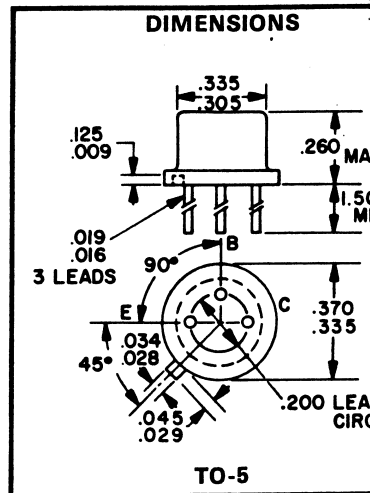
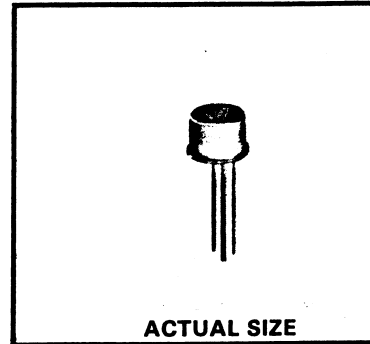


# GENERAL PURPOSE HIGH-VOLTAGE PNP SILICON PLANAR EPITAXIAL TRANSISTORS

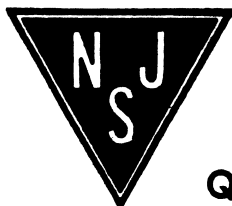
- High Voltage: -80V (2N4031, 3)
- High Gain: 100 min. @ 100mA (2N4032, 3)
- Low  $V_{ce}$  (sat): -0.15V @ 150mA

2N4030, 2N4031, 2N4032, 2N4033 are high voltage PNP silicon planar epitaxial transistors useful in a variety of applications. Excellent linearity of current gain, high breakdown voltage and low saturation voltage combine in this 150MHz  $f_t$  device to increase the possible uses for this device. Primary applications are high voltage output stages and complementary drivers.



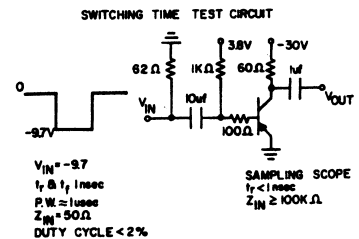
## ABSOLUTE MAXIMUM RATINGS

CHARACTERISTICS	2N4030	2N4031	UNI
	2N4032	2N4033	
Collector-to-Base Voltage.....	-60	-80	Vol
Collector-to-Emitter Voltage (open base).....	-60	-80	Vol
Emitter-to-Base Voltage.....	-5	-5	Vol
Collector Current.....	1.0	1.0	Am
Junction Temperature (op. and stg.).....	-65 to +200		°C
Total Dissipation @ $T_c=25^\circ\text{C}$ .....	4.0		Wat
(derate above 25°C).....	22.8		mW
Total Dissipation @ $T_A=25^\circ\text{C}$ .....	0.8		Wat
(derate above 25°C).....	4.56		mW



**ELECTRICAL CHARACTERISTICS @ 25°C unless otherwise noted.**

SYMBOL	2N4030		2N4031		2N4032		2N4033		UNIT	CONDITIONS
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
$BV_{CEO}$	-60		-80		-60		-80		Vdc	$I_C = -10\mu A$
$LV_{CEO}^{1,2}$	-60		-80		-60		-80		Vdc	$I_C = -10mA$
$BV_{EBO}$	-5.0		-5.0		-5.0		-5.0		Vdc	$I_C = -10\mu A$
$h_{FE}^1$	40	120	40	120	100	300	100	300		$I_C = -100mA$ $V_{CE} = -5V$ $I_C = -100\mu A$ $V_{CE} = -5V$ $I_C = -500mA$ $V_{CE} = -5V$ $I_C = -100mA$ $V_{CE} = -5V$ $T_A = -55^\circ C$ $I_C = -1A$ $V_{CE} = -5V$
$V_{CE(sat)}^1$		-0.15		-0.15		-0.15		-0.15	Vdc	$I_C = -150mA$ $I_B = -15mA$ $I_C = -500mA$ $I_B = -50mA$
$V_{BE(sat)}^1$		-1.0		-1.0		-1.0		-1.0	Vdc	$I_C = -1A$ $I_B = -100mA$
		-0.9		-0.9		-0.9		-0.9	Vdc	$I_C = -150mA$ $I_B = -15mA$
		-1.1		-1.1		-1.1		-1.1	Vdc	$I_C = -500mA$ $V_{CE} = -0.5V$
		-1.2		-1.2		-1.2		-1.2	Vdc	$I_C = -1A$ $V_{CE} = -1V$
$I_{CBO}$		-50		-50		-50		-50	nAdc	$V_{CB} = -50V$
		-50		-50		-50		-50	nAdc	$V_{CB} = -60V$
		-50		-50		-50		-50	$\mu Adc$	$V_{CB} = -50V$ $T_A = 150^\circ C$
		-50		-50		-50		-50	$\mu Adc$	$V_{CB} = -60V$ $T_A = 150^\circ C$
$I_{EBO}$		-10		-10		-10		-10	$\mu Adc$	$V_{EB} = -5V$
$C_{ob}$		20		20		20		20	pF	$V_{CB} = -10V$ $f = 1MHz$
$C_{ib}$		110		110		110		110	pF	$V_{EB} = -0.5V$ $f = 1MHz$
$ h_{fe} $	1.0	4.0	1.0	4.0	1.5	5.0	1.5	5.0		$V_{CE} = -10V$ $I_C = -50mA$ $f = 100MHz$
$t_{on}$		100		100		100		100	ns	$I_C \approx 500mA$ $I_{B1} \approx 50mA$ $I_{B2} \approx 50mA$
$t_r$		350		350		350		350	ns	
$t_f$		50		50		50		50	ns	



SILICON  
 GENERAL  
 PURPOSE  
 TRANSISTORS

**2N4030 2N4031**  
**2N4032 2N4033**

