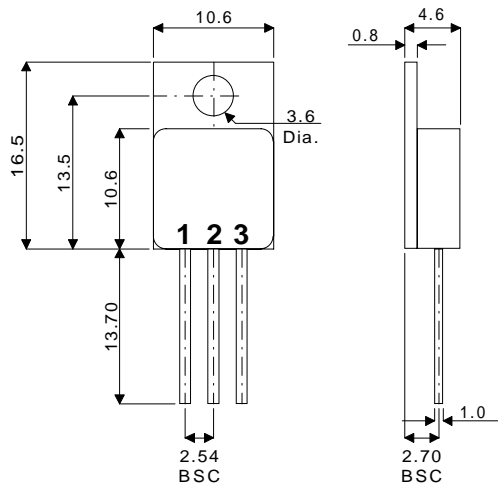
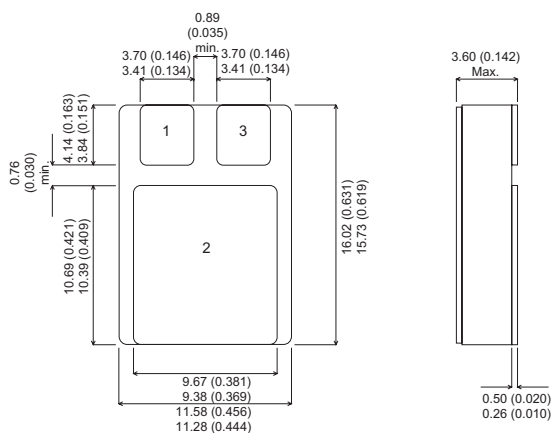


MECHANICAL DATA

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

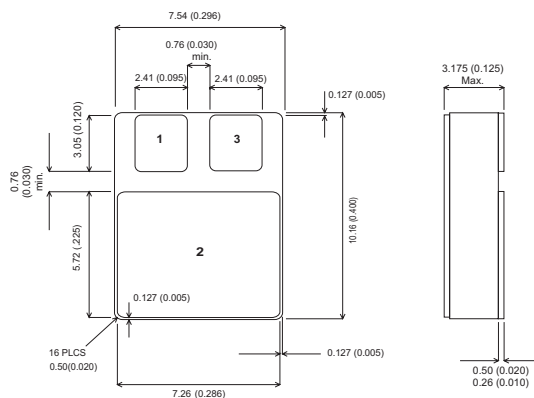
SILICON NPN EPITAXIAL BASE IN TO220 METAL AND SMD CERAMIC SURFACE MOUNT PACKAGES

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. $62.5^{\circ}C/W$