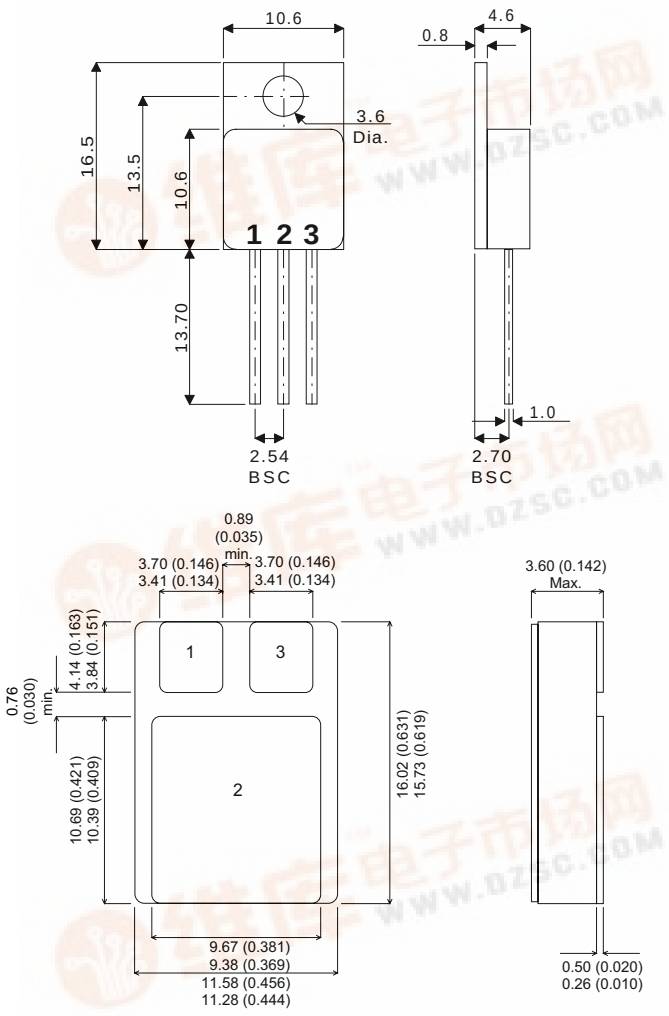
SEME LAB

BDS18 BDS18SMD
BDS19 BDS19SMD

MECHANICAL DATA
Dimensions in mm



SILICON PNP EPITAXIAL BASE IN TO220 METAL AND SMD1 CERAMIC SURFACE MOUNT PACKAGES

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

TO220M - TO220 Metal Package - Isolated
SMD1 - SMD1 Ceramic Surface Mount Package

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

ABSOLUTE MAXIMUM RATINGS (T_{case}=25°C unless otherwise stated)

		BDS18	BDS19
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_{tot}	Total power dissipation at $T_{case} \leq 75°C$	50W	
T_{stg}	Storage Temperature	–65 TO 200°C	
T_j	Junction Temperature	200°C	

SEME LAB

BDS18 BDS18SMD
BDS19 BDS19SMD

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current (I_E = 0)	**BDS18**	V_{CB} = –120V			–20	µA
		BDS19	V_{CB} = –150V			–20	
I_{CEO}	Collector cut-off current (I_B = 0)	**BDS18**	V_{CE} = –60V			–0.1	mA
		BDS19	V_{CE} = –75V			–0.1	
I_{EBO}	Emitter cut-off current (I_C = 0)	V_{EB} = –5V				–10	µA
$V_{CEO(sus)*}$	Collector - Emitter sustaining voltage (I_B = 0)	**BDS18**	I_C = –100mA	–120			V
		BDS19		–150			
$V_{CE(sat)*}$	Collector - Emitter saturation voltage	I_C = –1A	I_B = –0.1A			–0.5	V
							V
$V_{BE(on)*}$	Base - Emitter voltage	I_C = –1A	V_{CE} = –2V			–1.0	V
h_{FE*}	DC Current gain	I_C = –0.5A	V_{CE} = –2V	40		250	
		I_C = –4A	V_{CE} = –2V	15		150	
f_T	Transition frequency	I_C = –0.5A	V_{CE} = –10V	30			MHz

*Pulsed : Pulse duration = 300 µs , duty cycle = 1.5%

SWITCHING CHARACTERISTICS

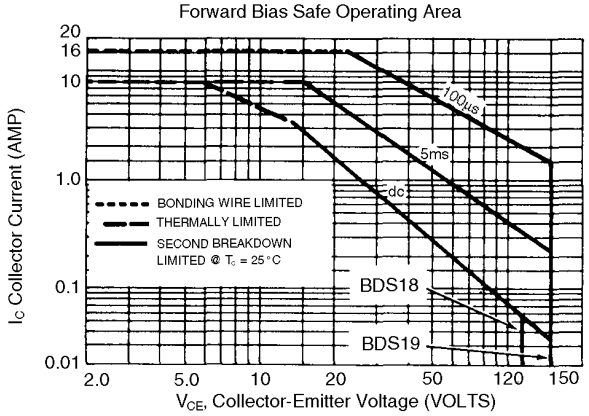
	Parameter	Test Conditions	Max.	Unit
t_{on}	On Time (t_d + t_r)	I_C = 2A V_{CC} = –80V I_{B1} = 0.2A	0.5	µs
t_s	Storage Time	I_C = 2A V_{CC} = –80V I_{B1} = –I_{B2} = 0.2A	1.5	µs
t_f	Fall Time		0.3	µs

THERMAL DATA

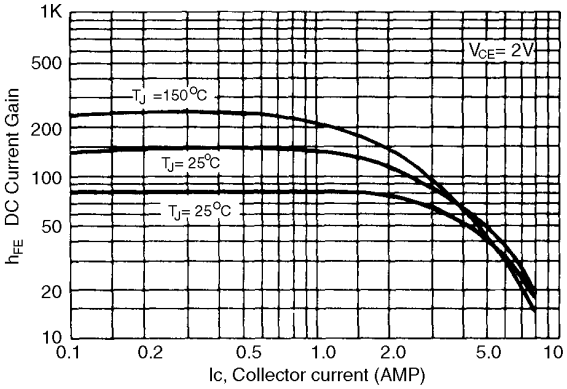
$R_{THj\text{-}case}$	Thermal resistance junction - case	Max. 2.5°C/W
$R_{THj\text{-}a}$	Thermal resistance junction - ambient	Max. 62.5°C/W

BDS18 BDS18SMD
BDS19 BDS19SMD

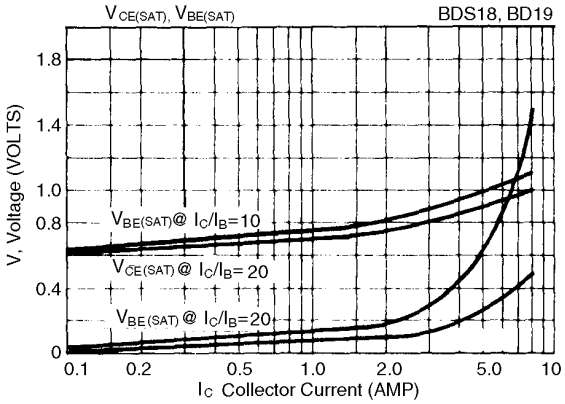
Forward Bias Safe Operating Area



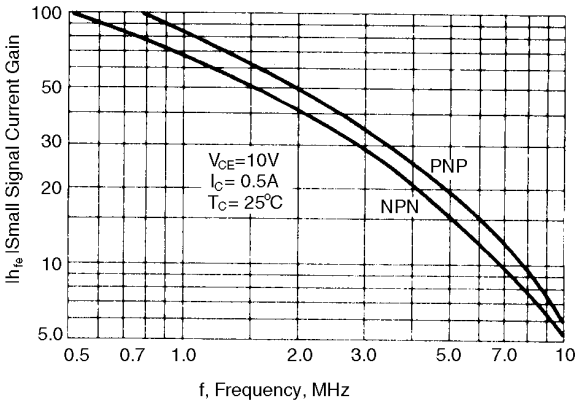
DC Current Gain - BDS18, BDS19



VCE(SAT), VBE(SAT) BDS18, BD19



Small Signal Current Gain



Turn - off Times