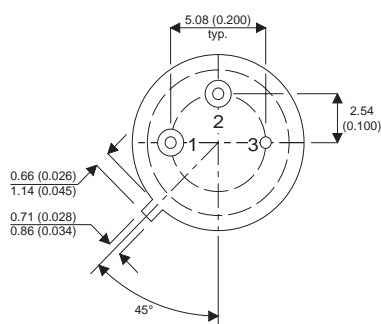
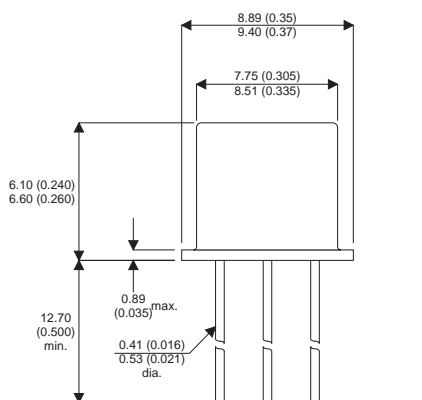


MECHANICAL DATA

Dimensions in mm (inches)



TO-39

Pin 1 – Emitter

Pin 2 – Base

Pin 3 – Collector

NPN SILICON TRANSISTORS

DESCRIPTION

The 2N5338X & 2N5339X silicon epitaxial planar NPN transistor in jedec TO-39 metal case intended for use as drivers for high power transistors in general purpose, amplifier and switching circuit

ABSOLUTE MAXIMUM RATINGS $T_{CASE} = 25^{\circ}C$ unless otherwise stated

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	100V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	100V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	6V
I_C	Collector Current	5A
I_{CM}	Collector Peak Current	7A
I_B	Base Current	1A
P_{tot}	Total Dissipation at $T_{case} \leq 25^{\circ}C$	6W
	$T_{amb} \leq 25^{\circ}C$	1W
T_{stg}	Storage Temperature Range	-65 to +200°C
T_j	Junction temperature	200°C

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	29.2	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut Off Current $I_E = 0$ $V_{CB} = 100V$			10	μA
I_{CEX}	Collector Cut Off Current $V_{BE} = 1.5V$ $V_{CE} = 90V$ $T_{case} = 150^{\circ}C$			10	μA
				1	mA
I_{CEO}	Collector Cut Off Current $I_B = 0$ $V_{CE} = 90V$			100	μA
$V_{CEO(sus)*}$	Collector Emitter Sustaining Voltage $I_B = 0$ $I_C = 50mA$			100	V
$V_{CE(sat)*}$	Collector Emitter Saturation Voltage $I_C = 2A$ $I_B = 0.2A$ $I_C = 5A$ $I_B = 0.5A$			0.7	V
				1.2	
$V_{BE(sat)*}$	Base Emitter Voltage $I_C = 2A$ $I_B = 0.2A$ $I_C = 5A$ $I_B = 0.5A$			1.2	V
				1.8	
h_{FE*}	DC Current Gain $I_C = 0.5A$ $V_{CE} = 2V$ $I_C = 2A$ $V_{CE} = 2V$ $I_C = 5A$ $V_{CE} = 2V$	2N5338X	30		—
		2N5339X	60		
		2N5338X	30	150	
		2N5339X	60	240	
		2N5338X	20		
		2N5339X	40		
f_T	Transistion Frequency $I_C = 0.5mA$ $V_{CE} = 10V$	30			MHz
C_{CBO}	Collector Base Capacitance $I_E = 0$ $V_{CB} = 10V$ $f = 0.1MHz$			250	pF
t_{on}	Turn-on Time $I_C = 2A$ $V_{CC} = 40V$ $I_{B1} = 0.2mA$			200	ns
t_s	Storage Time $I_C = 2A$ $V_{CC} = 40V$			2.5	μs
t_f	Fall Time $I_{B1} = - I_{B2} = 0.2A$			200	ns

* Pulse test $t_p = 300\mu s$, Duty Cycle 1.5%