE} = 10 \text{ Vdc}, I_C = 1.0 \text{ mAdc}, f = 1.0 \text{ kHz}$	h_{fe}	50		
Magnitude of Small Signal Current Gain $I_C = 20 \text{ mAdc}, V_{CE} = 20 \text{ Vdc}, f = 100 \text{ MHz}$	$ h_{fe} $	2.0		
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz to } 1.0 \text{ MHz}$	C_{obo}		12	$\text{p}f$
Input Capacitance $V_{BE} = 0.5 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz to } 1.0 \text{ MHz}$	C_{ibo}		75	$\text{p}f$

SWITCHING CHARACTERISTICS

Turn-On Time $V_{CC} = 30 \text{ Vdc}, V_{BE(off)} = 0.5 \text{ Vdc}, I_C = 150 \text{ mAdc}, I_{B1} = 15 \text{ mAdc}$	t_{on}		40	ηs
Turn-Off Time $V_{CC} = 30 \text{ Vdc}, I_C = 150 \text{ mAdc}, I_{B1} = I_{B2} = 15 \text{ mAdc}$	t_{off}		300	ηs

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.**NEW ENGLAND SEMICONDUCTOR**6 Lake Street Lawrence, MA 01841
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