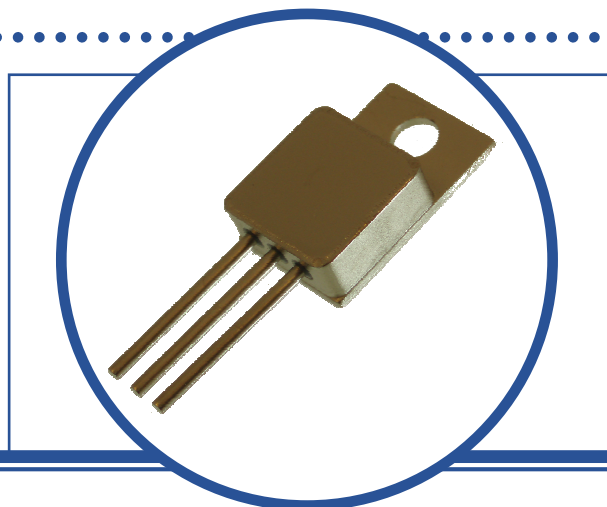


SILICON NPN POWER TRANSISTOR

2N5154X-220M

- Hermetic TO220 Isolated Metal Package
- Ideally suited for Driver Circuits, Switching and Amplifier Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V _{CB0}	Collector – Base Voltage (I _E = 0)	100V
V _{CEO}	Collector – Emitter Voltage (I _B = 0)	80V
V _{EBO}	Emitter – Base Voltage	5.5V
I _C	Continuous Collector Current	5A
I _B	Base Current	1.0A
I _{CM}	Peak Collector Current ⁽¹⁾	10A
P _D	Total Power Dissipation at T _C = 50°C Derate Above 50°C	40W 266.67mW/°C
T _J	Junction Temperature Range	-65 to +200°C
T _{stg}	Storage Temperature Range	-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case	3.75	°C/W

Notes

(1) Pulse Width ≤ 8.3mS, δ ≤ 1%

SILICON NPN POWER TRANSISTOR 2N5154X-220M

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
V _{(BR)CEO} ⁽²⁾	Collector-Emitter Breakdown Voltage	I _C = 10mA	80			V
I _{CES}	Collector Cut-Off Current	V _{CE} = 60V V _{BE} = 0			1.0	μA
		V _{CE} = 100V V _{BE} = 0			1.0	mA
I _{CEX}	Collector Cut-Off Current	V _{CE} = 60V V _{BE} = -2V T _C = 150°C			25	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			1.0	
		V _{EB} = 5.5V I _C = 0			1.0	
h _{FE} ⁽²⁾	Forward-current transfer ratio	I _C = 50mA V _{CE} = 5V	50			-
		I _C = 2.5A V _{CE} = 5V	70		200	
			T _C = -55°C	25		
I _C = 5A V _{CE} = 5V	40					
V _{BE} ⁽²⁾	Base-Emitter Voltage	I _C = 2.5 A V _{CE} = 5V			1.45	V
V _{BE(sat)} ⁽²⁾	Base -Emitter Saturation Voltage	I _C = 2.5A I _B = 250mA			1.45	
		I _C = 5A I _B = 500mA			2.2	
V _{CE(sat)} ⁽²⁾	Collector -Emitter Saturation Voltage	I _C = 2.5A I _B = 250mA			0.75	
		I _C = 5A I _B = 500mA			1.5	

DYNAMIC CHARACTERISTICS

h _{fe}	Magnitude of common-emitter, small-signal short-circuit, forward-current transfer ratio	I _C = 500mA V _{CE} = 5V f = 20MHz		1.2		-
h _{fe}	Small-Signal Current Gain	I _C = 100mA V _{CE} = 5V f = 1.0 KHz	50			-
C _{obo}	Output Capacitance	V _{CB} = 10V I _E = 0 f = 1.0MHz			250	pF
t _{on}	Turn-On Time	V _{CC} = 30V I _C = 5A I _{B1} = 500mA I _{B2} = - I _{B1} R _L = 6Ω			0.5	μS
t _s	Storage Time				1.4	
t _f	Fall Time				0.5	
t _{off}	Turn-Off Time				1.5	

Notes

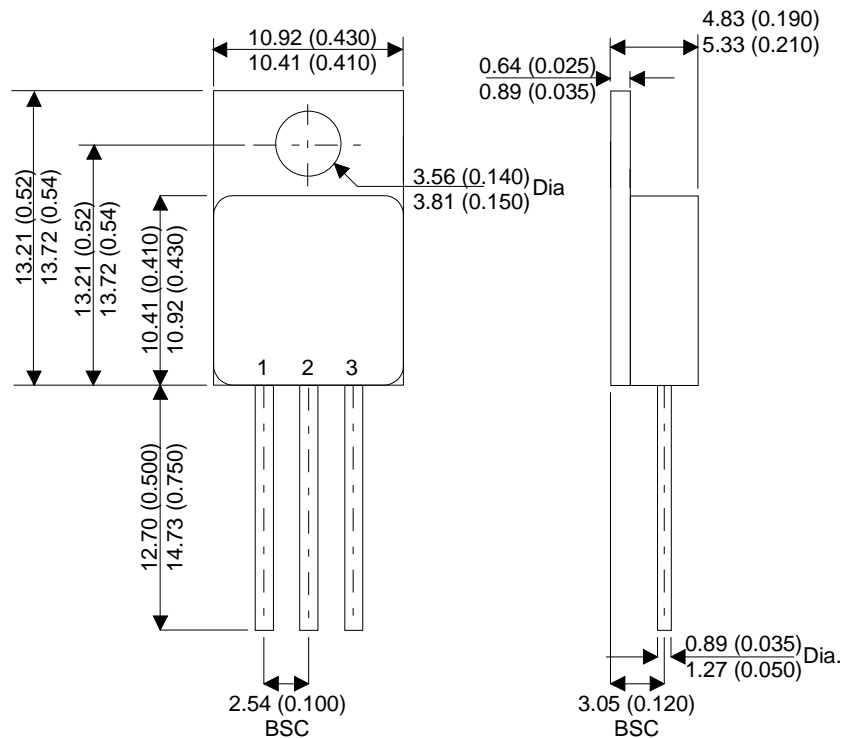
(2) Pulse Width ≤ 380us, δ ≤ 2%

SILICON NPN POWER TRANSISTOR

2N5154X-220M

MECHANICAL DATA

Dimensions in mm (inches)



TO220M (TO-257AB)

Pin 1 - Base

Pin 2 - Collector

Pin 3 - Emitter