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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Microsemi LAWRENCE

TECHNICAL DATA

NPN SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/312

Devices	*Qualified Level*
2N708	**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 @ $T_A = +25^0C$ (1) @ $T_C = +25^0C$ (2)	P_T	0.36 1.2	W W
Operating & Storage Junction Temperature Range	T_{op}, T_{stg}	-65 to +200	^0C

1) Derate linearly 2.06 mW/^{0}C for $T_A > 25^0C$
2) Derate linearly 6.90 mW/^{0}C for $T_C > 25^0C$

TO-18 (TO-206AA)*

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = 25^0C$ unless otherwise noted)

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

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [3]				
Forward-Current Transfer Ratio I_C = 0.5 mAdc, V_{CE} = 1.0 Vdc I_C = 10 mAdc, V_{CE} = 1.0 Vdc	h_{FE}	 15 40	 120	
Collector-Emitter Saturation Voltage I_C = 10 mAdc, I_B = 1.0 mAdc	$V_{CE(sat)}$		0.40	Vdc
Base-Emitter Voltage I_C = 10 mAdc, I_B = 1.0 mAdc I_C = 1.0 mAdc, I_B = 0.1 mAdc	$V_{BE(sat)}$	 0.72	0.80 0.72	Vdc
DYNAMIC CHARACTERISTICS				
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 100 MHZ	$\lvert h_{fe} \rvert$	3.0	9.0	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz	C_{obo}		6.0	p^f
Input Capacitance V_{EB} = 0.5 Vdc, I_C = 0, f = 1.0 MHz	C_{ibo}		9.0	p^f
SWITCHING CHARACTERISTICS				
Charge Storage Time $I_C = I_{B1} = -I_{B21}$ = 10 mAdc	$^t s$		25	ηs
Turn-On Time $V_{BE} \approx$ -2.0 Vdc; $I_C \approx$ 10 mAdc; $I_{B1} \approx$ 3.0 mAdc	$^t on$		40	ηs
Turn-Off Time $I_C \approx$ 10 mAdc; $I_{B1} \approx$ 3.0 mAdc, $I_{B2} \approx$ -1.0 mAdc	$^t off$		75	ηs

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