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 LOW POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/253

Devices	*Qualified Level*
2N930	**JAN JANTX JANTXV**

MAXIMUM RATINGS

Ratings	Symbol	Value	Units
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current	I_C	30	mAdc
Total Power Dissipation @ $T_A = +25^0C$(1) @ $T_C = +25^0C$(2)	P_T	300 600	mW
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-55 to +200	^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	97	$^0C/W$

1) Derate linearly 2.0 mW/^{0}C above $T_A = +25^0C$
2) Derate linearly 4.0 mW/^{0}C above $T_C = +25^0C$

TO- 18*
(TO-206AA)

*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage I_C = 10 mAdc	$V_{(BR)CEO}$	45		Vdc
Collector-Base Cutoff Current V_{CB} = 60 Vdc V_{CB} = 45 Vdc	I_{CBO}		10 10	µAdc ηAdc
Emitter-Base Cutoff Current V_{EB} = 6.0 Vdc V_{EB} = 5.0 Vdc	I_{EBO}		10 5.0	µAdc ηAdc
Collector-Emitter Cutoff Current V_{CE} = 45 Vdc	I_{CES}		2.0	ηAdc
Collector-Base Cutoff Current V_{CE} = 5.0 Vdc	I_{CEO}		2.0	ηAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [3]				
Forward-Current Transfer Ratio I_C = 10 µAdc, V_{CE} = 5.0 Vdc I_C = 500 µAdc, V_{CE} = 5.0 Vdc I_C = 10 mAdc, V_{CE} = 5.0 Vdc	h_{FE}	 100 150	 300 600	
Collector-Emitter Saturation Voltage I_C = 10 mAdc, I_B = 0.5 mAdc	$V_{CE(sat)}$		 1.0	Vdc
Base-Emitter Saturation Voltage I_C = 10 mAdc, I_B = 0.5 mAdc	$V_{BE(sat)}$	 0.6	 1.0	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 500 µAdc, V_{CE} = 5.0 Vdc, f = 30 MHz	$\lvert h_{fe} \rvert$	 1.5	 6.0	
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 1.0 mAdc, V_{CE} = 5.0 Vdc, f = 1.0 kHz	h_{fe}	 150	 600	
Small-Signal Short-Circuit Input Impedance V_{CB} = 5.0 Vdc, I_E = 1.0 mAdc, f = 1.0 kHz	h_{ib}	 25	 32	Ω
Small-Signal Short-Circuit Output Admittance V_{CB} = 5.0 Vdc, I_E = 1.0 mAdc, f = 1.0 kHz	h_{ob}		 1.0	µΩ
Output Capacitance V_{CB} = 5.0 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C_{obo}		 8.0	pF
Noise Figure V_{CE} = 5 Vdc; I_C = 10 µAdc; R_g =10kΩ Test 1: f = 100 Hz Test 2: f = 1.0 kHz Test 3: f = 10 kHz	NF		 5 3 3	dB

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