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 POWER TRANSISTOR SILICON AMPLIFIER

Qualified per MIL-PRF-19500/583

Devices		*Qualified Level*
2N5681	**2N5682**	**JAN JANTX JANTXV**

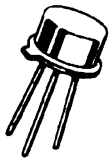
MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Ratings	Symbol	2N5681	2N5682	Units
Collector-Emitter Voltage	V_{CEO}	100	120	Vdc
Collector-Base Voltage	V_{CBO}	100	120	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	4.0	Vdc
Collector Current	I_C	1.0	1.0	Adc
Base Current	I_B	0.5	0.5	Adc
Total Power Dissipation @ T_A = +25°C(1) @ T_C = +25°C(2)	P_T	1.0 10	1.0 10	W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	17.5	°C

1) Derate linearly 5.7 mW/°C for T_A > +25°C
2) Derate linearly 57 mW/°C for T_C > +25°C



TO-39*
(TO-205AD)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage I_C = 10 mAdc 2N5681 2N5682	$V_{(BR)CEO}$	100 120		Vdc
Emitter-Base Cutoff Current V_{EB} = 4.0 Vdc	I_{EBO}		1.0	µAdc
Collector-Emitter Cutoff Current V_{CE} = 70 Vdc 2N5681 V_{CE} = 80 Vdc 2N5682	I_{CEO}		10	µAdc
Collector-Emitter Cutoff Current V_{BE} = 1.5 Vdc V_{CE} = 100 Vdc 2N5681 V_{CE} = 120 Vdc 2N5682	I_{CEX}		100	nAdc
Collector-Baser Cutoff Current V_{CE} = 100 Vdc 2N5681 V_{CE} = 120 Vdc 2N5682	I_{CBO}		100	nAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [3]				
Forward Current Transfer Ratio I_C = 250 mAdc, V_{CE} = 2.0 Vdc I_C = 500 mAdc, V_{CE} = 2.0 Vdc I_C = 1.0 Adc, V_{CE} = 2.0 Vdc	h_{FE}	40 20 5	150	
Collector-Emitter Saturation Voltage I_C = 250 mAdc, I_B = 25 mAdc I_C = 500 mAdc, I_B = 50 mAdc	$V_{CE(sat)}$		0.6 1.0	Vdc
Base-Emitter Saturation Voltage I_C = 250 mAdc, I_B = 25 mAdc I_C = 500 mAdc, I_B = 50 mAdc	$V_{BE(sat)}$		1.1 1.3	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short Circuit Forward-Current Transfer Ratio I_C = 0.1 Adc, V_{CE} = 10 Vdc, f = 10 kHz	$\lvert h_{fe} \rvert$	3.0		
Small Signal Short Circuit Forward-Current Transfer Ratio I_C = 0.2 Adc, V_{CE} = 1.5 Vdc, f = 1.0 kHz	h_{fe}	40		
Output Capacitance V_{CB} = 20 Vdc, I_E = 0, f = 1 MHz	C_{obo}		50	pF

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C, 1 Cycle, t ≥ 0.5 s

Test 1

V_{CE} = 2 Vdc, I_C = 1.0 Adc

Test 2

V_{CE} = 10 Vdc, I_C = 1.0 Adc

Test 3

V_{CE} = 90 Vdc, I_C = 50 mAdc