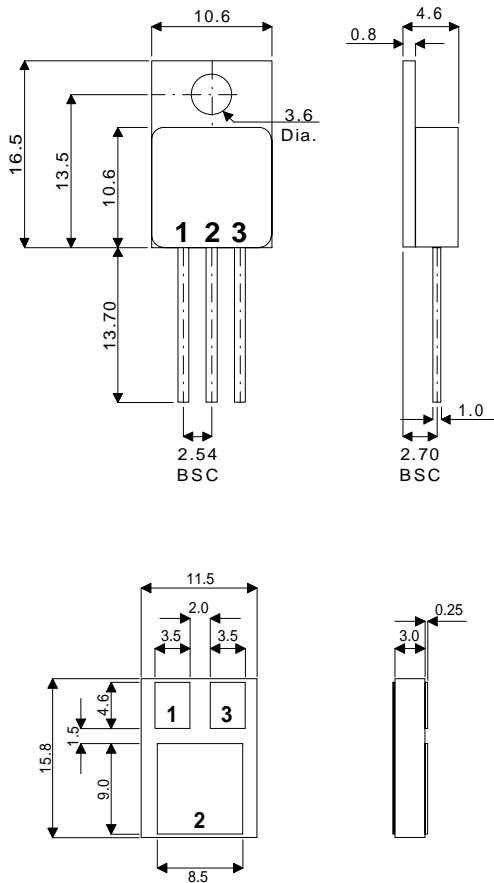


MECHANICAL DATA
Dimensions in mm



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

FEATURES

- HERMETIC TO220 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
TO220SM - TO220 Ceramic Surface Mount Package

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

ABSOLUTE MAXIMUM RATINGS ($T_{case}=25^{\circ}C$ 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_{tot}	Total power dissipation at $T_{case} \leq 75^{\circ}C$		50W
T_{stg}	Storage Temperature		-65 TO 200°C
T_j	Junction Temperature		200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current ($I_E = 0$)	BDS16 $V_{CB} = 120V$ BDS17 $V_{CB} = 150V$		20	μA
I_{CEO}	Collector cut-off current ($I_B = 0$)	BDS16 $V_{CE} = 60V$ BDS17 $V_{CE} = 75V$		0.1	mA
I_{EBO}	Emitter cut-off current ($I_C = 0$)	$V_{EB} = 5V$		10	μA
$V_{CEO(sus)^*}$	Collector - Emitter sustaining voltage ($I_B = 0$)	BDS16 $I_C = 100mA$ BDS17	120 150		V
$V_{CE(sat)^*}$	Collector - Emitter saturation voltage	$I_C = 1A$ $I_B = 0.1A$		0.5	V
$V_{BE(on)^*}$	Base - Emitter voltage	$I_C = 1A$ $V_{CE} = 2V$		1.0	V
h_{FE}^*	DC Current gain	$I_C = 0.5A$ $V_{CE} = 2V$ $I_C = 4A$ $V_{CE} = 2V$	40 15	250 150	
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 ($t_d + t_r$)	0.5	μs
t_s	Storage Time	3.0	μs
t_f	Fall Time	0.4	μs

THERMAL DATA

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