



NES

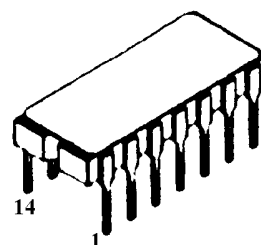
NEW ENGLAND SEMICONDUCTOR

NSQ3724
NSQ3725

QUAD DUAL - IN LINE NPN HERMETIC SILICON MEMORY DRIVER TRANSISTORS

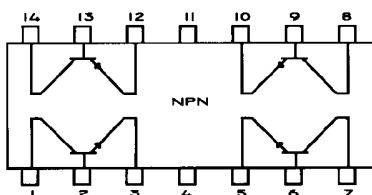
- FAST SWITCHING TIMES
- LOW COLLECTOR-EMITTER SATURATION VOLTAGE
- DC CURRENT GAIN SPECIFIED -- 100 mAdc TO 1.0 Adc
- TO-116 CERAMIC PACKAGE

TO-116

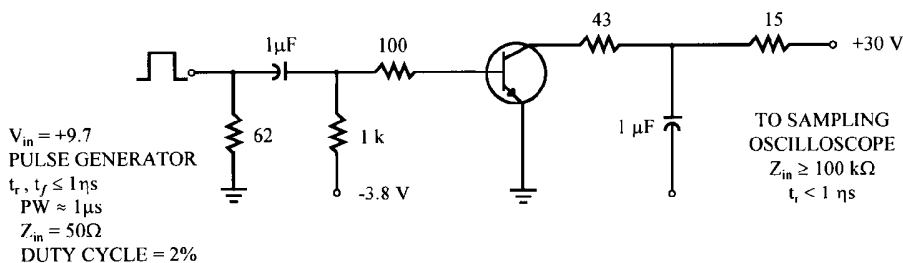


MAXIMUM RATINGS

RATINGS	SYMBOL	NSQ3724	NSQ3725	UNITS
Collector-Emitter Voltage	V_{CEO}	30	45	Vdc
Collector-Emitter Voltage	V_{CES}	50	70	Vdc
Collector-Base Voltage	V_{CBO}	50	70	Vdc
Emitter-Base Voltage	V_{EBO}	6.0		Vdc
Collector Current -- Continuous	I_C	1.5		Adc
		Each Transistor	Four Transistors Equal Power	
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	750 4.3	2000 11.4	mW mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.2 6.86	4.0 22.8	W mW/ $^\circ\text{C}$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-55 to +200		$^\circ\text{C}$



Turn-On and Turn-Off Switching Times Test Circuit



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

T4-4.8-860-047 REV: --

**NES****NEW ENGLAND SEMICONDUCTOR****NSQ3724
NSQ3725****ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)**

Characteristics	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (1) $I_C = 10\text{ mAdc}$, $I_B = 0$	NSQ2N3724 NSQ 2N3725	$V_{(BR)CEO}$	30 45	Vdc
Collector-Emitter Breakdown Voltage $I_C = 10\text{ }\mu\text{Adc}$, $V_{BE} = 0$	NSQ2N3724 NSQ 2N3725	$V_{(BR)CES}$	50 70	Vdc
Collector-Base Breakdown Voltage $I_C = 10\text{ }\mu\text{Adc}$, $I_E = 0$	NSQ 2N3724 NSQ 2N3725	$V_{(BR)CBO}$	50 70	Vdc
Emitter-Base Breakdown Voltage $I_C = 0$, $I_E = 10\text{ }\mu\text{Adc}$		$V_{(BR)EBO}$	6.0	Vdc
Collector Cutoff Current $V_{CB} = 40\text{ Vdc}$, $I_E = 0$ $V_{CB} = 50\text{ Vdc}$, $I_E = 0$	NSQ 2N3724 NSQ 2N3725	I_{CBO}	500	ηAdc

ON CHARACTERISTICS (1)

DC Current Gain $I_C = 100\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$ $I_C = 500\text{ mAdc}$, $V_{CE} = 50\text{ mAdc}$ $I_C = 1.0\text{ Adc}$, $V_{CE} = 5.0\text{ Vdc}$	NSQ 2N3724 NSQ 2N3725	h_{FE}	60 25 35 25	
Collector-Emitter Saturation Voltage $I_C = 100\text{ mAdc}$, $I_B = 10\text{ mAdc}$ $I_C = 500\text{ mAdc}$, $I_B = 50\text{ mAdc}$ $I_C = 1.0\text{ Adc}$, $I_B = 100\text{ mAdc}$		$V_{CE(sat)}$	0.26 0.52 0.95	Vdc
Base-Emitter Saturation Voltage $I_C = 100\text{ mAdc}$, $I_B = 10\text{ mAdc}$ $I_C = 500\text{ mAdc}$, $I_B = 50\text{ mAdc}$ $I_C = 1.0\text{ Adc}$, $I_B = 100\text{ mAdc}$		$V_{BE(sat)}$	0.8 0.86 1.1 1.7	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain -- Bandwidth Product $I_C = 50\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $f = 100\text{ MHz}$	f_T	200		MHz
Output Capacitance $V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 100\text{ kHz}$	C_{ob}		10	p^f
Input Capacitance $V_{BE} = 0.5\text{ Vdc}$, $I_C = 0$, $f = 100\text{ kHz}$	C_{ib}		70	p^f

SWITCHING CHARACTERISTICS

Turn-On Time $V_{CC} = 30\text{ Vdc}$, $I_C = 0.5\text{ Adc}$, $V_{BE(off)} = 3.8\text{ Vdc}$, $I_{B1} = 50\text{ mAdc}$	t_{on}		35	ηs
Turn-Off Time $V_{CC} = 30\text{ Vdc}$, $I_C = 0.5\text{ Adc}$, $I_{B1} = -I_{B2} = 500\text{ mA}$	t_{off}		60	ηs

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