



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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NPN SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/ 312

Devices

2N708

Qualified Level

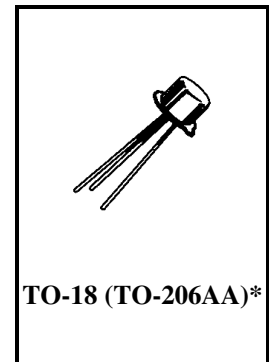
JAN, JANTX

MAXIMUM RATINGS

Ratings	Symbol	Value	Units
Collector-Emitter Voltage	V_{CEO}	15	Vdc
Collector-Base Voltage	V_{CBO}	40	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector-Emitter Voltage	V_{CER}	20	Vdc
Total Power Dissipation @ $T_A = +25^{\circ}\text{C}$ (1)	P_T	0.36	W
@ $T_C = +25^{\circ}\text{C}$ (2)		1.2	W
Operating & Storage Junction Temperature Range	T_{op}, T_{stg}	-65 to +200	$^{\circ}\text{C}$

1) Derate linearly 2.06 mW/ $^{\circ}\text{C}$ for $T_A > 25^{\circ}\text{C}$

2) Derate linearly 6.90 mW/ $^{\circ}\text{C}$ for $T_C > 25^{\circ}\text{C}$



TO-18 (TO-206AA)*

*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Base Breakdown Voltage $I_C = 1.0 \mu\text{Adc}$	$V_{(BR)CBO}$	40		Vdc
Emitter-Base Breakdown Voltage $I_E = 10 \mu\text{Adc}$	$V_{(BR)EBO}$	5.0		Vdc
Collector-Emitter Breakdown Voltage $I_C = 10 \text{mAdc}$	$V_{(BR)CEO}$	15		Vdc
Collector-Emitter Breakdown Voltage $I_C = 10 \text{mAdc}, R_{BE} \leq 10 \Omega$	$V_{(BR)CER}$	20		Vdc
Collector-Base Cutoff Current $V_{CB} = 20 \text{Vdc}$	I_{CBO}		25	ηAdc
Emitter-Base Cutoff Current $V_{EB} = 4.0 \text{Vdc}$	I_{EBO}		80	ηAdc

2N708 JANTX SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽³⁾				
Forward-Current Transfer Ratio $I_C = 0.5 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 10 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$	h_{FE}	15 40	120	
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$	$V_{CE(sat)}$		0.40	Vdc
Base-Emitter Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ $I_C = 1.0 \text{ mAdc}, I_B = 0.1 \text{ mAdc}$	$V_{BE(sat)}$	0.72	0.80 0.72	Vdc

DYNAMIC CHARACTERISTICS

Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$	$ h_{fe} $	3.0	9.0	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$	C_{obo}		6.0	p^f
Input Capacitance $V_{EB} = 0.5 \text{ Vdc}, I_C = 0, f = 1.0 \text{ MHz}$	C_{ibo}		9.0	p^f

SWITCHING CHARACTERISTICS

Charge Storage Time $I_C = I_{B1} = -I_{B21} = 10 \text{ mAdc}$	t_s		25	ηs
Turn-On Time $V_{BE} \approx -2.0 \text{ Vdc}; I_C \approx 10 \text{ mAdc}; I_{B1} \approx 3.0 \text{ mAdc}$	t_{on}		40	ηs
Turn-Off Time $I_C \approx 10 \text{ mAdc}; I_{B1} \approx 3.0 \text{ mAdc}, I_{B2} \approx -1.0 \text{ mAdc}$	t_{off}		75	ηs

(3) Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2.0%.