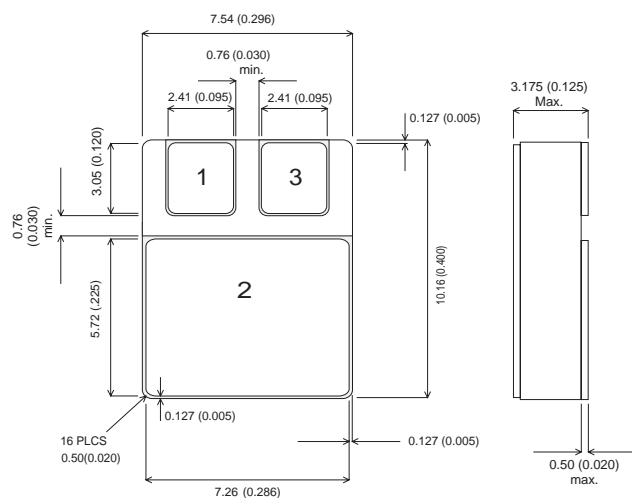


MECHANICAL DATA

Dimensions in mm (inches)



SMD05 (TO-276AB)

Underside View

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

**HIGH SPEED
MEDIUM VOLTAGE
SWITCH**

DESCRIPTION

The 2N5154XSMD05 is a silicon epitaxial planar NPN transistors in a Ceramic Surface Mount Package for use in Switching and Linear applications.

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 ($I_B = 0$)	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 $T_{amb} = 25^{\circ}C$	1W
	$T_{case} = 50^{\circ}C$	10W
	$T_{case} = 100^{\circ}C$	6.7W
T_{stg}	Operating and 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.

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ 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	$V_{CE} = 60V$ $T_{case} = 150^{\circ}C$ $V_{BE} = -2V$			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	
	$T_C = -55^{\circ}C$	25			
h_{FE}^* DC Current Gain	$I_C = 5A$ $V_{CE} = 5V$	30			
	$I_E = 0$ $V_{CB} = 10V$ $f = 1MHz$			250	pF
h_{FE} Small Signal Current Gain	$I_C = 0.1A$ $V_{CE} = 5V$ $f = 1KHz$	50			—
	$I_C = 0.5A$ $V_{CE} = 5V$ $f = 20MHz$	3.5			
t_{on} Turn On Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = 0.5A$		0.5		μs
t_{off} Turn Off Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 0.5A$		1.3		

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$