

## NPN SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/313

### Devices

**2N2432**  
**2N2432A**

### Qualified Level

**JAN**  
**JANTX**  
**JANTXV**

### MAXIMUM RATINGS

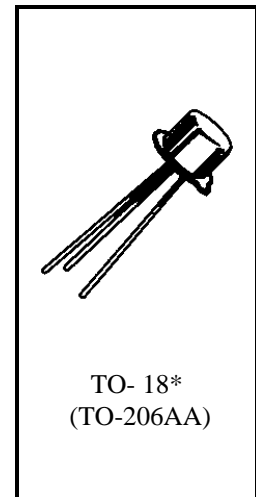
Ratings	Symbol	2N2432	2N2432A	Unit
Collector-Emitter Voltage	$V_{CEO}$	30	45	Vdc
Collector-Base Voltage	$V_{CBO}$	30	45	Vdc
Emitter-Collector Voltage	$V_{ECO}$	15	18	Vdc
Collector Current	$I_C$	100		mAdc
Total Power Dissipation	$P_T$	@ $T_A = +25^{\circ}C$ <sup>(1)</sup>	300	mW
		@ $T_C = +25^{\circ}C$ <sup>(2)</sup>	600	mW
Operating & Storage Junction Temp. Range	$T_{stg}$	-65 to +200		$^{\circ}C$
	$T_J$	-65 to +175		$^{\circ}C$

### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.25	$mW/^{\circ}C$

1) Derate linearly 2.0 mW/ $^{\circ}C$  above  $T_A > +25^{\circ}C$

2) Derate linearly 4.0 mW/ $^{\circ}C$  above  $T_C > +25^{\circ}C$



\*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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### OFF CHARACTERISTICS

Emitter-Collector Breakdown Voltage $I_E = 100 \mu A_{dc}, I_B = 0$	2N2432	$V_{(BR)ECO}$	15	Vdc
	2N2432A		18	
$I_E = 10 \text{ mAdc}, I_B = 0$	Both		10	
Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$	2N2432	$V_{(BR)CEO}$	30	Vdc
	2N2432A		45	
Collector-Emitter Cutoff Current $V_{CB} = 25 \text{ Vdc}$	2N2432	$I_{CES}$	10	$\eta A_{dc}$
	2N2432A		10	

**2N2432, 2N2432A JAN SERIES**

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS (con't)</b>				
Collector-Emitter Cutoff Current V <sub>CB</sub> = 30 Vdc V <sub>CB</sub> = 25 Vdc V <sub>CB</sub> = 40 Vdc V <sub>CB</sub> = 45 Vdc	2N2432 2N2432 2N2432A 2N2432A	I <sub>CBO</sub>	100 10 100 10	μA <sub>dc</sub> ηA <sub>dc</sub> μA <sub>dc</sub> ηA <sub>dc</sub>
Emitter-Collector Cutoff Current V <sub>EC</sub> = 15 Vdc, V <sub>BC</sub> = 0 Vdc	I <sub>ECS</sub>		2.0	ηA <sub>dc</sub>
Emitter-Base Cutoff Current V <sub>EB</sub> = 15 Vdc	I <sub>EBO</sub>		2.0	ηA <sub>dc</sub>

**ON CHARACTERISTICS (1)**

Forward-Current Transfer Ratio I <sub>C</sub> = 10 μA <sub>dc</sub> , V <sub>CE</sub> = 5.0 Vdc I <sub>C</sub> = 1.0 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 Vdc	h <sub>FE</sub>	30 80	400	
Forward-Current Transfer Ratio (Inverted Connection) I <sub>C</sub> = 0.2 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 Vdc	2N2432 2N2432A	h <sub>FE(inv)</sub>	2.0 3.0	
Collector-Emitter Saturation Voltage I <sub>C</sub> = 10 Vdc, I <sub>B</sub> = 0.5 mA <sub>dc</sub>	V <sub>CE(sat)</sub>		0.15	mVdc
Emitter-Collector Offset Voltage I <sub>E</sub> = 0 mA <sub>dc</sub> , I <sub>B</sub> = 200 μA <sub>dc</sub> I <sub>E</sub> = 0 mA <sub>dc</sub> , I <sub>B</sub> = 1.0 mA <sub>dc</sub>	2N2432 2N2432A 2N2432 2N2432A	V <sub>EC(ofs)</sub>	0.5 0.4 0.1 0.7	mVdc

**DYNAMIC CHARACTERISTICS**

Forward Current Transfer Ratio I <sub>C</sub> = 1.0 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 Vdc, f = 20 MHz	h <sub>fe</sub>	2.0	10	
Output Capacitance V <sub>CB</sub> = 0 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>obo</sub>		12	pF
Input Capacitance V <sub>EB</sub> = 0 Vdc, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>ibo</sub>		12	pF

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