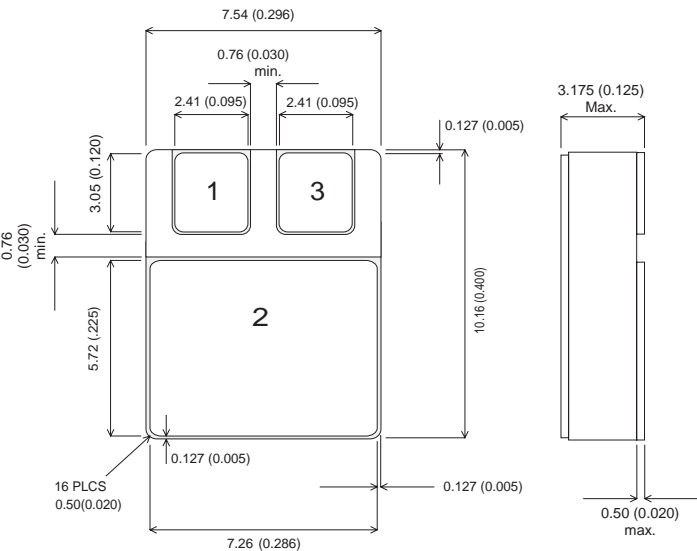


MECHANICAL DATA

Dimensions in mm (inches)



NPN BIPOLAR TRANSISTOR IN A CERAMIC SURFACE MOUNT PACKAGE FOR HIGH REL APPLICATIONS

FEATURES

- HIGH VOLTAGE
- FAST SWITCHING
- CERAMIC SURFACE MOUNT PACKAGE
- SCREENING OPTIONS AVAILABLE

SMD05 (TO-276AA)

Underside View

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

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}	Emiiter– Base Voltage (I _B = 0)	6V
I _B	Base Current	2A
I _C	Collector Current	4A
T _J , T _{STG}	Operating and Storage Junction Temperature Range	–55 to +150°C
P _D	Total Device Dissipation @ T _C = 25°C	25W
	Derate above 25°C	5°C/W

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
$V_{(BR)CEO}$	Collector Emitter Breakdown Voltage ¹	$I_C = 100\text{mA}$	$I_B = 0$	80			V
I_{CEX}	Collector Cutoff Current	$V_{CE} = 100\text{V}$	$V_{BE} = 1.5\text{V}$			100	μA
		$V_{CE} = 70\text{V}$	$V_{BE} = 1.5\text{V}$			1.0	mA
			$T_A = 150^{\circ}\text{C}$				
I_{EBO}	Emitter Base Cutoff Current	$V_{EB} = 6\text{V}$	$I_C = 0$			0.75	
I_{CEO}	Collector Emitter Cutoff Current	$V_{CE} = 80\text{V}$	$I_B = 0$			0.7	
I_{CBO}	Collector Base Cutoff Current	$V_{CB} = 100\text{V}$	$I_E = 0$			0.1	
ON CHARACTERISTICS							
h_{FE}	DC Current Gain	$I_C = 50\text{mA}$	$V_{CE} = 5\text{V}$	30			—
		$I_C = 500\text{mA}$	$V_{CE} = 5\text{V}$	40		160	
		$I_C = 1.0\text{A}$	$V_{CE} = 10\text{V}$	20			
$V_{CE(sat)}$	Collector Emitter Saturation Voltage	$I_C = 1.0\text{A}$	$I_B = 0.1\text{A}$			2.5	V
V_{BE}	Base Emitter Voltage	$I_C = 1.0\text{A}$	$V_{CE} = 10\text{V}$			1.5	
TRANSIENT CHARACTERISTICS							
f_T	Transistion Frequency	$V_{CE} = 10\text{V}$	$I_C = 500\text{mA}$ $f = 10\text{MHz}$			10	MHz
C_{OB}	Common Base Output Capacitance	$V_{CB} = 10\text{V}$	$I_C = 0\text{A}$ $f = 100\text{KHz}$			50	pF
h_{fe}	Small Signal Current Gain	$V_{CE} = 10\text{V}$	$I_C = 100\text{mA}$ $f = 1.0\text{kHz}$	40			—

- 1) Pulse test : Pulse Width $< 100\mu\text{s}$,Duty Cycle $< 1\%$
- 2) f_t is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

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