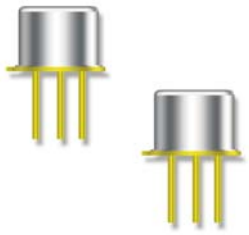
NPN Power Silicon Transistor

2N4150

NEW

AEROFLEX
A passion for performance.



Features

- Available in commercial, JAN, JANTX, JANTXV, JANS and JANSR 100K rads (Si) per MIL-PRF-19500/394
- TO-5 Package

Maximum Ratings

Ratings	Symbol	2N4150	Units
Collector - Emitter Voltage	V_{CEO}	70	Vdc
Collector - Base Voltage	V_{CBO}	100	Vdc
Emitter - Base Voltage	V_{EBO}	10.0	Vdc
Collector Current	I_C	10.0	Adc
Total Power Dissipation @ T_A = +25 °C (1) @ T_C = +25 °C (2)	P_T	160 15	W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	°C
Thermal Resistance, Junction-to-Case Junction-to-Ambient	$R_{\theta JC}$ $R_{\theta JA}$	10.0 175.0	°C/W

1) Derate linearly @ 5.7 mW/°C for T_A > +25°C

2) Derate linearly @ 100 mW/°C for T_C > +25°C

Electrical Characteristics (T_C = 25°C unless otherwise noted)

OFF Characteristics	Symbol	Mimimum	Maximum	Units
Collector - Emitter Breakdown Voltage I_C = 100 mAdc	$V_{(BR)CEO}$	70	- - -	Vdc
Collector - Emitter Cutoff Current V_{BE} = 0.5 Vdc, V_{CE} = 60 Vdc	I_{CEX}	- - -	10	µAdc
Collector - Emitter Cutoff Current V_{CE} = 60 Vdc	I_{CEO}	- - -	10	µAdc
Emitter - Base Cutoff Current V_{EB} = 7.0 Vdc V_{EB} = 5.0 Vdc	I_{EBO}	- - -	10 0.1	µAdc
Collector-Base Cutoff Current V_{CB} = 100 Vdc V_{CB} = 80 Vdc	I_{CBO}	- - -	10 0.1	µAdc

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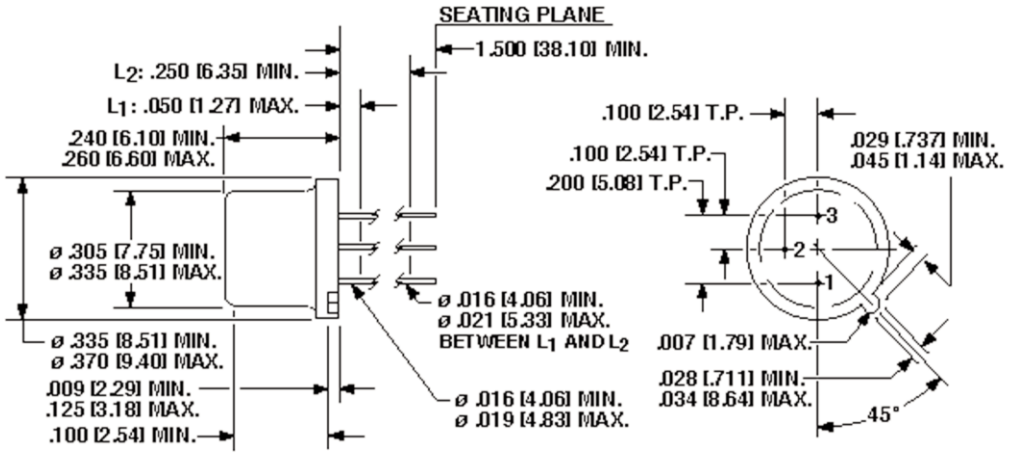
Electrical Characteristics -con't

ON Characteristics		Symbol	Mimimum	Maximum	Units
Collector-Base Cutoff Current					
I_C = 1.0 Adc, V_{CE} = 5.0 Vdc		H_{FE}	50	200	
I_C = 5.0 Adc, V_{CE} = 5.0 Vdc			40	120	
I_C = 10.0 Adc, V_{CE} = 5.0 Vdc			10	- - -	
Collector-Emitter Saturation Voltage					
I_C = 5.0 Adc, I_B = 0.5 Adc		$V_{CE(sat)}$	- - -	0.6	Vdc
I_C = 10.0 Adc, I_B = 1.0 Adc				2.5	
Base-Emitter Saturation Voltage					
I_C = 5.0 Adc, I_B = 0.5 Adc		$V_{BE(sat)}$	- - -	1.5	Vdc
I_C = 10.0 Adc, I_B = 1.0 Adc				2.5	
DYNAMIC Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio					
I_C = 0.2 Adc, V_{CE}= 10.0 Vdc, f = 10 MHz		$\lvert h_{fe} \rvert$	1.5	7.5	
Output Capacitance					
I = 0, VCB = 10.0 V, f = <1.0 Hz		C_{obo}	- - -	350	pF
SWITCHING Characteristics					
Delay Time	V_{CC} = 20 Vdc, V_{BB} = 5.0 Vdc,	t_d	- - -	50	ηs
Rise Time	I_C = 5.0 Adc, I_{B1}= 0.5 Adc	t_r	- - -	500	ηs
Storage Time	V_{CC} = 20 Vdc, V_{BB} = 5.0 Adc,	t_s	- - -	1.5	µs
Fall Time	I_C = 5.0 Adc, I_{B1} = -I_{B2} = -0.5 Adc	t_f	- - -	500	ηs
SAFE OPERATING AREA					
DC Tests:	T_C = +25 °C, 1 Cycle, t = 1.0 s				
Test 1:	V_{CE} = 40.0 Vdc, I_C = 0.22 Adc				
Test 2:	V_{CE} = 70 Vdc, I_C = 90 mAdc				

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

Outline Drawing



Note: All dimensions are inches [mm].

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ISO 9001: 2008 certified companies

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