



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 HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/370

Devices

2N3442

Qualified Level

JAN
JANTX
JANTXV

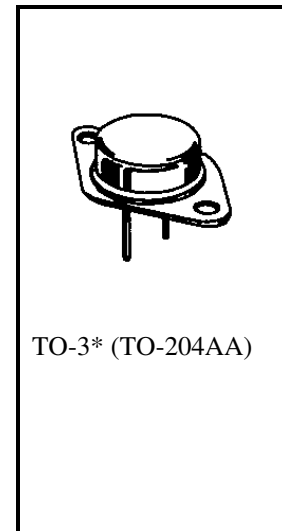
MAXIMUM RATINGS

Ratings	Symbol	Value	Units	
Collector-Emitter Voltage	V_{CEO}	140	Vdc	
Collector-Base Voltage	V_{CBO}	160	Vdc	
Collector-Emitter Voltage	V_{CER}	150	Vdc	
Emitter-Base Voltage	V_{EBO}	7.0	Vdc	
Base Current	I_B	7.0	Adc	
Collector Current	I_C	10	Adc	
Total Power Dissipation	P_T	@ $T_A = 25^{\circ}C$ ⁽¹⁾	6.0	W
		@ $T_C = 25^{\circ}C$ ⁽²⁾	117	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-55 to +200	$^{\circ}C$	

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.5	$^{\circ}C/W$

- Derate linearly 34.2 mW/ $^{\circ}C$ for $T_A > 25^{\circ}C$
- Derate linearly 668 mW/ $^{\circ}C$ for $T_C > 25^{\circ}C$



*See Appendix A for Package Outline

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

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Emitter Voltage $I_C = 3.0$ Adc	$V_{(BR)CEO}$	140		Vdc
Collector-Emitter Breakdown Voltage $I_C = 1.5$ Adc, $R_{BE} = 100 \Omega$	$V_{(BR)CER}$	150		Vdc
Collector-Emitter Breakdown Voltage $I_C = 1.5$ Adc, $V_{EB} = 1.5$ Vdc	$V_{(BR)CEX}$	160		Vdc
Collector-Base Cutoff Current $V_{CB} = 140$ Vdc, $V_{EB} = 1.5$ Vdc	I_{CEX}		1.0	mAdc
Emitter-Base Cutoff Current $V_{EB} = 7.0$ Vdc	I_{EBO}		1.0	mAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS ⁽³⁾

Forward-Current Transfer Ratio $I_C = 3.0 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$	h_{FE}	20	70	
Collector-Emitter Saturation Voltage $I_C = 3.0 \text{ Adc}, I_B = 300 \text{ mAdc}$	$V_{CE(sat)}$		1.0	Vdc
Base-Emitter Voltage $I_C = 3.0 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$	V_{BE}		1.7	Vdc

DYNAMIC CHARACTERISTICS

Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 3.0 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}, f = 100 \text{ kHz}$	$ h_{fe} $	1.0		
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SAFE OPERATING AREA**DC Tests** $T_C = +25^\circ\text{C}$, 1 Cycle, $t = 1.0 \text{ s}$ **Test 1** $V_{CE} = 11.7 \text{ Vdc}, I_C = 10 \text{ Adc}$ **Test 2** $V_{CE} = 78 \text{ Vdc}, I_C = 1.5 \text{ Adc}$ **Test 3** $V_{CE} = 140 \text{ Vdc}, I_C = 0.5 \text{ Adc}$ (3) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.