

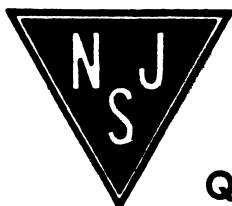
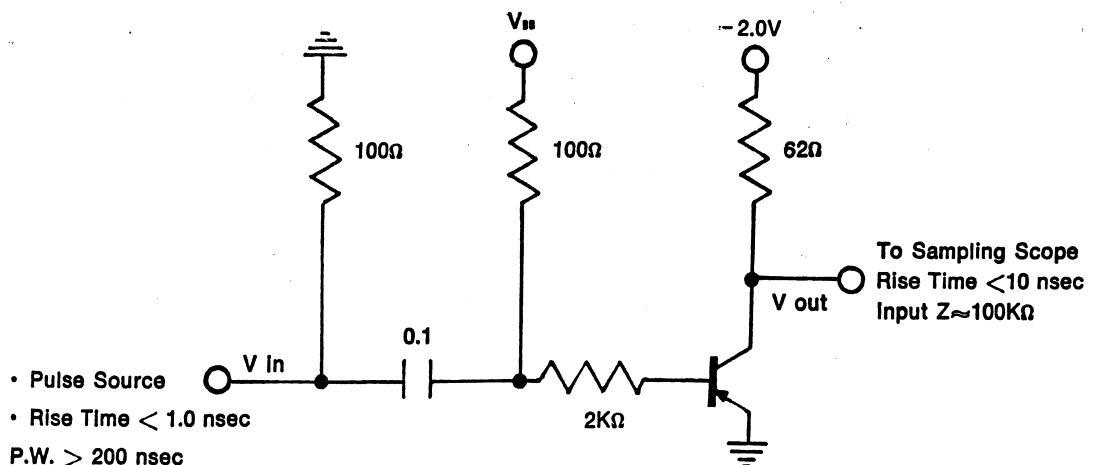
Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS @ 25°C unless otherwise noted.

SYMBOL	2N2894			2N3209			UNIT	CONDITIONS
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
V_{CS}	-12			-20			Vdc	$I_C = 10\mu A$
BV_{CES}				-20			Vdc	$I_C = 10\mu A$
LV_{CS}	-12			-20			Vdc	$I_C = 10mA$
BV_{CS}	-4.0			-4.0			Vdc	$I_E = 100\mu A$
h_{FE}	40 30 25 17	75 85 85 43	150	30 25 15 12	75 87 30 43	120		$I_C = 30mA$ $V_{CE} = -0.5V$ $I_C = 10mA$ $V_{CE} = -0.3V$ $I_C = 100mA$ $V_{CE} = -1.0V$ $I_C = 30mA$ $V_{CE} = -0.5V$ $T_A = -55$
$V_{CS}(sat)$		-0.07 -0.10 -0.25	-0.15 -0.20 -0.50		-0.07 -0.10 -0.28	-0.15 -0.20 -0.60	Vdc	$I_C = 10mA$ $I_E = 1.0mA$ $I_C = 10mA$ $I_E = 3.0mA$ $I_C = 100mA$ $I_E = 10mA$
$V_{ES}(sat)$	-0.78 -0.85	-0.92 -1.10 -1.40	-0.98 -1.20 -1.70	-0.78 -0.85	-0.92 -1.10 -1.40	-0.98 -1.20 -1.70	Vdc	$I_C = 10mA$ $I_E = 1.0mA$ $I_C = 30mA$ $I_E = 3.0mA$ $I_C = 100mA$ $I_E = 10mA$
I_{CIS}		0.05	80		0.05	80	nA	$V_{CE} = -6V$ and $-10V$ respectively
I_{CS}		0.025	10		0.025	10	μA	Same as above $T_A = 125^\circ C$
C_{in}		3.3	8.0		3.0	5.0	pF	$V_{CS} = -5.0V$
C_{out}		3.8	6.0		3.8	6.0	pF	$V_{ES} = -0.5V$
f_{max}	40	5.5		4.0	5.5			$I_C = 30mA$ $V_{CS} = -10V$ $f = 100MHz$
t_{on}		23	60		23	60	nsec	$I_C \sim 30mA$ $I_{E1} \sim 1.5mA$
t_{off}		34	90		34	90	nsec	$I_C \sim 30mA$ $I_{E1} \sim 1.5mA$ $I_{E2} \sim 1.5mA$

NOTES: 1. Pulsed measurement: width $\leq 300 \mu sec$, duty cycle $\leq 2\%$
2. Rating is where collector to emitter voltage is lowest.

$t_{on} - t_{off}$ TEST CIRCUIT



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t_{on}
 $V_{CC} = -2.0V$
 $V_{ES} = 3.0V$
 $V_{in} = -7.0V$

t_{off}
 $V_{CC} = -2.0V'$
 $V_{ES} = -4.0V$
 $V_{in} = +6.0V$