2N1049–2N1136A

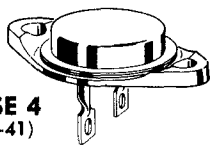
TYPE	MATERIAL	POLARITY	REPLACEMENT	PAGE NUMBER	USE	MAXIMUM RATINGS P_D @ 25°C	Ref Point	T_J °C	V_{CB} (volts)	V_{CE-} (volts)	Subscript	ELECTRICAL CHARACTERISTICS h_{FE} @ I_C (min)	(max)	Units	$V_{CE(SAT)}$ @ I_C (volts)	Units	h_{f-}	Subscript	f_-	Units	Subscript
2N1049	S	N			LPA	40W	C	200	80			30	90	500M	7.5	500M					
2N1049A	S	N			LPA	40W	C	200	80	80	O	30	90	500M	7.5	500M			75K		E
2N1049B	S	N			LPA	40W	C	200	80	80	O	30	90	500M	2.0	500M			125K		E
2N1049C	S	N			LPA	40W	C	200	80	80	O	30	90	500M	1.0	500M			125K		E
2N1050	S	N			LPA	40W	C	200	120			30	90	500M	7.5	500M					
2N1050A	S	N			LPA	40W	C	200	120	120	O	30	90	500M	7.5	500M			75K		E
2N1050B	S	N			LPA	40W	C	200	120	120	O	30	90	500M	2.0	500M			125K		E
2N1050C	S	N			LPA	40W	C	200	120	80	O	30	90	500M	1.0	500M			125K		E
2N1051	S	N			RFA	0.5W	A	150	40	40	O	25		50M	3.0	50M	30	E	80M		T
2N1052	S	N			RFA	6.0M	A	200	200	200	V	20	80	0.2A	5.0	0.2A					
2N1054	S	N			VID	0.8W	A	200	125	115	O	20		0.2A			15	E	8.0M		T
2N1055	S	N			RFA	5.5M	A	200	100	100	O	20	80	50M	2.0	50M			3.0M		T
2N1056	G	P	2N2043	6-39	AFA	240M	A	100	70	50	R	18	43	20M	0.13	20M			500K		B
2N1057	G	P	2N1924	6-37	AFA	240M	A	100	45	45	V	34	90	20M	0.13	20M			500K		B
2N1058	G	N				50M		75	20	20	R						10	B	4.0M		B
2N1059	G	N			AFA	180M		75	40	15	R			10M					10K		E
2N1060	S	N	2N2501	8-148	HSS	0.25W	A	150	40	40	O	17		5.0M	0.3	5.0M					
2N1065	G	P			AFA	0.12W	A	85	40	20	O	20	80		0.25	10M			10M		T
2N1066	G	P	2N3323	9-71	RFA	120M	A	100	40	40	O	20	175	1.5M							
2N1067	S	N	2N3766	7-142	PMS	5.0W	C	175	60	30	O	15	75	200M	2.0	200M			0.75M		B
2N1068	S	N	2N3766	7-142	PMS	10W	C	175	60	30	O	15	75	750M	2.0	200M			0.75M		B
2N1069	S	N	2N3766	7-142	PMS	50W	C	175	60	45	O	20	50	1.5A	1.33	0.5A			0.5M		B
2N1070	S	N	2N3766	7-142	PMS	50W	C	175	60	45	O	20	50	1.5A	0.5	1.5A			0.5M		B
2N1072	S	N	2N3766	7-142	PHS	2.0W	A	150	75	30	O	20		0.75A	2.0	0.75A					
2N1073	G	P		7-48	LPA			110	40	40	R	20	60	5.0A	1.0	5.0A					
2N1073A	G	P		7-48	LPA			110	80	80	R	20	60	5.0A	1.0	5.0A					
2N1073B	G	P		7-48	LPA			110	120	120	R	20	60	5.0A	1.0	5.0A					
2N1074	S	N			AFA	250M	A	160	50	40	O						9.0	E	200K		B
2N1075	S	N			AFA	250M	A	160	50	35	O						18	E	250K		B
2N1076	S	N			AFA	250M	A	160	50	30	O						36	E	300K		B
2N1077	S	N			AFA	250M	A	160	50	35	O				1.0	8.0M	9.0	E	200K		B
2N1078	G	P			LPA	20W	C	85	60	60	S	40		0.5A	1.0	1.0A					
2N1079	S	N			HPA	60W	C	200	60	60	S	20	80	1.0A	3.0	1.0A	20	E	10M		T
2N1080	S	N			HPA	60W	C	200	60	60	S	20	80	2.0A	5.0	2.0A	20	E	10M		T
2N1081	S	N			MSS	6.0M	A	200	40	40	O	20	100	0.5A	4.0	0.5A					
2N1082	S	N			RFA	0.2W	A	200	25	25	S	10	50	10M			10	E	17M		T
2N1086	G	N			RFC	65M	A	85	9.0	9.0	O	17	195	1.0M							
2N1086A	G	N			RFC	65M	A	85	9.0	9.0	O	17	195	1.0M							
2N1087	G	N			RFC	65M	A	85	9.0	9.0	O	17	195	1.0M							
2N1090	G	N			MSS	120M	A	85	25			30		20M	0.2	20M			5.0M		B
2N1091	G	N			MSS	120M	A	85	25			40		20M	0.3	200M			10M		B
2N1092	S	N			PMS	2.0W	A	175	60	30	O	15	75	200M	2.0	200M			0.75M		B
2N1093	G	P			AFA	150M	A	95	30	15	O	50	150	20M	0.2	20M	40	E	5.0M		B
2N1094	G	P			RFA	0.15W	A	100	30	15	O	15		4.0M			0.96	B	560M		T
2N1097	G	P	2N1414	6-33	AFC	200M	A	100	18	18	R	34	90	20M					1.0M		B
2N1098	G	P	2N1414	6-33	AFC	200M	A	100	18	18	R	25	90	20M					1.0M		B
2N1099	G	P		7-25	LPA	50W	C	95	80	70	S	35	70	5.0A	0.7	12A					
2N1100	G	P		7-17	LPA	50W	C	95	100	65	O	25	50	5.0A	0.7	12A					
2N1101	G	N			AFA	180M		75	20	15	R	25	50	35M	0.5	100M			10K		E
2N1102	G	N			AFA	180M		75	40	25	R	25	50	35M	0.5	100M			10K		E
2N1103	S	N			AFA	125M	A	150	45	35	O	30	65	10M	1.5	10M	20	E	10M		B
2N1104	S	N			AFA	125M	A	150	45	35	O	45	150	10M	1.5	10M	40	E	20M		B
2N1105	S	N			AFA	800M	A	200	60	60	O	12	36	200M	5.0	200M					
2N1106	S	N			AFA	800M	A	200	100	100	O	12	36	200M	5.0	200M					
2N1107	G	P			RFA	30M	C		16										40M		B
2N1108	G	P			RFA	30M	C		16										35M		B
2N1109	G	P			RFA	30M	C		16										35M		B
2N1110	G	P			RFA	30M	C		16										35M		B
2N1111	G	P			RFA	30M	C		16										35M		B
2N1114	G	N			MSS	150M		100	25	15	R	40	180	20M					7.0M		B
2N1115	G	P			MSA	150M	A	85	20	15	O				0.35	60M			5.0M		B
2N1115A	G	P			MSA	150M	A	85	20	15	O				0.35	60M			5.0M		B
2N1116	S	N			RFA	600M	C	200	60	60	O	40	150	0.5A	5.0	0.5A			6.0M		T
2N1117	S	N			RFA	600M	C	200	60	60	O	40	150	0.2A	4.0	0.2A			4.0M		T
2N1118	S	P			RFA	150M	A	140	25	25	U						15	E	8.0M		M
2N1118A	S	P			RFA	150M	A	140	25	25	U		25	15M			15	E	8.0M		M
2N1119	S	P			MSS	150M	A	140	10	10	U	15		15M	0.15	5.0M			7.2M		T
2N1120	G	P		7-51	LPA	45W	C	95	80	70	S	20	50	10A	1.0	10A	30	E	3.0K		E
2N1121	G	N			RFC	65M	C	85	15	15	O	34		1.0M							
2N1122	G	P	2N961	8-74	HSS	25M	A	100	12	11	S	25		10M	0.1	8.0M	35	E	40M		
2N1122A	G	P	2N960	8-74	HSS	25M	A	100	15	14	S	25		10M	0.1	8.0M	35	E	40M		
2N1123	G	P	2N3427	6-41	MSS	10M	C	100	45	40	S	40		100M	0.2	10M			3.0M		B
2N1124	G	P	2N651	6-20	AFS	300M	A	85	40	35	V				0.2	100M	40	E	400K		B
2N1125	G	P	2N651	6-20	HSA	300M	A	85	40	40	V	50	150	500M	0.3	500M			1.0M		B
2N1126	G	P	2N651	6-20	MSA	1.0W	C	85	40	35	V				0.2	100M	40	E	400K		B
2N1127	G	P	2N3428	6-41	MSA	1.0W	C	85	40	40	V	50	150	500M	0.3	500M			1.0M		B
2N1128	G	P	2N1192	6-30	AFA	150M	A	85	25	18	S						70	E			
2N1129	G	P	2N3427	6-41	AFA	150M	A	85	25	25	V	100	200	100M	0.25	100M					
2N1130	G	P	2N1193	6-30	AFA	150M	A	85	30			50	165	100M	0.25	100M					
2N1131	S	P		8-90	MSA	600M	A	175	50	35	O	20	45	150M	1.5	150M	15	E	50M		T
2N1131A	S	P	2N2800	8-161	MSA	0.6W	A	175	60	40	O	20	45	0.15A	1.5	0.15A	15	E	50M		T
2N1132	S	P		8-36	MSA	600M	A	175	50	35	O	30	90	150M	1.5	150M	25	E	60M		T
2N1132A	S	P		8-36	MSA	0.6W	A	175	60	40	O	30	90	0.15A	1.5	0.15A	25	E	60M		T
2N1132B	S	P		8-36	MSA	0.6W	A	175	70	45	O	30	90	0.15A	1.5	0.15A	25	E	60M		T
2N1135	S	P			MSS	100M	A	140	12	12	O								5.6M		T
2N1135A	S	P			MSS	100M	A	140	12	12	O								5.6M		T
2N1136	G	P	2N1540	7-64	LPA			100	60	35	R	50	100	3.0A	1.0	3.0A			4.0K		E
2N1136A	G	P	2N1542	7-64	LPA			100	90	35	R	50	100	3.0A	1.0	3.0A			4.0K		E

Datasheet.Live

2N1120 (GERMANIUM)

2N1120 JAN AVAILABLE

$V_{CB} = 80$ V
$I_E = 15$ A
$P_D = 90$ W



CASE 4
(TO-41)

PNP germanium power transistors for military and industrial power applications.

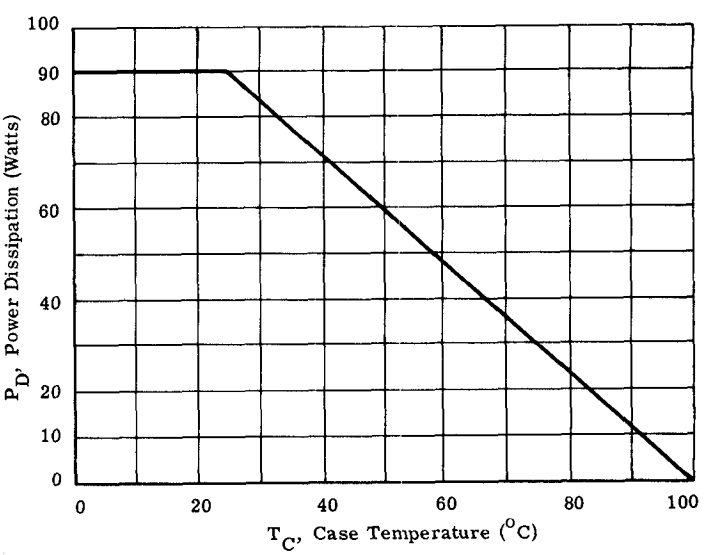
MAXIMUM RATINGS

Rating	Symbol	2N1120	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Emitter Voltage	V_{CES}	70	Vdc
Collector-Base Voltage	V_{CB}	80	Vdc
Emitter-Base Voltage	V_{EB}	40	Vdc
Emitter Current	I_E	15	Adc
Total Device Dissipation @ $T_C = 25^oC$ Derate above 25^oC	P_D	90 1.2	Watts $W/^oC$
Operating Junction Temperature Range	T_J	-65 to +100	^oC

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	0.8	$^oC/W$

POWER-TEMPERATURE DERATING CURVE



2N1120 (continued)

ELECTRICAL CHARACTERISTICS (At 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C = 300 mAdc, I_B = 0)	BV_{CEO}	40	-	Vdc
Collector-Emitter Breakdown Voltage (I_C = 300 mAdc, V_{BE} = 0)	BV_{CES}	70	-	Vdc
Floating Potential (V_{CB} = 80 Vdc, I_E = 0) (Voltmeter Input Resistance = 10 meg. min.)	V_{EBF}	-	1.0	Vdc
Collector Cutoff Current (V_{CB} = 2 Vdc, I_E = 0)	I_{CBO}	-	0.3	mAdc
(V_{CB} = 30 Vdc, I_E = 0)			20	
(V_{CB} = 80 Vdc, I_E = 0)		-	15	
Emitter Cutoff Current (V_{BE} = 40 Vdc, I_C = 0)	I_{EBO}	-	5.0	mAdc
Base Current (V_{CE} = 2 Vdc, I_C = 5 Adc)	I_B	50	-	mAdc
(V_{CE} = 2 Vdc, I_C = 10 Adc)		200	500	
ON CHARACTERISTICS				
DC Current Gain (I_C = 5.0 Adc, V_{CE} = 2.0 Vdc)	h_{FE}	-	100	-
(I_C = 10.0 Adc, V_{CE} = 2.0 Vdc)		20	50	
Collector-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)	$V_{CE(sat)}$	-	1.0	Vdc
Base-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)	$V_{BE(sat)}$	-	1.5	Vdc
Base-Emitter On Voltage (I_C = 10 Adc, V_{CE} = 2 Vdc)	$V_{BE(on)}$	-	2.0	Vdc
SMALL SIGNAL CHARACTERISTICS				
Common-Emitter Cutoff Frequency (I_C = 5.0 Adc, V_{CE} = 2.0 Vdc)	$f_{\alpha e}$	3	-	kHz