PNP Power Silicon Transistor

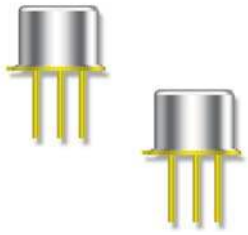
2N5151, 2N5151L & 2N5153, 2N5153L

NEW

AEROFLEX
A passion for performance.

Features

- Available in commercial, JAN, JANTX, JANTXV, JANS and JANSR 100K rads (Si) per MIL-PRF-19500/545
- TO-5 Package: 2N5151L, 2N5153L
  TO-39 (TO-205AD) Package: 2N5151, 2N5153



Maximum Ratings (T_C = +25°C unless otherwise noted)

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	80	Vdc
Collector - Base Voltage	V_{CBO}	100	Vdc
Emitter - Base Voltage	V_{EBO}	5.5	Vdc
Collector Current	I_C	2.0	Adc
Total Power Dissipation @ T_A = +25 °C @ T_C = +25 °C	P_T	1.0 10	W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	°C
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	10	°C/W

Electrical Characteristics (T_A = +25°C unless otherwise noted)

OFF Characteristics	Symbol	Mimimum	Maximum	Units
Collector - Emitter Breakdown Voltage I_C = 100 mAdc, I_B = 0	$V_{(BR)CEO}$	80	- - -	Vdc
Emitter - Base Cutoff Current V_{EB} = 4.0 Vdc, I_C = 0 V_{EB} = 5.5 Vdc, I_C = 0	I_{EBO}	- - -	1.0 1.0	µAdc mAdc
Collector - Emitter Cutoff Current V_{CE} = 60 Vdc, V_{BE} = 0 V_{CE} = 100 Vdc, V_{BE} = 0	I_{CES}	- - -	1.0 1.0	µAdc mAdc
Collector - Emitter Cutoff Current V_{CE} = 40 Vdc, I_B = 0	I_{CEO}	- - -	50	µAdc

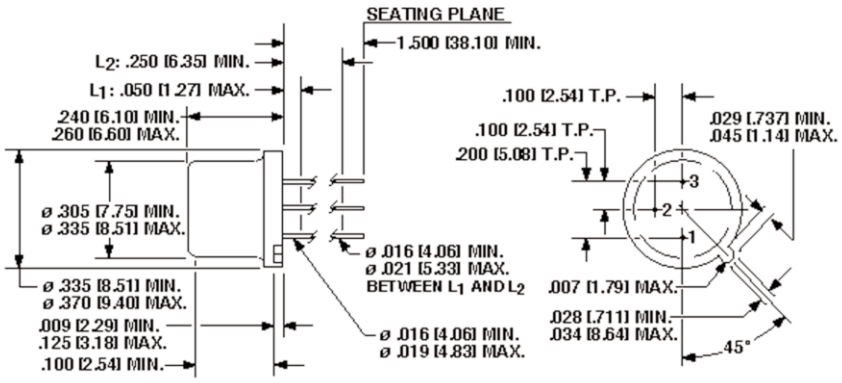
AEROFLEX
METELICS

Electrical Characteristics -con't

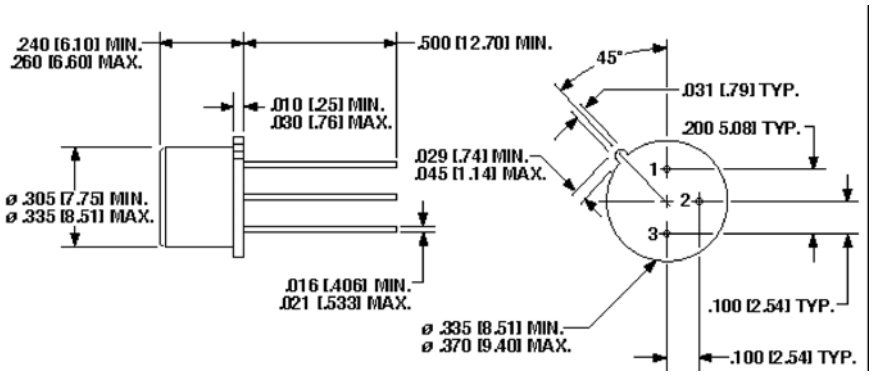
ON Characteristics		Symbol	Mimimum	Maximum	Units
Forward Current Transfer Ratio					
I_C = 50 mAdc, V_{CE} = 5.0 Vdc	2N5151	H_{FE}	20	- - -	
	2N5153		50	- - -	
I_C = 2.5 Adc, V_{CE} = 5.0 Vdc	2N5151		30	90	
	2N5153		70	200	
I_C = 5.0 Adc, V_{CE} = 5.0 Vdc	2N5151		20	- - -	
	2N5153		40	- - -	
Collector - Emitter Saturation Voltage					
I_C = 2.5 Adc, I_B = 250 mAdc		$V_{CE(sat)}$	- - -	0.75	Vdc
I_C = 5.0 Adc, I_B = 500 mAdc			- - -	1.5	
Emitter - Base Voltage Non-Saturation					
I_C = 2.5 Adc, V_{CE} = 5.0 Vdc		$V_{BE(ON)}$	- - -	1.45	Vdc
Emitter - Base Saturation Voltage					
I_C = 2.5 Adc, I_B = 250 mAdc		$V_{BE(sat)}$	- - -	1.45	Vdc
I_C = 5.0 Adc, I_B = 500 mAdc				2.2	
DYNAMIC Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio					
I_C = 500 mAdc, V_{CE}= 5.0 Vdc, f = 10 MHz	2N5151	$\lvert h_{fe} \rvert$	6.0	- - -	
	2N5153		7.0	- - -	
Small-signal short Circuit FOIWard-Current Transfer Ratio					
I_C = 100 mAdc, V_{CE} = 5 Vdc, f= 1KHz	2N5151	hfe	20	- - -	
	2N5I53		50	- - -	
Output Capacitance					
V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz		C_{obo}	- - -	250	pF
SWITCHING Characteristics					
Tum-On Time		t_{on}	- - -	0.5	µs
I_C = 5.0 Adc; I_{B1} = 500 mAdc					
R_L = 6 Ω					
$V_{BE(OFF)}$ = 3.7 Vdc					
Tum-offTime		t_{off}	- - -	1.5	µs
I_C = 5.0 Adc; I_{B1} = 500 mAdc					
I_{B2} = -500 mAdc					
R_L = 6 Ω					
$V_{BE(OFF)}$ = 3.7 Vdc					
Storage Time	I_C = 5.0 Adc; I_{B1} = 500 mAdc, I_{B2} = -500 mAdc, R_L = 6 Ω	t_s	- - -	1.4	µs
Fall Time	$V_{BE(OFF)}$ = 3.7 Vdc	t_f	- - -	0.5	µs
SAFE OPERATING AREA					
DC Tests:	T_C = +25 °C, 1 Cycle, tp = 1.0 s				
Test 1:	V_{CE} = 5.0 Vdc, I_C = 2.0 Adc				
Test 2:	V_{CE} = 32.0 Vdc, I_C = 310 mAdc				
Test 3:	V_{CE} = 80 Vdc, I_C = 12.5 mAdc				

Outline Drawing

TO-5 Package: (2N5151L, 2N5153L)



TO-39 (TO-205AD) Package: (2N5151, 2N5153)



NOTE: Dimensions in Inches [mm]

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