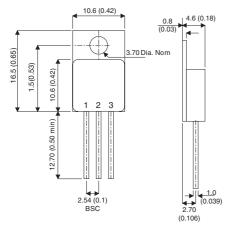


BDS10 BDS10SMD BDS10SMD05 BDS11 BDS11SMD BDS11SMD05 BDS12 BDS12SMD BDS12SMD05

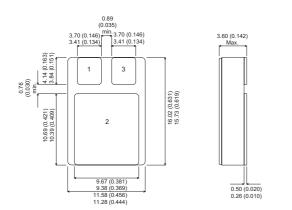
SILICON NPN EPITAXIAL BASE IN TO220 METAL AND CERAMIC SURFACE MOUNT PACKAGES

MECHANICAL DATA

Dimensions in mm(inches)



TO220M - TO220 Metal Package - Isolated (TO-257AB)



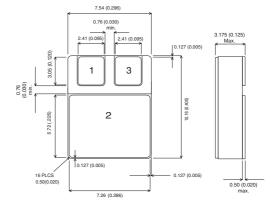
SMD1 - Ceramic Surface Mount Package (TO-276AB)

FEATURES

- HERMETIC METAL OR CERAMIC PACKAGES
- HIGH RELIABILITY
- MILITARY AND SPACE OPTIONS
- SCREENING TO CECC LEVELS
- FULLY ISOLATED (METAL VERSION)

APPLICATIONS

- POWER LINEAR AND SWITCHING APPLICATIONS
- GENERAL PURPOSE POWER



SMD05 - Ceramic Surface Mount Package (TO-276AA)

Pin 1 – Base Pin 2 – Collector Pin 3 – Emitter

ABSOLUTE MAXIMUM RATINGS (T _{case} =25°C unless otherwise stated)			BDS11	BDS12
.,	0 11	60V	80V	100V
V_{CBO}	Collector - Base voltage (I _E = 0)	60V	80V	100V
V_{CEO}	Collector - Emitter voltage $(I_B = 0)$		l _{5V}	
V_{EBO}	Emitter - Base voltage $(I_C = 0)$	15A		
I_{E} , I_{C}	Emitter, Collector current		5A	
I_{B}	Base current	43.75W -65 to 200°C		
P_{tot}	Total power dissipation at T _{case} = 25°C			
T_{stg}	Storage Temperature		200°C	-
T_j	Junction Temperature		200 0	

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.

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BDS10 BDS11 **BDS12**

BDS10SMD BDS11SMD BDS12SMD

BDS10SMD05 BDS11SMD05 BDS12SMD05

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

	Parameter	Test Co	onditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector cut-off current (I _E = 0)	BDS10	$V_{CB} = 60V$			500	
		BDS11	$V_{CB} = 80V$			500	μΑ
		BDS12	$V_{CB} = 100V$			500	
I _{CEO}	Collector cut-off current (I _B = 0)	BDS10	$V_{CE} = 30V$			1.0	
		BDS11	$V_{CE} = 40V$			1.0	mA
		BDS12	$V_{CE} = 50V$			1.0	
I _{EBO}	Emitter cut-off current $(I_C = 0)$	V _{EB} = 5V				1.0	mA
V _{CEO(sus)*}	Collector - Emitter sustaining voltage (I _B = 0)	BDS10		60			
		BDS11	$I_C = 100 \text{mA}$	80			V
		BDS12		100			
V _{CE(sat)*}	Collector - Emitter	I _C = 5A	$I_{B} = 0.5A$			1.0	V
	saturation voltage	I _C = 10A	$I_{B} = 2.5A$			3	V
V	Base - Emitter	I _C = 10A	I _B = 2.5A			2.5	V
V _{BE(sat)*}	saturation voltage					2.5	v
V _{BE*}	Base - Emitter voltage	I _C = 5A	$V_{CE} = 4V$			1.5	V
		$I_{\rm C} = 0.5A$	$V_{CE} = 4V$	40		250	
h _{FE*}	DC Current Gain	I _C = 5A	$V_{CE} = 4V$	15		150	
		I _C = 10A	$V_{CE} = 4V$	5			
f _T	Transition frequency	$I_{\rm C} = 0.5 A$	$V_{CE} = 4V$	3			MHz
		f = 1MHz		J			

^{*}Pulsed : Pulse duration = 300 μ s , duty cycle = 1.5%

SWITCHING CHARACTERISTICS

	Parameter	Test Conditions	Max.	Unit
t _{on}	On Time $(t_d + t_r)$	$I_C = 4A$ $V_{CC} = 30V$ $I_{B1} = 0.4A$	0.7	μs
t _s	Storage Time	$I_C = 4A$ $V_{CC} = 30V$	1.0	μs
t _r	Fall Time	$I_{B1} = -I_{B2} = 0.4A$	0.8	μs

THERMAL CHARACTERISTICS

	Test Conditions	Max.	Unit
$R_{\theta J-C}$	Thermal Resistance Junction to Case	4.0	°C/W

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