

## PNP SILICON SMALL SIGNAL TRANSISTOR

Qualified per MIL-PRF-19500/382

### Devices

2N2944A

2N2945A

2N2946A

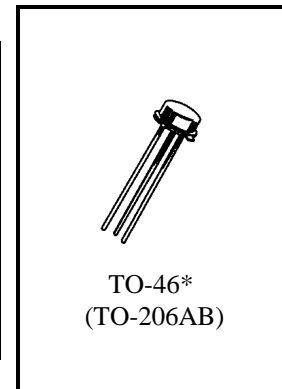
### Qualified Level

JAN  
JANTX  
JANTV

### MAXIMUM RATINGS

Ratings	Sym	2N2944A	2N2945A	2N2946A	Unit
Collector-Emitter Voltage	$V_{CEO}$	10	20	35	Vdc
Emitter-Collector Voltage	$V_{ECO}$	10	20	35	Vdc
Collector-Base Voltage	$V_{CBO}$	15	25	40	Vdc
Emitter-Base Voltage	$V_{EBO}$	15	25	40	Vdc
Collector Current	$I_C$	100			mAdc
Total Power Dissipation @ $T_A = +25^{\circ}\text{C}$	$P_T^{(1)}$	400			mW
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200			$^{\circ}\text{C}$

1) Derate linearly 2.30 mW/ $^{\circ}\text{C}$  above  $T_A = +25^{\circ}\text{C}$



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage $I_C = 10 \mu\text{Adc}$	$V_{(BR)CEO}$	10		Vdc
2N2944A		20		
2N2945A 2N2946A		35		
Emitter-Collector Breakdown Voltage $I_E = 10 \mu\text{Adc}$	$V_{(BR)ECO}$	10		Vdc
2N2944A		20		
2N2945A 2N2946A		35		
Collector-Base Cutoff Current $I_C = 10 \mu\text{Adc}, V_{CB} = -15 \text{Vdc}$	$I_{CBO}$	10		$\mu\text{Adc}$
$I_C = 10 \mu\text{Adc}, V_{CB} = -25 \text{Vdc}$		10		$\mu\text{Adc}$
$I_C = 10 \mu\text{Adc}, V_{CB} = -40 \text{Vdc}$		10		$\mu\text{Adc}$

**2N2944A, 2N2945A, 2N2946A JAN SERIES**

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
Emitter-Base Cutoff Current V <sub>EB</sub> = 15 Vdc V <sub>EB</sub> = 25 Vdc V <sub>EB</sub> = 40 Vdc	I <sub>EBO</sub>		0.1 0.2 0.5	ηAdc
2N2944A				
2N2945A 2N2946A				

**ON CHARACTERISTICS <sup>(2)</sup>**

Forward-Current Transfer Ratio I <sub>C</sub> = 1.0 mAdc, V <sub>CE</sub> = 0.5 Vdc	h <sub>FE</sub>	100		
2N2944A		70		
2N2945A 2N2946A		50		
Forward-Current Transfer Ratio I <sub>B</sub> = 200 μAdc, V <sub>EC</sub> = -0.5 Vdc	h <sub>FE(INV)</sub>	50		
2N2944A		30		
2N2945A 2N2946A		20		
Emitter-Collector Offset Voltage I <sub>B</sub> = 200 μAdc, I <sub>E</sub> = 0	V <sub>EC(OFS)</sub>		0.3	mVdc
2N2944A			0.5	
2N2945A			0.8	
I <sub>B</sub> = 1.0 mAdc, I <sub>E</sub> = 0			0.6	
2N2944A			1.0	
2N2945A 2N2946A			2.0	
I <sub>B</sub> = 2.0 mAdc, I <sub>E</sub> = 0		1.0		
2N2944A		1.6		
2N2945A 2N2946A		2.5		

**DYNAMIC CHARACTERISTICS**

Emitter-Collector On-State Resistance I <sub>B</sub> = 100 μAdc, I <sub>E</sub> = 0, I <sub>e</sub> = 100 μAdc (rms) f = 1.0 kHz	r <sub>ec(on)</sub>		10	Ω
2N2944A			12	
2N2945A 2N2946A			14	
I <sub>B</sub> = 1.0 mAdc, I <sub>E</sub> = 0, I <sub>e</sub> = 100 μAdc (rms) f = 1.0 kHz			4.0	
2N2944A			6.0	
2N2945A 2N2946A			8.0	
Magnitude of Small-Signal Forward Current Transfer Ratio I <sub>C</sub> = 1.0 mAdc, V <sub>CE</sub> = 6.0Vdc, f = 1.0 MHz	h <sub>fe</sub>	15	55	
2N2944A		10	55	
2N2945A 2N2946A		5.0	55	
Output Capacitance V <sub>CB</sub> = 6.0 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>obo</sub>		10	pF
Input Capacitance V <sub>EB</sub> = 6.0 Vdc, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>ibo</sub>		6.0	pF

(2) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0%.