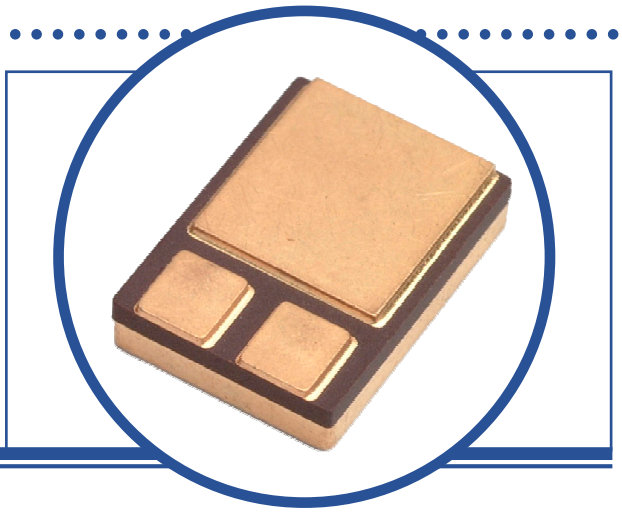
SILICON EPIBASE NPN DARLINGTON TRANSISTOR

TT electronics
Semelab Limited

BDS20SMD

- 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°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°C	35W
		Derate Above 25°C	0.2W/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			5	°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	

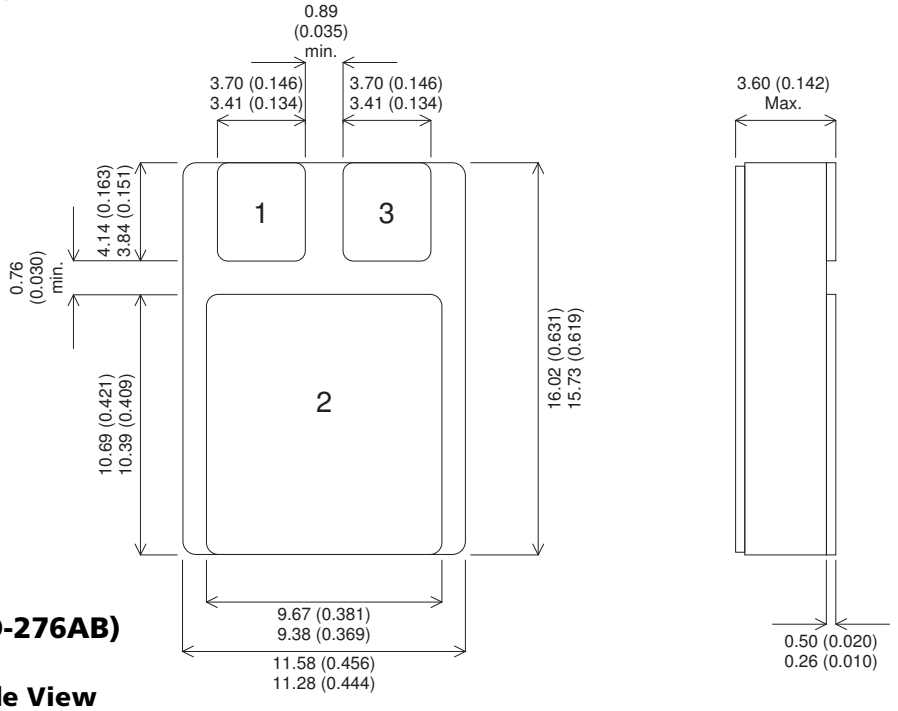
DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	I_C = 0.5A f = 2MHz	V_{CE} = 4V	8			MHz

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

MECHANICAL DATA

Dimensions in mm (inches)



SMD1 (TO-276AB)

Underside View

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