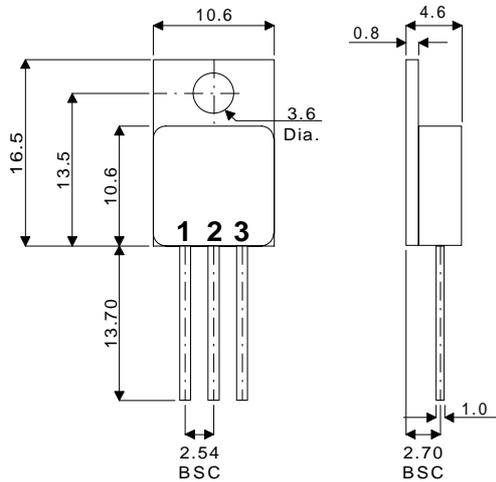
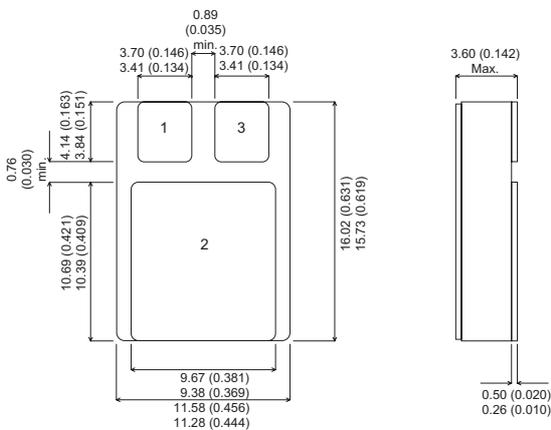


MECHANICAL DATA

Dimensions in mm



TO220M - TO220 Metal Package - Isolated
Pin 1 – Base Pin 2 – Collector Pin 3 – Emitter



SMD1(TO276AB)- Ceramic Surface Mount Package
Pad 1 – Base Pad 2 – Collector Pad 3 – Emitter

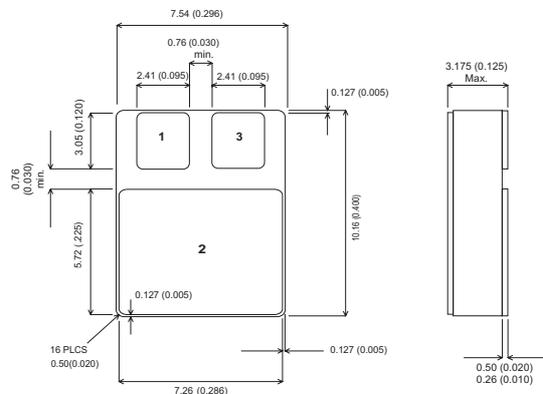
**SILICON NPN EPITAXIAL BASE
 IN TO220 METAL AND
 SMD CERAMIC SURFACE MOUNT
 PACKAGES**

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



SMD05 (TO276AA)- Ceramic Surface Mount Package
Pad 1 – Base Pad 2 – Collector Pad 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

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.

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 20	μA
I_{CEO} Collector cut-off current ($I_B = 0$)	BDS16 $V_{CE} = 60V$			0.1 0.1	mA
I_{EBO} Emitter cut-off current ($I_C = 0$)	BDS17 $V_{CE} = 75V$ $V_{EB} = 5V$			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	$I_C = 4A$ $I_B = 0.4A$			1.5	V
	$I_C = 0.5A$ $I_B = 0.05A$			0.4	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	$I_C = 0.5A$ $V_{CE} = 10V$ $F = 20MHz$	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

$R_{THj-case}$	Thermal resistance junction - case	Max. 2.5 $^{\circ}C/W$
R_{THj-a}	Thermal resistance junction - ambient(TO-220 only)	Max. 62.5 $^{\circ}C/W$