



NES

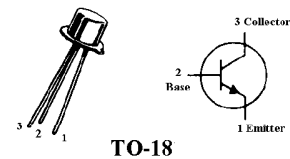
NEW ENGLAND SEMICONDUCTOR

2N706A

SILICON SWITCHING NPN TRANSISTORS

- FAST SWITCHING
- LOW SATURATION VOLTAGE
- HIGH FREQUENCY

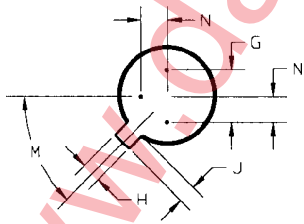
**NPN
SMALL-SIGNAL
TRANSISTOR**



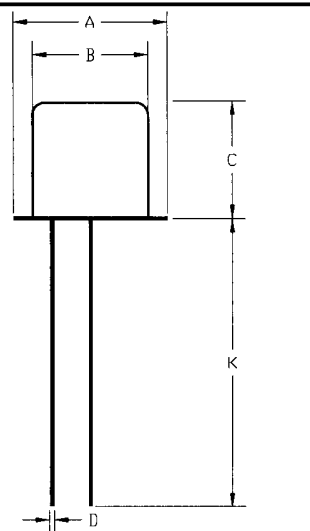
MAXIMUM RATINGS

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°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 $^\circ$ TYP		45 $^\circ$ TYP	
N	1.27 TYP		0.050 TYP	



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

T4-4.8-860-322 REV: --



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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage $I_C = 10 \text{ mAdc}, I_B = 0$	$V_{CEO(sus)}$	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	μAdc μAdc
Emitter Cutoff Current $V_{EB} = 5.0 \text{ Vdc}, I_C = 0$	I_{EBO}		10	μAdc
ON CHARACTERISTICS (1)				
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
DYNAMIC CHARACTERISTICS				
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 μs , 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°C DC Static Tests High Temp DC Static Tests Low Temp Dynamic Tests @ 25°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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