

SILICON EPIBASE PNP DARLINGTON TRANSISTOR

BDS21SMD

- High DC Current Gain
- Hermetic Ceramic Surface Mount Package
- Designed For General Purpose Amplifiers and Low Speed Switching Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	-80V
V_{CEO}	Collector – Emitter Voltage	-80V
V_{EBO}	Emitter – Base Voltage	-5V
I_C	Continuous Collector Current	-5A
I_B	Base Current	-0.1A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°C	35W 0.2W/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to $+200^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to $+200^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			5	$^\circ\text{C/W}$

** This datasheet supersedes document 7603

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I _{CBO}	Collector-Cut-Off Current	V _{CB} = -80V I _E = 0			-0.2	mA
		V _{CB} = -60V I _E = 0 T _C = 150°C			-1.0	
I _{CEO}	Collector-Cut-Off Current	V _{CE} = -40V I _B = 0			-0.5	
I _{EBO}	Emitter-Cut-Off Current	V _{EB} = -5V I _C = 0			-2	
h _{FE} ⁽¹⁾	Forward-current transfer ratio	I _C = -0.5A V _{CE} = -3V	1000			
		I _C = -3A V _{CE} = -3V	1000			
V _{CE(sat)} ⁽¹⁾	Collector-Emitter Saturation Voltage	I _C = -3A I _B = -12mA			-2	V
		I _C = -5A I _B = -20mA			-4	
V _{BE(sat)} ⁽¹⁾	Base-Emitter Saturation Voltage	I _C = -5A I _B = -20mA			-2.8	
V _{BE(on)} ⁽¹⁾	Base-Emitter On Voltage	I _C = -3A V _{CE} = -3V			-3.5	

DYNAMIC CHARACTERISTICS

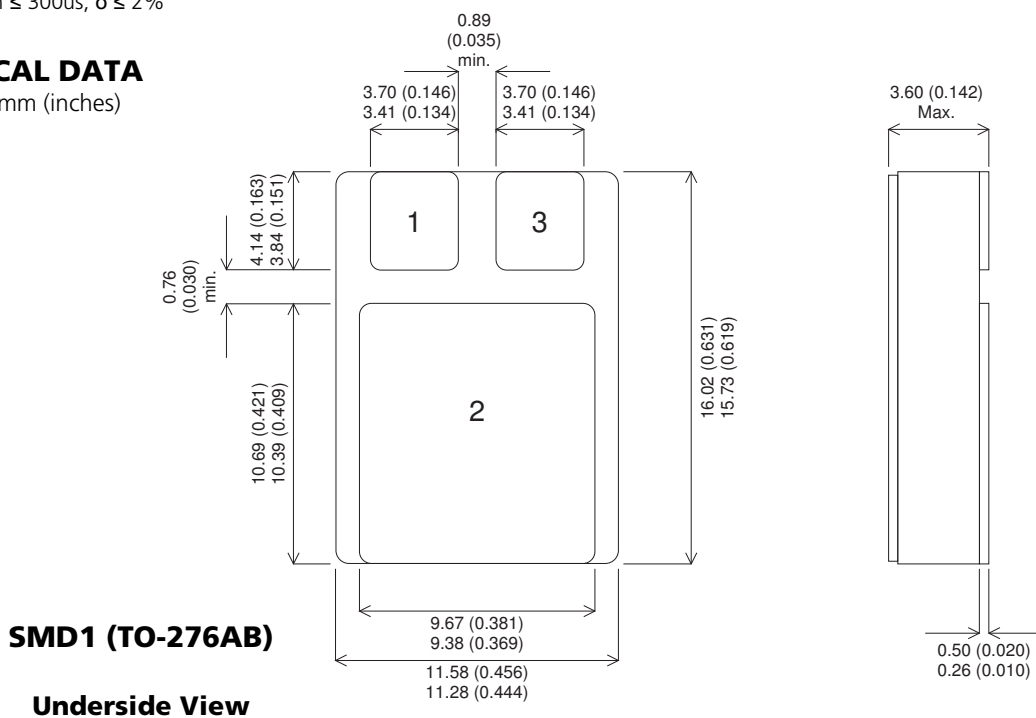
f _T	Transition Frequency	I _C = -0.5A V _{CE} = -4V f = 2MHz	8			MHz
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Notes

(1) Pulse Width ≤ 300us, δ ≤ 2%

MECHANICAL DATA

Dimensions in mm (inches)



Pad 1 – Base

Pad 2 – Collector

Pad 3 - Emitter