

NPN SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/313

Devices

2N2432
2N2432A

Qualified Level

JAN
JANTX
JANTXV

MAXIMUM RATINGS

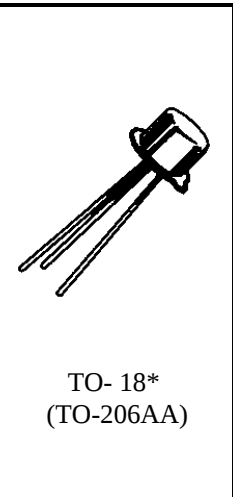
Ratings	Symbol	2N2432	2N2432A	Unit
Collector-Emitter Voltage	V_{CEO}	30	45	Vdc
Collector-Base Voltage	V_{CBO}	30	45	Vdc
Emitter-Collector Voltage	V_{ECO}	15	18	Vdc
Collector Current	I_C	100		mAdc
Total Power Dissipation @ $T_A = +25^{\circ}\text{C}$ ⁽¹⁾ @ $T_C = +25^{\circ}\text{C}$ ⁽²⁾	P_T	300		mW
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

THERMAL CHARACTERISTICS

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

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

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



*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Emitter-Collector Breakdown Voltage $I_E = 100 \mu\text{Adc}$, $I_B = 0$	2N2432	$V_{(BR)ECO}$	15	Vdc
	2N2432A		18	
	Both		10	
Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$	2N2432	$V_{(BR)CEO}$	30	Vdc
	2N2432A		45	
Collector-Emitter Cutoff Current $V_{CB} = 25 \text{ Vdc}$ $V_{CB} = 40 \text{ Vdc}$	2N2432	I_{CES}		ηAdc
	2N2432A		10	
			10	

2N2432, 2N2432A JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS (con't)

Collector-Emitter Cutoff Current $V_{CB} = 30 \text{ Vdc}$ 2N2432 $V_{CB} = 25 \text{ Vdc}$ 2N2432 $V_{CB} = 40 \text{ Vdc}$ 2N2432A $V_{CB} = 45 \text{ Vdc}$ 2N2432A	I_{CBO}		100 10 100 10	μAdc ηAdc μAdc ηAdc
Emitter-Collector Cutoff Current $V_{EC} = 15 \text{ Vdc}, V_{BC} = 0 \text{ Vdc}$	I_{ECS}		2.0	ηAdc
Emitter-Base Cutoff Current $V_{EB} = 15 \text{ Vdc}$	I_{EBO}		2.0	ηAdc

ON CHARACTERISTICS (1)

Forward-Current Transfer Ratio $I_C = 10 \mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}$ $I_C = 1.0 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$	h_{FE}	30 80	400	
Forward-Current Transfer Ratio (Inverted Connection) $I_C = 0.2 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ 2N2432 2N2432A	$h_{FE(\text{inv})}$	2.0 3.0		
Collector-Emitter Saturation Voltage $I_C = 10 \text{ Vdc}, I_B = 0.5 \text{ mAdc}$	$V_{CE(\text{sat})}$		0.15	mVdc
Emitter-Collector Offset Voltage $I_E = 0 \text{ mAdc}, I_B = 200 \mu\text{Adc}$ 2N2432 2N2432A $I_E = 0 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ 2N2432 2N2432A	$V_{EC(\text{ofs})}$		0.5 0.4 0.1 0.7	mVdc

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio $I_C = 1.0 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}, f = 20 \text{ MHz}$	$ h_{fe} $	2.0	10	
Output Capacitance $V_{CB} = 0 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		12	pF
Input Capacitance $V_{EB} = 0 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}		12	pF

(1) Pulse Test: Pulse Width = 300 μ s, Duty Cycle $\leq$ 2.0%.