

GERMANIUM NPN TRANSISTORS

Type	V_{CBO} V Max	V_{EBO} V Max	V_{CE} V Max		I_{CBO} @ V_{CB} V μA Max	h_{FE} Typical	@ I_C mA	C_{ob} pf Max	fab MHZ Min	Pack Outline	Power Dissipation @25°C MW
NPN											
2N356A	30	20	20		30	5	20	100		TO-5	150
2N357	20	20	15		20	5	45	1.0		TO-5	100
2N357A	30	20	20		30	5	25	200	14'	TO-5	150
2N358	20	20	12		20	5	60	1.0		TO-5	100
2N358A	30	20	15		30	5	25	300	14'	TO-5	150
2N358A	30	20	15		30	25	25	300		TO-5	150
2N366	30	2	2		30	10	65	1.0	4.5	OV9	150
2N377	25	15	20		25	10	40	30	20	TO-5	150
2N377A	40	15			40	20	20	30	20	TO-5	150
2N385	25	15	25		25	10	60	30	20	TO-5	150
2N385A	40	15	15		40	40	70	30	20	TO-5	150
2N388	20	15	20		20	10	150	30	20	TO-5	150
2N388	25	15	20		25	10	60	30	20	TO-5	150
2N388A	40	15			40	10	60	30	20	TO-5	150
2N438	30	25	25		30	10	25	1.0	9'	TO-5	100
2N438A	30	25	25		30	10	25	1.0	9'	TO-5	150
2N439	30	25	20		30	10	35	1.0	9'	TO-5	100
2N439A	30	25	20		30	10	35	1.0	9'	TO-5	150
2N440	30	25	15		30	10	65	1.0	9'	TO-5	100
2N440A	30	25	15		30	10	65	1.0	9'	TO-5	150
2N444	15		15		15	2	15	1.0	13'	TO-5	100
2N444A	40	10	25		40	5	15	1.0		TO-5	150
2N445	15		12		15	2	35	1.0	13'	TO-5	100
2N446	30	10	18		30	4	35	1.0		TO-5	150
2N446A	30	10	15		30	4	60	1.0	5.0	TO-5	150
2N447A	30	10	12		30	4	85	1.0		TO-5	150
2N587	40	40	20		40	50	20	200	30	TO-5	150
2N634	20	15	15		20	5	15	200		TO-5	150
2N534A	25	25	20		25	6	55	10	12'	TO-5	150
2N635	20	15	15		20	5	25	200	12.0	TO-5	150
2N635A	25	25	20		25	6	100	10	12'	TO-5	150
2N636	20	15	15		20	5	35	200		TO-5	150
2N636A	25	25	15		25	6	190	10	12'	TO-5	150
2N1302	25	25	25		25	6	20	10	20	TO-5	150
2N1302	25	25	25		25	6	20	10	20	TO-5	150
2N1304	25	25	20		25	6	40-200	10	20	TO-5	150
2N1304	25	25	20		25	6	40-200	10	20	TO-5	150
2N1306	25	25	15		25	6	60-300	10	20	TO-5	150
2N1306	25	25	15		25	6	60-300	10	20	TO-5	150
2N1308	25	25	15		25	6	80	10	20	TO-5	150
2N1308	25	25	15		25	6	80-400	10	20	TO-5	150
2N1605	25	12	2Y		25	5	125	20	20	TO-5	150
2N1605A	40	12			40	10	60	20	20	TO-5	200
2N1730	25	20	15		25	6	30	100	20	TO-5	150
2N1732	30	25	30		30	6	40	10	20	TO-5	150
2N1808	25	20	25		25	5	125	20	13'	TO-5	150
2N1892	30	25	15		30	6	30	2	20	TO-5	150
2N1993	30	30	15		30	10	50	10	20	TO-5	150
2N2430	32	10	32		32	10	105	50	90	TO-1	280

Type	V_{CBO} V Max	V_{EBO} V Max	V_{CE} V Max		I_{CBO} @ V_{CB} V μA Max	h_{FE} Min Max	@ I_C mA	C_{ob} pf Max	fab MHZ Min	Pack Outline	Power Dissipation @25°C MW
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GERMANIUM PNP MESA TRANSISTORS

2N705	15	3.5			5	3.0	25-	10		300	TO-18 ^{1,2}	300
2N705A	15	3.5			5	3.0	25-	10			TO-18 ¹	150
2N710	15	1.0			1	3.0	25-	10		300	TO-18 ¹	300
2N711	12	1.0	12		5	3.0	20-	10	7.5	150	TO-18 ¹	150
2N711A	15	1.5	7		5	1.5	25-	10	6.0	150	TO-18 ¹	150
2N711B	18	2.0	7		10	1.5	30-	10	6.0	150	TO-18 ¹	150
2N827	20	4.0			15	5.0	100-	10	9.0		TO-18 ¹	150
2N828	18	2.5			6	3.0	25-	10		300	TO-18 ¹	300

CASE OUTLINE DRAWINGS & DIMENSIONS

Technical drawing of a mechanical part showing front and top views with dimensions.

Front View Dimensions:

- Overall width: .335
- Top width: .370
- Inner width: .305
- Inner width: .335
- Right side height: .260
- Right side height: .240
- Left side height: .009
- Left side height: .125
- Bottom flange height: .019
- Bottom flange height: .016
- Minimum length: 1.50 MIN

Top View Dimensions:

- Overall width: .200
- Right side width: .100
- Inner width: .029
- Inner width: .045
- Bottom left width: .034
- Bottom left width: .028
- Angle: 45°

Technical drawing of a hex head bolt. The drawing includes a side view at the top and an end view at the bottom. Key dimensions and callouts are as follows:

- Side View Dimensions:**
 - UNDERCUT 1.0" $\pm .093 \pm .010$
 - Hex head height: $.500 \pm .015$ MAX.
 - Thread length: 1.500 MIN.
 - Thread pitch: 1/2 20 UNF 2A
 - Minor diameter of thread: $.025 \pm .003$
 - Hex head width (across flats): $1.00 \pm .010$
- End View Dimensions:**
 - Hex head width (across flats): $.875$ MAX.
 - Hex head width (across corners): $.750 \pm .010$
 - Inner hole diameter: $.100 \pm .010$
 - Second hole diameter: $.200 \pm .010$
 - Callouts A, B, and C point to specific features on the end view.
- Notes:**
 - NOTE 1: THREAD RELIEF IS .090 MAX. BY .430 DIA. NOMINAL

Technical drawing of a mechanical part, showing front and top views with dimensions.

Front View Dimensions:

- Top width: .875 MAX.
- Top thickness: .250
- Shoulder thickness: .450
- Base thickness: .560
- Base width: .500
- Base width at bottom: .581
- Internal hole diameter: .135 MAX.

Top View Dimensions:

- Overall width: 1.177
- Overall depth: .675
- Distance from center to hole center: .197
- Distance from center to hole center: .655
- Distance from center to hole center: .675
- Distance from center to hole center: .125
- Distance from center to hole center: .210
- Distance from center to hole center: .151
- Distance from center to hole center: .161
- Distance from center to hole center: .205
- Distance from center to hole center: .275
- Distance from center to hole center: .420
- Distance from center to hole center: .440
- Distance from center to hole center: .188 R MAX.
- Distance from center to hole center: .525 MAX. RAD.

Technical drawing of a transistor package showing side and top views with dimensions.

Side View Dimensions:

- Overall width: 1.250 DIA. MAX.
- Base diameter: 1.005 DIA. MAX.
- Base thickness: .210
- Base to emitter distance: .180
- Emitter diameter: .360 MAX.
- Emitter to base distance: .500
- Emitter to base distance (alternative): .375
- Emitter to base distance (alternative): .312
- Emitter to base distance (alternative): .210
- Emitter to base distance (alternative): .610 MAX.
- Emitter to base distance (alternative): .137
- Emitter to base distance (alternative): .123
- Emitter to base distance (alternative): .140 DIA. MAX.
- Emitter to base distance (alternative): .345 R
- Emitter to base distance (alternative): 10-32 UNF-2A

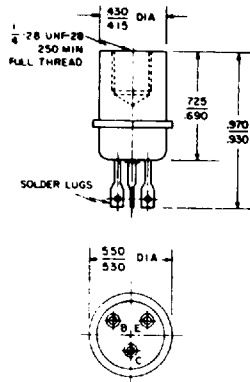
Top View Dimensions:

- Base diameter: 1.005 DIA. MAX.
- Base thickness: .210
- Base to emitter distance: .180
- Emitter diameter: .360 MAX.
- Emitter to base distance: .500
- Emitter to base distance (alternative): .375
- Emitter to base distance (alternative): .312
- Emitter to base distance (alternative): .210
- Emitter to base distance (alternative): .610 MAX.
- Emitter to base distance (alternative): .137
- Emitter to base distance (alternative): .123
- Emitter to base distance (alternative): .140 DIA. MAX.
- Emitter to base distance (alternative): .345 R
- Emitter to base distance (alternative): 10-32 UNF-2A

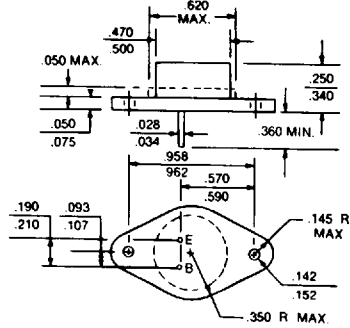
GERMANIUM POWER TRANSISTORS

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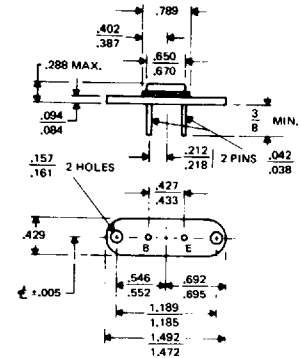
TO-13



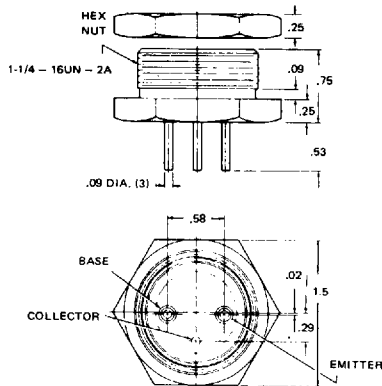
TO-66



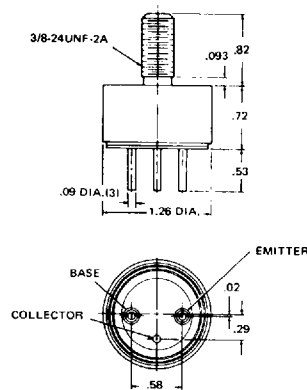
MS-7



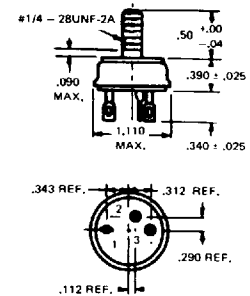
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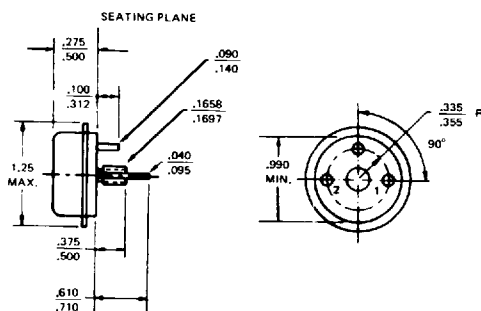
MT-23



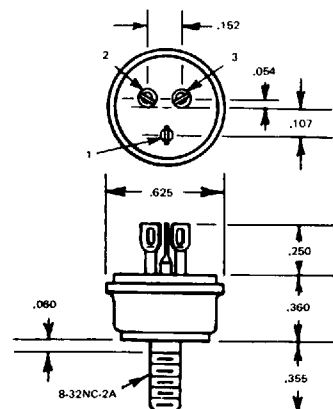
MT-7



TO-68



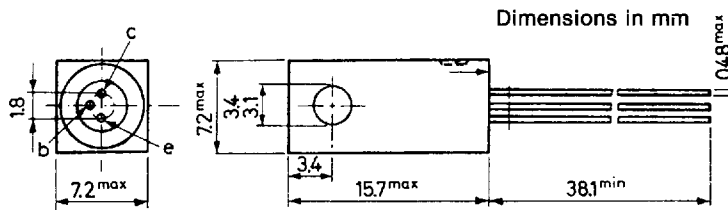
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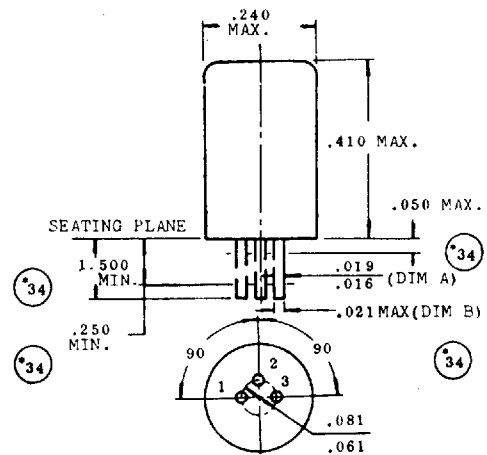
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CASE OUTLINE DRAWINGS & DIMENSIONS

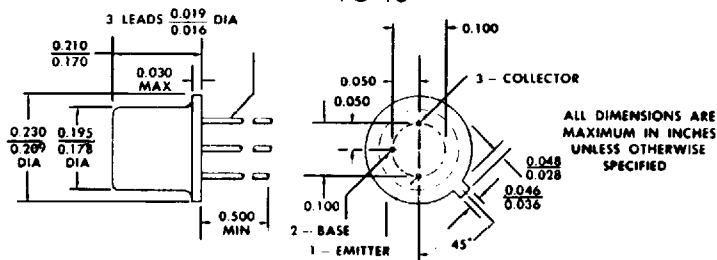
NS257



TO-1



TO-18



THE COLLECTOR IS ELECTRICAL CONTACT WITH THE CASE.

ALL JEDEC TO-18 DIMENSIONS AND NOTES ARE APPLICABLE.



GERMANIUM POWER DEVICES CORP.

300 Brickstone Square · York Street · P.O. Box 3065
Shawsheen Village Station · Andover, Massachusetts 01810
Telephone (508) 475-5982 · FAX (508) 470-1512

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