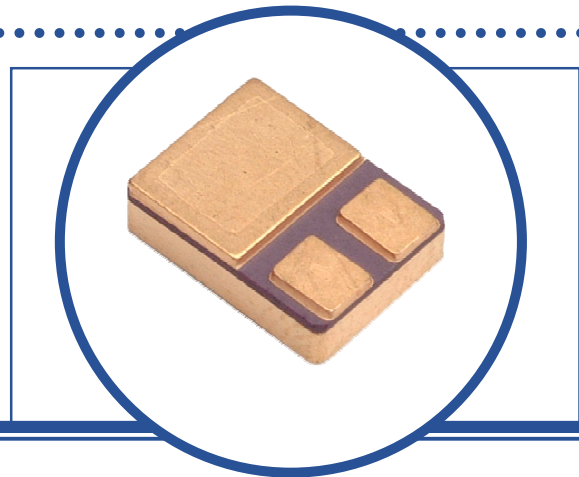


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

BDS16SMD05 / BDS17SMD05

- High Voltage
- Hermetic SMD05 (TO-276AA) Isolated Metal Package
- Ideally suited for Power Linear, Switching and general Purpose Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

		BDS16	BDS17
V_{CBO}	Collector – Base Voltage ($I_E = 0$)	120V	150V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	120V	150V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)		5V
I_E, I_C	Emitter, Collector Current		8A
I_B	Base Current		2A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$		43.75W
T_J	Junction Temperature Range		+200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	4.0	°C/W

Semelab Limited 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.

SILICON PLANAR EPITAXIAL NPN TRANSISTOR BDS16SMD05 / BDS17SMD05

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CBO}	Collector Cut-Off Current ($I_E = 0$)	BDS16 $V_{CB} = 120\text{V}$			20	μA
		BDS17 $V_{CB} = 150\text{V}$				
I_{CEO}	Collector Cut-Off Current ($I_B = 0$)	BDS16 $V_{CE} = 60\text{V}$			0.1	mA
		BDS17 $V_{CE} = 75\text{V}$			0.1	
I_{EBO}	Emitter Cut-Off Current ($I_C = 0$)	$V_{EB} = 5\text{V}$			10	μA
$V_{CEO(sus)}^{(1)}$	Collector – Emitter Sustaining Voltage ($I_B = 0$)	BDS16 $I_C = 100\text{mA}$	120			V
		BDS17 $I_C = 100\text{mA}$	150			
$V_{CE(sat)}^{(1)}$	Collector – Emitter Saturation Voltage	$I_C = 4.0\text{A}$ $I_B = 0.4\text{A}$			1.5	V
		$I_C = 0.5\text{A}$ $I_B = 0.05\text{A}$			0.4	
$V_{BE(on)}^{(1)}$	Base-Emitter Voltage	$I_C = 1.0\text{A}$ $V_{CE} = 2.0\text{V}$			1.0	V
$h_{FE}^{(1)}$	DC Current Gain	$I_C = 0.5\text{A}$ $V_{CE} = 2.0\text{V}$	40		250	
		$I_C = 4\text{A}$ $V_{CE} = 2.0\text{V}$	15		150	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 0.5\text{A}$ $V_{CE} = 10\text{V}$ $F = 20\text{MHz}$	30			MHz
t_{on}	Turn-On Time	$I_C = 2\text{A}$ $V_{CC} = 80\text{V}$ $I_{B1} = 0.2\text{A}$			0.5	μs
t_s	Storage Time	$I_C = 2\text{A}$ $V_{CC} = 80\text{V}$			2.0	
t_f	Fall Time	$I_{B1} = -I_{B2} = 0.2\text{A}$			0.3	

Notes

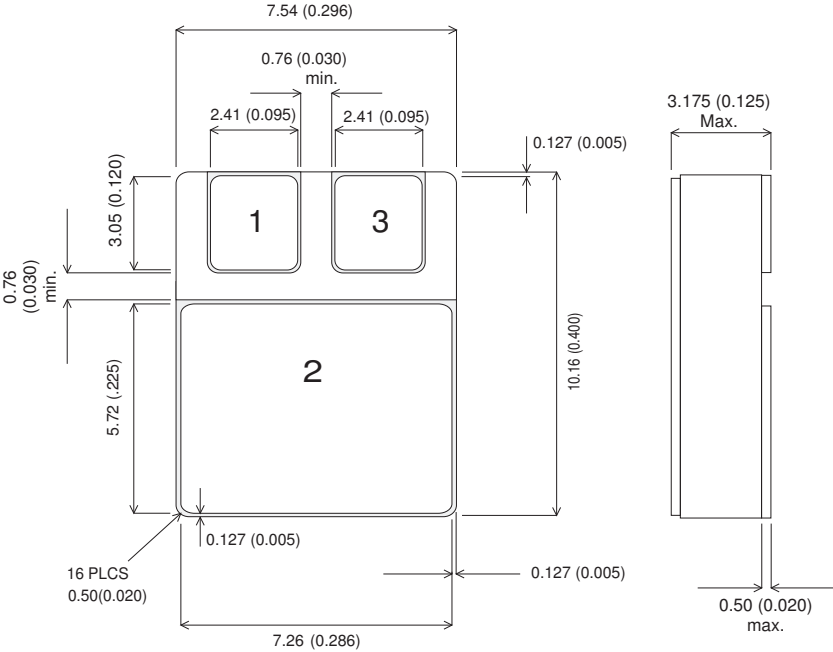
(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 1.5\%$

SILICON PLANAR EPITAXIAL NPN TRANSISTOR BDS16SMD05 / BDS17SMD05



MECHANICAL DATA

Dimensions in mm (inches)



SMD05 (TO-276AA)

Underside View

Pad 1 – Base Pad 2 – Collector Pad 3 - Emitter