

NPN SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/313

Devices

2N2432
2N2432A

Qualified Level

JAN
JANTX
JANTXV

MAXIMUM RATINGS

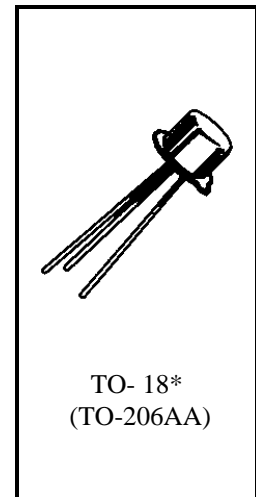
Ratings	Symbol	2N2432	2N2432A	Unit
Collector-Emitter Voltage	V_{CEO}	30	45	Vdc
Collector-Base Voltage	V_{CBO}	30	45	Vdc
Emitter-Collector Voltage	V_{ECO}	15	18	Vdc
Collector Current	I_C	100		mAdc
Total Power Dissipation	P_T	@ $T_A = +25^{\circ}\text{C}$ ⁽¹⁾	300	mW
		@ $T_C = +25^{\circ}\text{C}$ ⁽²⁾	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	
$I_E = 10 \text{ mAdc}, I_B = 0$	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	ηAdc
	2N2432A		10	

2N2432, 2N2432A JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

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

ON CHARACTERISTICS (1)

Forward-Current Transfer Ratio I _C = 10 μA _{dc} , V _{CE} = 5.0 Vdc I _C = 1.0 mA _{dc} , V _{CE} = 5.0 Vdc	h _{FE}	30 80	400	
Forward-Current Transfer Ratio (Inverted Connection) I _C = 0.2 mA _{dc} , V _{CE} = 5.0 Vdc 2N2432 2N2432A	h _{FE(inv)}	2.0 3.0		
Collector-Emitter Saturation Voltage I _C = 10 Vdc, I _B = 0.5 mA _{dc}	V _{CE(sat)}		0.15	mVdc
Emitter-Collector Offset Voltage I _E = 0 mA _{dc} , I _B = 200 μA _{dc} 2N2432 2N2432A I _E = 0 mA _{dc} , I _B = 1.0 mA _{dc} 2N2432 2N2432A	V _{EC(ofs)}		0.5 0.4 0.1 0.7	mVdc

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio I _C = 1.0 mA _{dc} , V _{CE} = 5.0 Vdc, f = 20 MHz	h _{fe}	2.0	10	
Output Capacitance V _{CB} = 0 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{obo}		12	pF
Input Capacitance V _{EB} = 0 Vdc, I _C = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{ibo}		12	pF

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