

## germanium transistors cont'd

### germanium power transistors

Type	Polarity	Power Dissipation @ 25°C (watts)	T <sub>J</sub> (°C)	BV <sub>CEO</sub> (volts)	BV <sub>CE-</sub> (volts)	h <sub>FE</sub> @ I <sub>C</sub>			V <sub>CE</sub> (SAT) @ I <sub>C</sub>		hf—	f <sub>T</sub> (KHz)	Case Style
						(Min.)	(Max.)	(Amps)	(volts)	(Amps)			
		NOTE 1		NOTE 2						NOTE 3		NOTE 4	
2N155	PNP	1.5 (A)	85	30	—	24	—	0.5	0.65	0.5	—	—	TO-3
2N156	PNP	1.5 (A)	85	30	—	24	—	0.5	0.6	0.5	—	—	TO-13
2N158	PNP	1.5 (A)	85	60	—	21	—	0.5	0.75	1.0	—	145 (B)	TO-13
2N158A	PNP	1.5 (A)	95	80	60 (O)	21	—	0.5	0.75	1.0	—	145 (B)	TO-13
2N173	PNP	10 (C)	95	60	50 (S)	35	70	5.0	1.0	12.0	—	4.0 (E)	TO-13 TO-36
2N174	PNP	100 (C)	95	80	70 (S)	25	50	5.0	0.9	12.0	—	—	TO-36
2N176	PNP	90 (C)	80	40	30 (R)	25	—	0.5	0.4	3.0	—	4.0 (E)	TO-3
2N234A	PNP	25 (C)	90	—	25 (R)	—	—	—	—	—	—	—	TO-3
2N235A	PNP	25 (C)	90	—	40 (U)	—	—	—	0.8	1.0	—	—	TO-3
2N235B	PNP	25 (C)	85	50	35 (R)	—	—	—	0.8	1.0	—	5.0 (E)	TO-3
2N236A	PNP	25 (C)	95	—	35 (R)	—	—	—	1.0	3.0	—	—	TO-3
2N236B	PNP	25 (C)	95	50	35 (R)	—	—	—	1.0	3.0	—	—	TO-3
2N242	PNP	20 (C)	85	45	45 (R)	—	—	—	—	—	—	5.0 (E)	TO-3
2N250	PNP	12 (C)	80	30	—	—	—	0.5	—	—	—	5.0 (B)	TO-3
2N250A	PNP	90 (C)	100	40	35 (V)	25	100	3.0	0.7	3.0	—	8.0 (E)	TO-3
												200 (T)	TO-3
2N251	PNP	12 (C)	80	60	—	30	—	0.5	—	—	—	—	TO-3
2N251A	PNP	90 (C)	100	60	55 (V)	25	100	3.0	0.7	3.0	—	8.0 (E)	TO-3
2N255	PNP	1.5 (A)	85	15	—	—	—	—	—	—	—	200 (T)	TO-3
2N255A	PNP	20 (C)	85	15	15 (R)	—	—	—	—	—	—	—	TO-3
2N256	PNP	1.5 (A)	85	30	—	—	—	—	—	—	—	—	TO-3
2N256A	PNP	20 (C)	85	30	25 (R)	—	—	—	—	—	—	—	TO-3
2N257	PNP	25 (C)	85	40	—	—	—	—	—	—	—	—	TO-3
2N268	PNP	25 (C)	85	80	—	—	—	—	—	—	—	7.0	TO-3
2N268A	PNP	10 (C)	90	80	60 (V)	20	—	2.0	1.0	2.0	—	6.0	TO-3
2N277	PNP	70 (C)	95	40	40 (S)	35	70	5.0	—	—	—	—	TO-3 TO-36
2N278	PNP	70 (C)	95	50	45 (S)	35	70	5.0	1.0	12	—	—	TO-36
2N285A	PNP	25 (C)	95	—	35 (R)	—	—	—	0.5	1.0	—	—	TO-3
2N285B	PNP	25 (C)	95	—	35 (R)	—	—	—	0.5	1.0	—	—	TO-3
2N296	PNP	20 (C)	85	60	—	19	—	1.0	1.0	1.0	—	—	TO-3
2N297	PNP	35 (C)	95	60	50 (S)	40	100	0.5	1.0	2.0	—	4.0 (B)	TO-3
												5.0 (E)	TO-3
2N297A	PNP	35 (C)	95	60	50 (S)	40	100	0.5	1.0	2.0	—	5.0 (E)	TO-3
2N301	PNP	11 (A)	85	40	—	—	—	—	—	—	—	—	TO-41
2N301A	PNP	11 (A)	85	60	—	—	—	—	—	—	—	—	TO-41
2N307	PNP	25 (C)	75	35	35 (R)	20	—	0.2	1.0	0.2	—	3.0 (E)	TO-3
2N307A	PNP	25 (C)	75	35	35 (R)	20	—	0.2	0.8	1.0	—	3.5 (E)	TO-3
2N350	PNP	10 (A)	100	50	40 (O)	20	60	0.7	—	—	—	—	TO-3
2N350A	PNP	90 (J)	100	50	40 (S)	20	60	0.7	1.75	3.0	—	5.0 (E)	TO-3
2N351	PNP	10 (A)	100	50	40 (O)	25	90	0.7	—	—	—	—	TO-3
2N351A	PNP	90 (J)	100	50	40 (S)	25	90	0.7	1.75	4.0	—	5.0 (E)	TO-3
2N375	PNP	58 (G)	95	80	60 (S)	35	90	1.0	1.0	2.0	—	7.0 (E)	TO-3
2N376	PNP	10 (A)	100	50	40 (O)	35	120	0.7	—	—	—	—	TO-3
2N376A	PNP	90 (J)	100	50	40 (S)	35	120	0.7	1.75	5.0	—	5.0 (E)	TO-3
2N378	PNP	50 (C)	100	20	—	40	80	2.0	1.0	2.0	—	5.0 (E)	TO-3
2N379	PNP	50 (C)	100	40	—	20	70	2.0	1.0	2.0	—	5.0 (E)	TO-3
2N380	PNP	50 (C)	100	30	—	30	70	2.0	1.0	2.0	—	5.0 (E)	TO-3
2N392	PNP	48 (C)	95	60	40 (R)	60	150	3.0	0.5	3.0	—	—	TO-3
2N399	PNP	25 (C)	90	—	35 (R)	—	—	—	1.0	1.2	—	—	TO-3
2N400	PNP	35 (C)	95	25	20 (O)	40	300	0.5	0.8	1.0	—	25 (E)	TO-3
2N401	PNP	25 (C)	90	—	35 (R)	—	—	—	1.0	1.2	—	—	TO-3
2N418	PNP	25 (C)	100	100	75 (R)	40	—	4.0	2.0	4.0	—	—	TO-3
2N419	PNP	35 (C)	95	25	20 (O)	50	350	0.5	0.8	1.5	25 (E)	3.0 (E)	TO-3
2N420	PNP	25 (C)	100	65	40 (R)	40	—	4.0	2.0	4.0	—	—	TO-3
2N420A	PNP	25 (C)	100	90	65 (R)	40	—	4.0	2.0	4.0	—	—	TO-3
2N441	PNP	50 (C)	95	40	40 (S)	20	40	5.0	—	—	—	—	TO-36
2N442	PNP	50 (C)	95	50	45 (S)	20	40	5.0	—	—	—	—	TO-36
2N443	PNP	50 (C)	95	60	50 (S)	20	40	5.0	1.0	12	—	—	TO-36
2N456	PNP	50 (C)	95	40	40 (X)	—	—	—	1.0	5.0	—	—	TO-3
2N456A	PNP	150 (C)	—	40	40 (O)	30	90	5.0	0.5	5.0	—	4.0 (E)	TO-3
2N456B	PNP	150 (C)	100	40	30 (O)	30	90	5.0	0.5	5.0	—	200 (T)	TO-3
2N457	PNP	50	95	60	60 (X)	—	—	—	1.0	5.0	—	—	TO-3
2N457A	PNP	150 (C)	—	60	60 (O)	30	90	5.0	0.5	5.0	—	4.0 (E)	TO-3
2N457B	PNP	150 (C)	100	60	40 (O)	30	90	5.0	0.5	5.0	—	200 (T)	TO-3
2N458	PNP	50	95	80	80 (X)	—	—	—	1.0	5.0	—	—	TO-3
2N458A	PNP	150 (C)	—	80	80 (O)	30	90	5.0	0.5	5.0	—	4.0 (E)	TO-3
2N458B	PNP	150 (C)	100	80	45 (O)	30	90	5.0	0.5	5.0	—	200 (T)	TO-3
2N511	PNP	150 (C)	—	40	—	20	60	10	0.5	10	—	260 (T)	TO-41
2N511A	PNP	150 (C)	—	60	—	20	60	10	0.5	10	—	260 (T)	TO-41
2N511B	PNP	150 (C)	—	80	—	20	60	10	0.5	10	—	260 (T)	TO-41
2N512	PNP	150 (C)	—	40	—	20	60	15	0.75	15	—	260 (T)	TO-41
2N512A	PNP	150 (C)	—	60	—	20	60	15	0.75	15	—	260 (T)	TO-41
2N512B	PNP	150 (C)	—	80	—	20	60	15	0.5	10	—	260 (T)	TO-41
2N513	PNP	150 (C)	—	40	—	20	60	20	1.25	20	—	300 (T)	TO-41
2N513A	PNP	150 (C)	—	60	—	20	60	20	1.25	20	—	260 (T)	TO-41
2N513B	PNP	150 (C)	—	80	—	20	60	20	0.5	10	—	260 (T)	TO-41
2N514	PNP	80 (C)	95	40	40 (X)	—	—	—	1.25	25	—	—	TO-41



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germanium transistors cont'd

germanium power transistors — (cont'd)

discrete devices

T-33-01

Type	Polarity	Power Dissipation @ 25°C (watts)	T <sub>J</sub> (°C)	BV <sub>CEO</sub> (volts)	BV <sub>CE(sat)</sub> (volts)	h <sub>FE</sub> @ I <sub>C</sub>			V <sub>CE (SAT)</sub> @ I <sub>C</sub>		hf—	f <sub>T</sub> (KHz)	Case Style
						(Min.)	(Max.)	(Amps)	(volts)	(Amps)			
		NOTE 1	NOTE 2							NOTE 3	NOTE 4		
2N514A	PNP	80 (C)	95	60	60 (X)	—	—	—	1.25	25	—	—	TO-41
2N514B	PNP	80 (C)	95	80	80 (X)	—	—	—	1.25	25	—	—	TO-41
2N538	PNP	34 (J)	95	80	60	—	—	—	—	—	—	—	MT-36
2N538A	PNP	34 (J)	95	80	60	20	50	2.0	0.6	2.0	—	—	MT-36
2N539	PNP	34 (J)	95	80	55	30	75	2.0	0.6	2.0	—	—	MT-36
2N539A	PNP	11 (J)	95	80	55	30	75	2.0	0.6	2.0	—	—	MT-36
2N540	PNP	34 (J)	95	80	55	45	113	2.0	0.6	2.0	—	—	MT-36
2N540A	PNP	34 (J)	95	80	55	45	113	2.0	0.6	2.0	—	—	MT-36
2N553	PNP	35 (C)	95	80	—	40	80	0.5	0.9	3.0	—	—	TO-3
2N554	PNP	40 (J)	90	—	—	—	—	—	—	—	—	—	TO-3
2N555	PNP	10 (J)	90	40	—	—	—	—	—	—	—	5.0 (B)	TO-3
2N561	PNP	50 (A)	100	80	50 (O)	20	50	4.0	—	—	—	—	TO-3
2N574	PNP	180 (J)	100	60	55 (O)	9.0	22	10	0.2	10	—	—	MT-7
2N574A	PNP	180 (J)	100	80	60 (O)	9.0	22	10	0.2	10	—	—	MT-7
2N575	PNP	180 (J)	100	60	50 (O)	19	42	10	0.5	25	—	—	MT-7
2N618	PNP	90 (C)	95	80	60 (S)	60	140	1.0	0.8	2.0	—	—	TO-3
2N627	PNP	90 (C)	100	40	30 (S)	10	30	10	1.0	10	—	—	TO-3
2N628	PNP	90 (C)	100	60	45 (S)	10	30	10	1.0	10	—	—	TO-3
2N628B	PNP	90 (C)	100	80	60 (S)	10	30	10	1.0	10	—	—	TO-3
2N629	PNP	90 (C)	100	80	60 (S)	10	30	10	1.0	10	—	—	TO-3
2N630	PNP	90 (C)	100	100	75 (S)	10	30	10	1.0	10	—	—	TO-3
2N637	PNP	60 (C)	100	—	35 (R)	30	60	3.0	1.5	3.0	—	—	TO-3
2N637A	PNP	60 (C)	100	—	65 (R)	30	60	3.0	1.5	3.0	—	—	TO-3
2N637B	PNP	60 (C)	100	—	75 (R)	30	60	3.0	1.5	3.0	—	—	TO-3
2N638	PNP	60 (C)	100	—	35 (R)	20	40	3.0	2.0	3.0	—	—	TO-3
2N638A	PNP	60 (C)	100	—	65 (R)	20	40	3.0	2.0	3.0	—	—	TO-3
2N638B	PNP	60 (C)	100	—	75 (R)	20	40	3.0	2.0	3.0	—	—	TO-3
2N653	PNP	35 (C)	95	80	40 (O)	40	80	0.5	0.9	3.0	—	15 (E)	TO-3
2N665	PNP	35 (C)	95	80	40 (O)	40	80	0.5	0.9	3.0	—	20 (E)	TO-3
2N669	PNP	62.5 (C)	100	40	30 (S)	—	250	0.5	—	—	—	3.0 (E)	TO-3
2N677	PNP	90 (C)	100	50	30 (S)	20	60	10	1.0	10	—	—	TO-41
2N677A	PNP	90 (C)	100	60	40 (S)	20	60	10	1.0	10	—	—	TO-41
2N677B	PNP	90 (C)	100	90	70 (S)	20	60	10	1.0	10	—	—	TO-41
2N677C	PNP	90 (C)	100	100	80 (S)	20	60	10	1.0	10	—	—	TO-41
2N678	PNP	90 (C)	100	50	20 (O)	50	100	10	1.0	10	—	—	TO-41
2N678A	PNP	90 (C)	100	60	30 (O)	50	100	10	1.0	10	—	—	TO-41
2N678B	PNP	90 (C)	100	90	60 (O)	50	100	10	1.0	10	—	—	TO-41
2N678C	PNP	90 (C)	100	100	70 (O)	50	100	10	1.0	10	—	—	TO-41
2N1011	PNP	35 (C)	95	80	80 (S)	30	75	3.0	1.5	3.0	20 (E)	5.0* (E)	TO-3
2N1021	PNP	50 (C)	95	100	100 (X)	23	70	1.0	1.0	5.0	—	—	TO-3
2N1021A	PNP	150 (C)	100	100	50 (O)	30	90	5.0	0.5	5.0	—	200 (T)	TO-3
2N1022	PNP	50 (C)	95	120	120 (X)	23	70	5.0	1.0	5.0	—	—	TO-3
2N1022A	PNP	150 (C)	100	120	55 (O)	30	90	5.0	0.5	5.0	—	200 (T)	TO-3
2N1031	PNP	90 (C)	100	50	30 (S)	20	60	10	1.0	10	10 (E)	2.0 (E)	TO-41
2N1031A	PNP	90 (C)	100	60	40 (S)	20	60	10	1.0	10	10 (E)	2.0 (E)	TO-41
2N1031B	PNP	90 (C)	100	90	70 (S)	20	60	10	1.0	10	10 (E)	2.0 (E)	TO-41
2N1031C	PNP	90 (C)	100	100	80 (S)	20	60	10	1.0	10	10 (E)	2.0 (E)	TO-41
2N1032	PNP	90 (C)	100	50	30 (S)	50	10	10	1.0	10	25 (E)	2.0 (E)	TO-41
2N1032A	PNP	90 (C)	100	60	40 (S)	50	100	10	1.0	10	25 (E)	2.0 (E)	TO-41
2N1032B	PNP	90 (C)	100	90	70 (S)	50	100	10	1.0	10	25 (E)	2.0 (E)	TO-41
2N1032C	PNP	90 (C)	100	100	80 (S)	50	100	10	1.0	10	25 (E)	2.0 (E)	TO-41
2N1038	PNP	20 (C)	95	40	40 (V)	20	60	1.0	0.25	1.0	18 (E)	8.0 (E)	TO-5
2N1099	PNP	50 (C)	95	80	70 (S)	35	70	5.0	0.7	12	—	—	TO-36
2N1100	PNP	50 (C)	95	100	65 (O)	25	50	5.0	0.7	12	—	—	TO-36
2N1120	PNP	45 (C)	95	80	70 (S)	20	50	10	1.0	10	30 (E)	3.0 (E)	TO-41
2N1136	PNP	—	100	60	35 (R)	50	100	3.0	1.0	3.0	—	4.0 (E)	TO-3
2N1136A	PNP	—	100	90	35 (R)	50	100	3.0	1.0	3.0	—	4.0 (E)	TO-3
2N1136B	PNP	—	100	100	75 (R)	50	100	3.0	1.0	3.0	—	—	TO-3
2N1137	PNP	—	100	60	25 (O)	75	150	3.0	1.0	3.0	—	—	TO-3
2N1137A	PNP	—	100	90	55 (O)	75	150	3.0	1.0	3.0	—	—	TO-3
2N1137B	PNP	—	100	100	65 (O)	75	150	3.0	1.0	3.0	—	—	TO-3
2N1138	PNP	—	100	60	25 (O)	100	200	3.0	1.0	3.0	—	—	TO-3
2N1138A	PNP	—	100	90	55 (O)	100	200	3.0	1.0	3.0	—	—	TO-3
2N1138B	PNP	—	100	100	65 (O)	100	200	3.0	1.0	3.0	—	—	TO-3
2N1146	PNP	87 (C)	95	40	20 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-3
2N1146A	PNP	87 (C)	95	60	30 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-3
2N1146B	PNP	87 (C)	95	80	40 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-3
2N1146C	PNP	87 (C)	95	100	50 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-3
2N1147	PNP	87 (C)	95	40	20 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-41
2N1147A	PNP	87 (C)	95	60	30 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-41
2N1147B	PNP	87 (C)	95	80	40 (O)	60	150	5.0	1.0	15	—	0.15*(E)	TO-41
2N1147C	PNP	87 (C)	95	100	50 (O)	60	150	5.0	1.0	15	—	0.15 (E)	TO-41
2N1157	PNP	187 (J)	100	60	45 (O)	38	84	10	0.8	40	—	75 (T)	MT-7
2N1157A	PNP	187 (J)	100	80	50 (O)	38	84	10	0.8	40	—	75 (T)	MT-7
2N1159	PNP	35 (C)	95	80	60 (O)	30	75	3.0	1.0	3.0	—	—	TO-3
2N1160	PNP	35 (C)	95	80	60 (O)	20	50	5.0	1.0	5.0	—	—	TO-3

\* MHz

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T-33-01

## germanium transistors cont'd

### germanium power transistors — (cont'd)

Type	Polarity	Power Dissipation @ 25°C (watts)	T <sub>J</sub> (°C)	BV <sub>CEO</sub> (volts)	BV <sub>CES</sub> (volts)	h <sub>FE</sub> @ I <sub>C</sub>			V <sub>CE</sub> (SAT) @ I <sub>C</sub>		h <sub>f</sub>	f <sub>T</sub> (MHz)	Case Style
						(Min.)	(Max.)	(Amps)	(volts)	(Amps)			
2N1162	PNP	90 (C)	100	50	35 (S)	15	65	25	0.8	25	—	—	—
2N1162A	PNP	90 (C)	100	50	35 (S)	15	65	25	0.8	25	—	—	—
2N1163	PNP	90 (C)	100	50	35 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-3
2N1163A	PNP	90 (C)	100	50	35 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-3
2N1164	PNP	90 (C)	100	80	60 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-41
					60 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-41
					60 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-3
2N1164A	PNP	90 (C)	100	80	60 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-3
2N1165	PNP	90 (C)	100	80	60 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-41
2N1165A	PNP	90 (C)	100	80	60 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-41
2N1166	PNP	90 (C)	100	100	75 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-3
2N1166A	PNP	90 (C)	100	100	75 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-3
2N1167	PNP	90 (C)	100	100	75 (S)	15	65	25	0.8	25	—	1.0 (E)	TO-41
2N1167A	PNP	90 (C)	100	100	75 (S)	15	65	25	0.8	25	—	3.0 (E)	TO-41
2N1168	PNP	45 (C)	95	50	30 (R)	—	—	—	—	—	—	—	—
2N1202	PNP	34 (J)	95	80	60 (O)	40	120	0.5	0.3	—	—	—	—
2N1203	PNP	34 (J)	95	120	70 (O)	25	75	2.0	0.6	2.0	—	200 (T)	MT-36
											200 (T)	200 (T)	MT-36
2N1227	PNP	50 (C)	95	35	20 (O)	50	350	0.5	0.8	1.5	25 (E)	3.0 (E)	TO-3
2N1261	PNP	34 (J)	95	80	40 (—)	20	50	2.0	0.6	2.0	—	200 (T)	MT-36
2N1262	PNP	35 (J)	95	80	45 (O)	30	75	2.0	0.6	2.0	—	200 (T)	MT-36
2N1263	PNP	34 (J)	95	80	45 (O)	45	113	2.0	0.6	2.0	—	200 (T)	MT-36
2N1358	PNP	90 (—)	95	80	40 (O)	40	80	1.2	0.7	12	—	200 (T)	MT-36
											—	100 (B)	TO-36
2N1359	PNP	90 (J)	100	50	40 (S)	35	90	1.0	0.1	2.0	—	5.0 (E)	TO-3
2N1360	PNP	90 (J)	100	50	40 (S)	60	140	1.0	1.0	2.0	—	5.0 (E)	TO-3
2N1362	PNP	90 (J)	100	100	75 (S)	35	90	1.0	1.0	2.0	—	5.0 (E)	TO-3
2N1363	PNP	90 (J)	100	100	75 (S)	60	140	1.0	1.0	2.0	—	5.0 (E)	TO-3
2N1364	PNP	90 (J)	100	120	100 (S)	35	90	1.0	1.0	2.0	—	5.0 (E)	TO-3
2N1365	PNP	90 (J)	100	120	100 (S)	60	140	1.0	1.0	2.0	—	5.0 (E)	TO-3
2N1412	PNP	70 (C)	95	100	65 (O)	25	50	5.0	0.7	12	—	5.0 (E)	TO-3
2N1501	PNP	34 (J)	95	60	40 (—)	25	100	2.0	0.6	2.0	—	200 (T)	MT-36
2N1502	PNP	34 (J)	95	40	40 (—)	25	100	2.0	0.6	2.0	—	200 (T)	MT-36
2N1529	PNP	90 (C)	100	40	30 (S)	20	40	3.0	1.5	3.0	—	200 (T)	MT-36
											—	—	TO-3
2N1529A	PNP	90 (C)	100	40	20 (O)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1530	PNP	90 (C)	100	60	45 (S)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1530A	PNP	90 (C)	100	60	30 (O)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1531	PNP	90 (C)	100	80	60 (S)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1531A	PNP	90 (C)	100	80	40 (O)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1532	PNP	90 (C)	100	100	75 (S)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1532A	PNP	90 (C)	100	100	50 (O)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1533	PNP	90 (C)	100	120	90 (S)	20	40	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1534	PNP	90 (C)	100	40	30 (S)	35	70	3.0	1.5	3.0	—	5.0 (E)	TO-3
2N1534A	PNP	90 (C)	100	40	20 (O)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
											—	5.0 (E)	TO-3
2N1535	PNP	90 (C)	100	60	45 (S)	45	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1535A	PNP	90 (C)	100	60	30 (O)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1536	PNP	90 (C)	100	80	60 (S)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1536A	PNP	90 (C)	100	80	40 (O)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1537	PNP	90 (C)	100	100	75 (S)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1537A	PNP	90 (C)	100	100	50 (O)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1538	PNP	90 (C)	100	120	90 (S)	35	70	3.0	1.2	3.0	—	5.0 (E)	TO-3
2N1539	PNP	90 (C)	100	40	30 (S)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1539A	PNP	90 (C)	100	40	20 (O)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1540	PNP	90 (C)	100	60	45 (S)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1540A	PNP	90 (C)	100	60	30 (O)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1541	PNP	90 (C)	100	80	60 (S)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1541A	PNP	90 (C)	100	80	40 (O)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1542	PNP	90 (C)	100	100	75 (S)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1542A	PNP	90 (C)	100	100	50 (O)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1543	PNP	90 (C)	100	120	90 (S)	50	100	3.0	0.3	3.0	—	5.0 (E)	TO-3
2N1544	PNP	90 (C)	100	40	30 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1544A	PNP	90 (C)	100	40	30 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1545	PNP	90 (C)	100	60	45 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1545A	PNP	90 (C)	100	60	45 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1546	PNP	90 (C)	100	80	60 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1546A	PNP	90 (C)	100	80	60 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1547	PNP	90 (C)	100	100	75 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1547A	PNP	90 (C)	100	100	75 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1548	PNP	90 (C)	100	120	90 (S)	75	150	3.0	0.2	3.0	—	5.0 (E)	TO-3
2N1549	PNP	90 (C)	100	40	30 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1549A	PNP	90 (C)	100	40	30 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1550	PNP	90 (C)	100	60	45 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1550A	PNP	90 (C)	100	60	45 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1551	PNP	90 (C)	100	80	60 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1551A	PNP	90 (C)	100	80	60 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1552	PNP	90 (C)	100	100	75 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1552A	PNP	90 (C)	100	100	75 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1553	PNP	90 (C)	100	40	30 (S)	10	30	10	1.0	10	—	5.0 (E)	TO-3
2N1553A	PNP	90 (C)	100	40	20 (O)	30	60	10	0.5	10	—	5.0 (E)	TO-3
											—	1.0 (E)	TO-3
											—	3.0 (E)	TO-3



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T-33-01

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germanium transistors cont'd

germanium power transistors — (cont'd)

Type	Polarity	Power Dissipation @ 25°C (watts)	T <sub>J</sub> (°C)	BV <sub>CEO</sub> (volts)	BV <sub>CE—</sub> (volts)	h <sub>FE</sub> @ I <sub>C</sub>			V <sub>CE (SAT)</sub> @ I <sub>C</sub>		hf <sub>max</sub>	f <sub>T</sub> (KHz)		Case Style
						(Min.)	(Max.)	(Amps)	(volts)	(Amps)		NOTE 3	NOTE 4	
2N1554	PNP	90 (C)	100	60	45 (S)	30	60	10	0.5	10	—	1.0 (E)	TO-3	
2N1554A	PNP	90 (C)	100	60	30 (S)	30	60	10	0.5	10	—	3.0 (E)	TO-3	
2N1555	PNP	90 (C)	100	80	60 (S)	30	60	10	0.5	10	—	1.0 (E)	TO-3	
2N1555A	PNP	90 (C)	100	80	40 (S)	30	60	10	0.5	10	—	3.0 (E)	TO-3	
2N1556	PNP	90 (C)	100	100	75 (S)	30	60	10	0.5	10	—	1.0 (E)	TO-3	
2N1556A	PNP	90 (C)	100	100	50 (S)	30	60	10	0.5	10	—	3.0 (E)	TO-3	
2N1557	PNP	90 (C)	100	40	30 (S)	50	100	10	0.4	10	—	1.0 (E)	TO-3	
2N1557A	PNP	90 (C)	100	40	20 (S)	50	100	10	0.5	10	—	3.0 (E)	TO-3	
2N1558	PNP	90 (C)	100	60	45 (S)	50	100	10	0.4	10	—	1.0 (E)	TO-3	
2N1558A	PNP	90 (C)	100	60	30 (S)	20	100	10	0.5	10	—	3.0 (E)	TO-3	
2N1559	PNP	90 (C)	100	80	60 (S)	50	100	10	0.4	10	—	1.0 (E)	TO-3	
2N1559A	PNP	90 (C)	100	80	40 (S)	50	100	10	0.5	10	—	3.0 (E)	TO-3	
2N1560	PNP	90 (C)	100	100	75 (S)	50	100	10	0.4	10	—	1.0 (E)	TO-3	
2N1560A	PNP	90 (C)	100	100	50 (S)	50	100	10	0.5	10	—	3.0 (E)	TO-3	
2N1970	PNP	150 (C)	100	100	50 (B)	17	40	5	1	12	—	5.0 (E)	TO-36	
2N1971	PNP	170 (C)	100	80	40 (S)	25	60	5	0.9	3.0	—	15 (E)	TO-3	
2N1980	PNP	170 (C)	100	50	30 (S)	50	100	5.0	0.5	5.0	—	3.0 (E)	TO-36	
2N1981	PNP	170 (C)	100	70	40 (S)	50	100	5.0	0.5	5.0	—	3.0 (E)	TO-36	
2N1982	PNP	170 (C)	100	90	50 (S)	50	100	5.0	0.5	5.0	—	3.0 (E)	TO-36	
2N2075	PNP	170 (C)	110	80	80 (S)	20	40	5.0	0.7	12	—	5.0 (E)	TO-36	
2N2076	PNP	170 (C)	110	70	70 (S)	20	40	5.0	0.7	12	—	5.0 (E)	TO-36	
2N2077	PNP	170 (C)	110	50	50 (S)	20	40	5.0	0.9	12	—	5.0 (E)	TO-36	
2N2078	PNP	170 (C)	110	40	40 (S)	20	40	5.0	0.9	12	—	5.0 (E)	TO-36	
2N2079	PNP	170 (C)	110	80	80 (S)	35	70	5.0	0.7	12	—	5.0 (E)	TO-36	
2N2080	PNP	170 (C)	110	70	70 (S)	35	70	5.0	0.7	12	—	5.0 (E)	TO-36	
2N2081	PNP	170 (C)	110	50	50 (S)	35	70	5.0	0.9	12	—	5.0 (E)	TO-36	
2N2082	PNP	170 (C)	110	40	40 (S)	35	70	5.0	0.9	12	—	5.0 (E)	TO-36	
2N2138	PNP	62.5 (C)	100	45	45 (S)	30	60	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2139	PNP	62.5 (C)	100	60	60 (S)	30	60	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2140	PNP	62.5 (C)	100	75	75 (S)	30	60	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2141	PNP	62.5 (C)	100	90	90 (S)	30	60	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2142	PNP	62.5 (C)	100	30	30 (S)	50	100	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2143	PNP	62.5 (C)	100	45	45 (S)	50	100	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2144	PNP	62.5 (C)	100	60	60 (S)	50	100	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2145	PNP	62.5 (C)	100	75	75 (S)	50	100	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2146	PNP	62.5 (C)	100	90	90 (S)	50	100	0.5	0.5	2.0	—	12 (E)	TO-3	
2N2158	PNP	170 (C)	110	75	75 (S)	80	160	5.0	0.1	5.0	—	2.0 (E)	TO-36	
2N2266	PNP	50 (J)	125	100	55 —	40	120	0.5	0.75	5.0	—	200 (T)	MT-36	
2N2267	PNP	50 (J)	125	120	55 —	40	120	0.5	0.75	5.0	—	200 (T)	MT-36	
2N2268	PNP	50 (J)	125	100	55 —	40	120	0.5	0.75	5.0	—	200 (T)	MT-36	
2N2269	PNP	50 (J)	125	120	55 —	40	120	0.5	0.75	5.0	—	200 (T)	MT-36	
2N2445	PNP	90 (C)	100	100	50 (S)	30	60	10	1.0	10	30 (E)	0.1* (T)	MT-41	
2N2730	PNP	140 (C)	110	80	60 (S)	30	120	25	0.25	25	—	200 (T)	TO-36	
2N2731	PNP	140 (C)	110	60	45 (S)	30	120	25	0.25	25	—	200 (T)	TO-36	
2N2732	PNP	140 (C)	110	40	30 (S)	30	120	25	0.25	25	—	200 (T)	TO-36	
2N2733	PNP	140 (C)	110	80	60 (S)	30	120	25	0.25	25	—	200 (T)	MT-23	
2N2734	PNP	140 (C)	110	60	45 (S)	30	120	25	0.25	25	—	200 (T)	MT-23	
2N2735	PNP	140 (C)	110	40	30 (S)	30	120	25	0.25	25	—	200 (T)	MT-23	
2N2736	PNP	140 (C)	110	80	60 (S)	30	120	25	0.25	25	—	200 (T)	MT-22	
2N2737	PNP	140 (C)	110	60	45 (S)	30	120	25	0.25	25	—	200 (T)	MT-22	
2N2738	PNP	140 (C)	110	40	30 (S)	30	120	25	0.25	25	—	200 (T)	MT-22	
2N2869	PNP	30 (C)	100	60	50 (S)	50	165	1.0	0.75	10	—	200 (T)	TO-3	
2N3311	PNP	170 (C)	110	30	30 (S)	60	120	3.0	0.1	3.0	30 (E)	1.0 (E)	TO-36	
2N3312	PNP	170 (C)	110	45	45 (S)	60	120	3.0	0.1	3.0	30 (E)	1.0 (E)	TO-36	
2N3313	PNP	170 (C)	110	60	60 (S)	60	120	3.0	0.1	3.0	30 (E)	1.0 (E)	TO-36	
2N3314	PNP	170 (C)	110	30	30 (S)	100	200	3.0	0.1	3.0	40 (E)	1.0 (E)	TO-36	
2N3316	PNP	170 (C)	110	45	45 (S)	100	200	3.0	0.1	3.0	40 (E)	1.0 (E)	TO-36	
2N3611	PNP	85 (C)	110	60	60 (S)	100	200	3.0	0.1	3.0	40 (E)	1.0 (E)	TO-36	
2N3612	PNP	85 (C)	110	40	30 (S)	35	70	3.0	0.25	3.0	40 (E)	0.3* (T)	TO-3	
2N3613	PNP	85 (C)	110	60	45 (S)	35	70	3.0	0.25	3.0	40 (E)	0.3* (T)	TO-3	
2N3614	PNP	85 (C)	110	40	30 (S)	60	120	3.0	0.25	3.0	60 (E)	0.3* (T)	TO-3	
2N3615	PNP	85 (C)	110	60	45 (S)	60	120	3.0	0.25	3.0	60 (E)	0.3* (T)	TO-3	
2N3616	PNP	85 (C)	110	80	60 (S)	30	60	3.0	0.25	3.0	40 (E)	0.3* (T)	TO-3	
2N3617	PNP	85 (C)	110	100	75 (S)	30	60	3.0	0.25	3.0	40 (E)	0.3* (T)	TO-3	
2N3618	PNP	85 (C)	110	80	60 (S)	45	90	3.0	0.25	3.0	60 (E)	0.3* (T)	TO-3	
3N49	PNP	94 (C)	100	100	75 (S)	45	90	3.0	0.25	3.0	60 (E)	0.3* (T)	TO-3	
3N50	PNP	94 (C)	100	60	35 (S)	30	120	5.0	0.4	5.0	30 (E)	600	MT-70	
3N51	PNP	94 (C)	100	80	50 —	20	80	5.0	0.4	5.0	—	300	MT-70	
3N52	PNP	94 (C)	100	40	25 —	30	120	5.0	0.4	5.0	30 (E)	500	MT-70	
3N52	PNP	94 (C)	100	60	40 —	20	80	5.0	0.4	5.0	—	300	MT-70	

\* MHz

## case outline drawings



