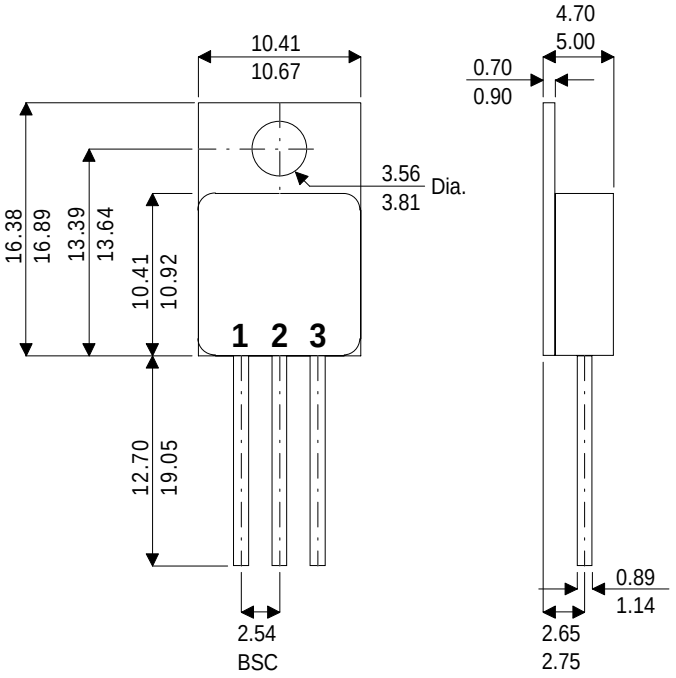
2N5154X-220M

MECHANICAL DATA

Dimensions in mm (inches)



TO-220M (TO-257AB)

PIN 1 = Base PIN 2 = Collector PIN = 3 – Emitter

HIGH SPEED MEDIUM VOLTAGE SWITCH

DESCRIPTION

The 2N5154X-220M is a silicon expitaxial planar NPN transistor in a traditional metal package for use in Switching and Linear applications.

ABSOLUTE MAXIMUM RATINGS T_{CASE} = 25°c unless otherwise stated

V_{CBO}	Collector – Base Voltage (I_E = 0)	100V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	80V
V_{EBO}	Emitter – Base Voltage (I_C = 0)	6V
I_C	Continuous Collector Current	5A
$I_{C(PK)}$	Peak Collector Current	10A
I_B	Base Current	1A
P_{tot}	Total Dissipation at T_{amb} = 25°C	1W
	T_{case} = 50°C	10W
	T_{case} = 100°C	6.7W
T_{stg}	Operating and Storage Temperature Range	–65 to +200°C
T_j	Junction temperature	200°C

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut Off Current	V_{CE} = 60V	V_{BE} = 0			1	µA
		V_{CE} = 100V	V_{BE} = 0			1	mA
I_{CEV}	Collector Cut Off Current	V_{CE} = 60V V_{BE} = -2V	T_{case} = 150°C			500	µA
I_{CEO}	Collector Cut Off Current	V_{CE} = 40V	I_B = 0			50	
I_{EBO}	Emitter Cut Off Current	V_{EB} = 4V	I_C = 0			1	µA
		V_{EB} = 5.5V	I_C = 0			1	mA
$V_{CEO(SUS)}$*	Collector Emitter Saturation Voltage	I_C = 100mA	I_B = 0	80			V
$V_{CE(sat)}$*	Collector Emitter Saturation Voltage	I_C = 2.5A	I_B = 250mA			0.75	
		I_C = 5A	I_B = 500mA			1.5	
$V_{BE(sat)}$*	Base Emitter Saturation Voltage	I_C = 2.5A	I_B = 250mA			1.45	
		I_C = 5A	I_B = 500mA			2.2	
V_{BE}*	Base Emitter Voltage	I_C = 2.5A	V_{CE} = 5V			1.45	
h_{FE}*	DC Current Gain	I_C = 50mA	V_{CE} = 5V	50			—
		I_C = 2.5A	V_{CE} = 5V	60		200	
			T_C = -55°C	25			
		I_C = 5A	V_{CE} = 5V	30			
C_{CBO}	Collector Base Capacitance	I_E = 0 f = 1MHz	V_{CB} = 10V			250	pF
h_{FE}	Small Signal Current Gain	I_C = 0.1A f = 1KHz	V_{CE} = 5V	50			—
		I_C = 0.5A f = 20MHz	V_{CE} = 5v	3.5			
t_{on}	Turn On Time	I_C = 5A I_{B1} = 0.5A	V_{CC} = 30v		0.5		µs
t_{off}	Turn Off Time	I_C = 5A I_{B1}=-I_{B2} = 0.5A	V_{CC} = 30V		1.3		

* Pulse test t_p = 300µs , δ < 2%

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