



# NES

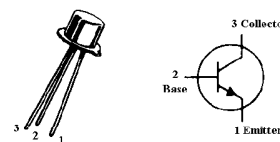
NEW ENGLAND SEMICONDUCTOR

2N706A

## SILICON SWITCHING NPN TRANSISTORS

- FAST SWITCHING
- LOW SATURATION VOLTAGE
- HIGH FREQUENCY

NPN  
SMALL-SIGNAL  
TRANSISTOR

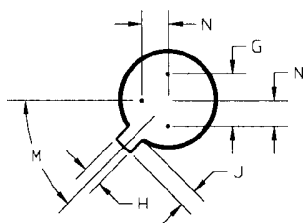


TO-18

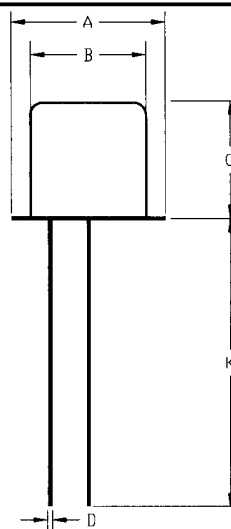
### MAXIMUM RATINGS

RATINGS	SYMBOL	2N706A	UNITS
Collector-Emitter Voltage	$V_{CEO}$	15	Vdc
Collector-Base Voltage	$V_{CB}$	25	Vdc
Emitter-Base Voltage	$V_{EB}$	5.0	Vdc
Collector Current -- Continuous	$I_C$	50	mAdc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.0 5.7	W m/W $^\circ\text{C}$
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

### MECHANICAL OUTLINE



DIM	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	5.31	5.84	0.209	0.230
B	4.52	4.95	0.178	0.185
C	4.32	5.33	0.170	0.210
D	0.41	0.48	0.016	0.019
G	2.54 TYP		0.100 TYP	
H	0.91	1.17	0.036	0.046
J	0.72	1.22	0.026	0.048
K	12.70	-	0.500	-
M	45° TYP		45° TYP	
N	1.27 TYP		0.050 TYP	



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1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-322 REV: --



# NEG

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2N706A

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

Characteristics	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Sustaining Voltage $I_C = 10 \text{ mAdc}$ , $I_B = 0$	$V_{CE(sus)}$	15		Vdc
Collector Cutoff Current $V_{CB} = 15 \text{ Vdc}$ , $I_E = 0$ $V_{CB} = 25 \text{ Vdc}$ , $I_E = 0$	$I_{CBO}$		0.5 10	$\mu\text{Adc}$ $\mu\text{Adc}$
Emitter Cutoff Current $V_{EB} = 5.0 \text{ Vdc}$ , $I_C = 0$	$I_{EBO}$		10	$\mu\text{Adc}$
<b>ON CHARACTERISTICS (1)</b>				
DC Current Gain $I_C = 10 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$	$h_{FE}$	20	60	
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$	$V_{CE(sat)}$		0.6	Vdc
Base-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$	$V_{BE(sat)}$	0.7	0.9	Vdc
<b>DYNAMIC CHARACTERISTICS</b>				
Forward Current Transfer Ratio $I_E = 10 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 100 \text{ MHz}$	$ h_{fe} $	2.0		
Output Capacitance $V_{CB} = 5.0 \text{ Vdc}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$	$C_{ob}$		5.0	$p^f$

(1) Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

SX LEVEL RELIABILITY TESTING

100% SCREENING	GROUP A	GROUP B (Sample)	GROUP C (Sample)
Internal Visual Temp Cycle Thermal Response Constant Acceleration PIND Fine and Gross Leak HTRB Power Burn In	Visual and Mechanical DC Static Tests $25^\circ\text{C}$ DC Static Tests High Temp DC Static Tests Low Temp Dynamic Tests @ $25^\circ\text{C}$	Solderability Temp Cycle Fine and Gross Leak Bond Strength Intermittent Op Life Steady State Op Life Thermal Resistance Hi-Temp (non-operating)	Physical Dimensions Thermal Shock Terminal Strength Hermetic Seal Moisture Resistance Shock Test Vibration Test Constant Acceleration Salt Atmosphere Operation Life

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