

Transistors

§ Small Signal Bipolar

Transistors

§ Medium Power Bipolar

Transistors

§ Pre-biased Transistors

Transistors



Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _C (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _C (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
MJD31CHE3	DPAK	NPN	1.25	100	3	10	75	4	3000	1.2	3	150
MJD41CHE3	DPAK	NPN	1.25	100	6	15	155	4	3	1.5	3	150
MJD42CHE3	DPAK	PNP	1.5	-100	-6	15	75	-4	-3000	-1.5	3	150
MJD32CHE3	DPAK	PNP	1.25	-100	-3	10	75	-0.375	-3000	-1.2	3	150
BCP56-16HE3	SOT-223	NPN	1.5	80	1	100	250	2	150	0.5	100	150
PZT5551HE3	SOT-223	NPN	1	160	0.6	80	-	5	1	0.15	100	150
BCP53-16HE3	SOT-223	PNP	1.5	-80	-1	100	250	-2	-150	-0.5	100	150
PZT2907AHE3	SOT-223	PNP	1	-60	-0.6	100	300	-10	-150	-0.4	200	150
BC848AHE3	SOT-23	NPN	0.225	30	0.1	110	220	5	2	0.5	100	150
BC848BHE3	SOT-23	NPN	0.225	30	0.1	200	450	5	2	0.5	100	150
BC848CHE3	SOT-23	NPN	0.225	30	0.1	420	800	5	2	0.5	100	150
FMMT491BHE3	SOT-23	NPN	0.3	40	1	300	-	5	1	0.2	150	150
MMSS8050HE3-H	SOT-23	NPN	0.3	40	1.5	200	350	1	100	0.5	100	150
MMSS8050HE3-L	SOT-23	NPN	0.3	40	1.5	120	200	1	100	0.5	100	150
BC847AHE3	SOT-23	NPN	0.225	50	0.1	110	220	5	2	0.5	100	150
BC847BHE3	SOT-23	NPN	0.225	50	0.1	200	450	5	2	0.5	100	150
BC847CHE3	SOT-23	NPN	0.225	50	0.1	420	800	5	2	0.5	100	150
BC817-16HE3	SOT-23	NPN	0.3	50	0.5	100	250	1	100	0.7	100	150
BC817-25HE3	SOT-23	NPN	0.3	50	0.5	160	400	1	100	0.7	100	150
BC817-40HE3	SOT-23	NPN	0.3	50	0.5	250	600	1	100	0.7	100	150
MMBT3904HE3	SOT-23	NPN	0.35	60	0.2	100	300	1	10	0.2	300	150
MMBT4401HE3	SOT-23	NPN	0.35	60	0.6	80	-	1	10	0.4	250	150
MMBT2222AHE3	SOT-23	NPN	0.35	75	0.6	75	-	10	10	0.3	300	150
BC846AHE3	SOT-23	NPN	0.225	80	0.1	110	220	5	2	0.5	100	150
BC846BHE3	SOT-23	NPN	0.225	80	0.1	200	450	5	2	0.5	100	150
2SD1782HE3-R	SOT-23	NPN	0.2	80	0.5	180	390	3	100	0.5	180	150
MMBTA06HE3	SOT-23	NPN	0.3	80	0.5	100	-	1	10	0.25	100	150
MMBT5551HE3	SOT-23	NPN	0.3	180	0.6	100	300	5	10	0.2	100	150
MMBTA42HE3	SOT-23	NPN	0.35	300	0.5	40	-	10	10	0.5	50	150
MMBTA92HE3	SOT-23	PNP	0.3	-300	-0.3	100	200	-10	-10	-0.5	50	150
MMBT5401HE3	SOT-23	PNP	0.3	-160	-0.6	100	300	-5	-10	-0.5	100	150
FMMT591HE3	SOT-23	PNP	0.3	-80	-1	100	300	-5	-500	-0.6	150	150
2SB1198HE3-R	SOT-23	PNP	0.2	-80	-0.5	180	390	3	100	-0.5	180	150
MMBTA56HE3	SOT-23	PNP	0.3	-80	-0.5	100	-	-1	-10	-0.25	100	150
BC856AHE3	SOT-23	PNP	0.31	-80	-0.1	125	250	-5	-2	-0.3	200	150
BC856BHE3	SOT-23	PNP	0.31	-80	-0.1	220	475	-5	-2	-0.3	200	150
MMBT2907AHE3	SOT-23	PNP	0.35	-60	-0.6	100	-	-10	-10	-0.4	200	150
BC807-16HE3	SOT-23	PNP	0.3	-50	-0.5	100	250	-1	-100	-0.7	100	150
BC807-25HE3	SOT-23	PNP	0.3	-50	-0.5	160	400	-1	-100	-0.7	100	150
BC807-40HE3	SOT-23	PNP	0.3	-50	-0.5	250	600	-1	-100	-0.7	100	150
BC857AHE3	SOT-23	PNP	0.31	-50	-0.1	125	250	-5	-2	-0.3	200	150
BC857BHE3	SOT-23	PNP	0.31	-50	-0.1	220	475	-5	-2	-0.3	200	150
MMSS8550HE3-H	SOT-23	PNP	0.625	-40	-1.5	200	350	-1	-100	-0.5	100	150
MMSS8550HE3-L	SOT-23	PNP	0.625	-40	-1.5	120	200	-1	-100	-0.5	100	150

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Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _C (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _C (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
FMMT591BHE3	SOT-23	PNP	0.3	-40	-1	300	-	-5	-1	-0.2	150	150
MMBT4403HE3	SOT-23	PNP	0.35	-40	-0.6	100	-	-1	-10	-0.4	200	150
MMS8550HE3-H	SOT-23	PNP	0.3	-40	-0.5	200	350	-1	-50	-0.6	150	150
MMS8550HE3-L	SOT-23	PNP	0.3	-40	-0.5	120	200	-1	-50	-0.6	150	150
MMBT3906HE3	SOT-23	PNP	0.3	-40	-0.2	100	300	-1	-10	-0.25	250	150
BC858AHE3	SOT-23	PNP	0.3	-30	-0.1	125	250	-5	-2	-0.65	100	150
BC858BHE3	SOT-23	PNP	0.3	-30	-0.1	220	475	-5	-2	-0.65	100	150
BC858CHE3	SOT-23	PNP	0.3	-30	-0.1	420	800	-5	-2	-0.65	100	150
BC848AWHE3	SOT-323	NPN	0.2	30	0.1	110	220	5	2	0.5	150	150
BC848BWHE3	SOT-323	NPN	0.2	30	0.1	200	450	5	2	0.5	150	150
BC848CWHE3	SOT-323	NPN	0.2	30	0.1	420	800	5	2	0.5	150	150
BC847AWHE3	SOT-323	NPN	0.2	50	0.1	110	220	5	2	0.5	150	150
BC847BWHE3	SOT-323	NPN	0.2	50	0.1	200	450	5	2	0.5	150	150
BC847CWHE3	SOT-323	NPN	0.2	50	0.1	420	800	5	2	0.5	150	150
BC817-16WHE3	SOT-323	NPN	0.2	50	0.5	100	250	1	100	0.7	100	150
BC817-25WHE3	SOT-323	NPN	0.2	50	0.5	160	400	1	100	0.7	100	150
BC817-40WHE3	SOT-323	NPN	0.2	50	0.5	250	600	1	100	0.7	100	150
MMST3904HE3	SOT-323	NPN	0.2	60	0.2	100	300	1	10	0.3	250	150
MMST4401HE3	SOT-323	NPN	0.2	60	0.6	100	300	1	150	0.4	150	150
MMST2222AHE3	SOT-323	NPN	0.2	75	0.6	100	300	10	150	0.6	300	150
BC846AWHE3	SOT-323	NPN	0.2	80	0.1	110	220	5	2	0.5	150	150
BC846BWHE3	SOT-323	NPN	0.2	80	0.1	200	450	5	2	0.5	150	150
MMSTA06HE3	SOT-323	NPN	0.2	80	0.5	100	400	1	10	0.25	100	150
MMST5551HE3	SOT-323	NPN	0.2	180	0.6	30	-	5	50	0.2	100	150
MMSTA42HE3	SOT-323	NPN	0.2	300	0.2	40	-	10	10	0.5	50	150
MMSTA92HE3	SOT-323	PNP	0.2	-300	-0.1	40	-	-10	-10	-0.4	50	150
MMST5401HE3	SOT-323	PNP	0.2	-160	-0.6	60	300	-5	-10	-0.5	100	150
MMSTA56HE3	SOT-323	PNP	0.2	-80	-0.5	100	-	-1	-10	-0.25	100	150
BC856AWHE3	SOT-323	PNP	0.15	-80	-0.1	125	250	-5	-2	-0.65	100	150
BC856BWHE3	SOT-323	PNP	0.15	-80	-0.1	220	475	-5	-2	-0.65	100	150
MMST2907AHE3	SOT-323	PNP	0.2	-60	-0.6	100	-	-10	-1	-1.6	200	150
BC807-16WHE3	SOT-323	PNP	0.2	-50	-0.5	100	250	-1	-100	-0.7	100	150
BC807-25WHE3	SOT-323	PNP	0.2	-50	-0.5	160	400	-1	-100	-0.7	100	150
BC807-40WHE3	SOT-323	PNP	0.2	-50	-0.5	250	600	-1	-100	-0.7	100	150
BC857AWHE3	SOT-323	PNP	0.15	-50	-0.1	125	250	-5	-2	-0.65	100	150
BC857BWHE3	SOT-323	PNP	0.15	-50	-0.1	220	475	-5	-2	-0.65	100	150
MMST4403HE3	SOT-323	PNP	0.2	-40	-0.6	100	300	-2	-150	-0.4	200	150
MMST3906HE3	SOT-323	PNP	0.2	-40	-0.2	100	300	-1	-10	-0.3	300	150
BC858AWHE3	SOT-323	PNP	0.15	-30	-0.1	125	250	-5	-2	-0.65	100	150
BC858BWHE3	SOT-323	PNP	0.15	-30	-0.1	220	475	-5	-2	-0.65	100	150
BC847BSHE3	SOT-363	NPN*2	0.2	50	0.1	200	450	5	2	0.65	150	150
BC847BSQ	SOT-363	NPN*2	0.2	50	0.1	200	450	5	2	0.65	100	150
BC847PNHE3	SOT-363	NPN+PNP	0.2	50/-50	0.1/-0.1	200/200	450/450	5/-5	2/-2	0.25	100/100	150
DMMT3904HE3	SOT-363	NPN*2	0.2	60	0.2	100	300	1	10	0.3	250	150

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Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _C (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _C (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
MMDT3904HE3	SOT-363	NPN*2	0.2	60	0.2	100	300	1	10	0.3	300	150
MMDT3946HE3	SOT-363	NPN+PNP	0.2	60/-40	0.2/-0.2	100/100	300/300	1/-1	10/-10	0.3/-0.4	300/250	150
MMDT2222AHE3	SOT-363	NPN*2	0.2	75	0.6	100	300	10	150	1	250	150
MMDT2227HE3	SOT-363	NPN+PNP	0.2	75/-60	0.6/-0.6	100/100	300/300	10/-10	150/-150	0.3/-0.4	250/250	150
BC846BSHE3	SOT-363	NPN*2	0.2	80	0.1	200	450	5	2	0.1	100	150
BC846BPNHE3	SOT-363	NPN+PNP	0.2	80/-80	0.1/-0.1	200/200	450/450	5/-5	2/-2	0.25/-0.3	100/100	150
MMDT5551HE3	SOT-363	NPN*2	0.2	180	0.6	100	300	5	10	0.15	250	150
MMDT5451HE3	SOT-363	NPN+PNP	0.2	180/-160	0.2/-0.2	100/100	300/300	5/-5	10/-10	0.15/-0.2	100/100	150
MMDT5401HE3	SOT-363	PNP*2	0.2	-160	-0.6	100	300	-5	-10	-0.5	250	150
BC856BSHE3	SOT-363	PNP*2	0.2	-80	-0.1	220	475	-5	-2	-0.65	100	150
MMDT2907AHE3	SOT-363	PNP*2	0.2	-60	-0.6	100	-	-10	-10	-0.4	200	150
BC857BSHE3	SOT-363	PNP*2	0.2	-50	-0.2	200	475	-5	-2	-0.65	100	150
MMDT3906HE3	SOT-363	PNP*2	0.2	-40	-0.2	100	300	-1	-10	-0.25	250	150
BCX56-16HE3	SOT-89	NPN	0.5	80	1	100	250	2	150	0.5	130	150
BCX53-16HE3	SOT-89	PNP	0.5	-80	-1	100	250	-2	-150	-0.5	50	150

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Pre-Biased Transistors

Part Number	Package	Polarity	Power Dissipation	Output Current	Supply Voltage	Input Resistance		Transition Frequency	Operating Junction Temperature
			P _o (mW)	I _o (mA)	V _{cc} (V)	R _i (KΩ)	R _e (KΩ)	F _t (MHZ)	T _j (°C)
DTC114ECAHE3	SOT-23	NPN	200	100	50	10	10	250	150
DTC114YCAHE3	SOT-23	NPN	200	100	50	10	47	250	150
DTC123JCAHE3	SOT-23	NPN	200	100	50	2.2	47	200	150
DTC123YCAHE3	SOT-23	NPN	200	100	50	2.2	10	200	150
DTC124ECAHE3	SOT-23	NPN	200	100	50	22	22	250	150
DTC143ECAHE3	SOT-23	NPN	200	100	50	4.7	4.7	250	150
DTC143ZCAHE3	SOT-23	NPN	200	100	50	4.7	47	250	150
DTC144ECAHE3	SOT-23	NPN	200	100	50	47	47	250	150
DTA114ECAHE3	SOT-23	PNP	200	-100	-50	10	10	250	150
DTA114YCAHE3	SOT-23	PNP	200	-100	-50	10	47	250	150
DTA123JCAHE3	SOT-23	PNP	200	-100	-50	2.2	47	200	150
DTA124ECAHE3	SOT-23	PNP	200	-100	-50	22	22	200	150
DTA143ECAHE3	SOT-23	PNP	200	-100	-50	4.7	4.7	250	150
DTA143ZCAHE3	SOT-23	PNP	200	-100	-50	4.7	47	250	150
DTA144ECAHE3	SOT-23	PNP	200	-100	-50	47	47	250	150
DTC114EUAHE3	SOT-323	NPN	200	100	50	10	10	250	150
DTC114YUAHE3	SOT-323	NPN	200	100	50	10	47	250	150
DTC123JUAHE3	SOT-323	NPN	200	100	50	2.2	47	200	150
DTC123YUAHE3	SOT-323	NPN	200	100	50	2.2	10	200	150
DTC124EUAHE3	SOT-323	NPN	200	100	50	22	22	250	150
DTC143EUAHE3	SOT-323	NPN	200	100	50	4.7	4.7	250	150
DTC143ZUAHE3	SOT-323	NPN	200	100	50	4.7	47	250	150
DTC144EUAHE3	SOT-323	NPN	200	100	50	47	47	250	150
DTA114EUAHE3	SOT-323	PNP	200	-100	-50	10	10	250	150
DTA114YUAHE3	SOT-323	PNP	200	-100	-50	10	47	250	150
DTA123JUAHE3	SOT-323	PNP	200	-100	-50	2.2	47	200	150
DTA124EUAHE3	SOT-323	PNP	200	-100	-50	22	22	200	150
DTA143EUAHE3	SOT-323	PNP	200	-100	-50	4.7	4.7	250	150
DTA143ZUAHE3	SOT-323	PNP	200	-100	-50	4.7	47	250	150
DTA144EUAHE3	SOT-323	PNP	200	-100	-50	47	47	250	150
UMH10NHE3	SOT-363	NPN*2	150	100	50	2.2	47	250	150
UMH11NHE3	SOT-363	NPN*2	150	100	50	10	10	250	150
UMH13NHE3	SOT-363	NPN*2	150	100	50	4.7	47	250	150
UMH1NHE3	SOT-363	NPN*2	150	100	50	22	22	250	150
UMH2NHE3	SOT-363	NPN*2	150	100	50	47	47	200	150
UMH9NHE3	SOT-363	NPN*2	150	100	50	10	47	250	150
UMD10NHE3	SOT-363	NPN+PNP	150	100/-100	50/-50	2.2	47	200	150
UMD12NHE3	SOT-363	NPN+PNP	150	100/-100	50/-50	47	47	250	150
UMD15NHE3	SOT-363	NPN+PNP	150	100/-100	50/-50	4.7	4.7	250	150
UMD22NHE3	SOT-363	NPN+PNP	200	100/-100	50/-50	4.7	47	250	150
UMD2NHE3	SOT-363	NPN+PNP	150	100/-100	50/-50	22	22	250	150
UMD3NHE3	SOT-363	NPN+PNP	200	100/-100	50/-50	10	10	250	150
UMD9NHE3	SOT-363	NPN+PNP	200	100/-100	50/-50	10	47	250	150

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Small Signal Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CEO} (V)	I _c (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _c (mA)	V _{CE(sat)} (V)	F _t (MHz)	T _j (°C)
BC848AL3	DFN1006-3	NPN	0.15	30	0.1	110	220	5	2	0.6	100	150
BC848BL3	DFN1006-3	NPN	0.15	30	0.1	200	450	5	2	0.6	100	150
BC848CL3	DFN1006-3	NPN	0.15	30	0.1	420	800	5	2	0.6	100	150
BC847AL3	DFN1006-3	NPN	0.15	50	0.1	110	220	5	2	0.6	100	150
BC847BL3	DFN1006-3	NPN	0.15	50	0.1	200	450	5	2	0.6	100	150
BC847CL3	DFN1006-3	NPN	0.15	50	0.1	420	800	5	2	0.6	100	150
MMBT3904L3	DFN1006-3	NPN	0.15	60	0.2	100	300	1	10	0.3	300	150
BC846AL3	DFN1006-3	NPN	0.15	80	0.1	110	220	5	2	0.6	100	150
BC846BL3	DFN1006-3	NPN	0.15	80	0.1	200	450	5	2	0.6	100	150
BC856AL3	DFN1006-3	PNP	0.15	-80	-0.1	110	220	-5	-2	-0.65	100	150
BC856BL3	DFN1006-3	PNP	0.15	-80	-0.1	200	450	-5	-2	-0.65	100	150
BC857AL3	DFN1006-3	PNP	0.15	-50	-0.1	110	220	-5	-2	-0.65	100	150
BC857BL3	DFN1006-3	PNP	0.15	-50	-0.1	200	450	-5	-2	-0.65	100	150
BC857CL3	DFN1006-3	PNP	0.15	-50	-0.1	420	800	-5	-2	-0.65	100	150
MMBT3906L3	DFN1006-3	PNP	0.15	-40	-0.2	100	300	-1	-10	-0.4	250	150
BC858AL3	DFN1006-3	PNP	0.15	-30	-0.1	110	220	-5	-2	-0.65	100	150
BC858BL3	DFN1006-3	PNP	0.15	-30	-0.1	200	450	-5	-2	-0.65	100	150
BC858CL3	DFN1006-3	PNP	0.15	-30	-0.1	420	800	-5	-2	-0.65	100	150
2SC2411-Q	SOT-23	NPN	0.2	-40	0.5	120	270	3	100	0.4	250	150
BC848A	SOT-23	NPN	0.2	30	0.1	110	220	5	2	0.5	100	150
BC848B	SOT-23	NPN	0.2	30	0.1	200	450	5	2	0.5	100	150
BC848C	SOT-23	NPN	0.2	30	0.1	420	800	5	2	0.5	100	150
BC849B	SOT-23	NPN	0.2	30	0.1	200	450	5	2	0.5	100	150
BC849C	SOT-23	NPN	0.2	30	0.1	420	800	5	2	0.5	100	150
MMBTA13	SOT-23	NPN	0.225	30	0.3	5000	-	5	10	1.5	125	150
MMBTA14	SOT-23	NPN	0.225	30	0.3	10000	-	5	10	1.5	125	150
MMBTH10	SOT-23	NPN	0.225	30	0.05	60	-	10	4	0.5	650	150
2SC2859-Y	SOT-23	NPN	0.15	35	0.5	120	240	1	100	0.25	300	150
2SC2411-R	SOT-23	NPN	0.2	40	0.5	180	390	3	100	0.4	250	150
FMMT4230	SOT-23	NPN	0.3	40	2	350	-	2	100	0.7	100	150
FMMT4240	SOT-23	NPN	0.3	40	2	350	-	2	100	0.7	100	150
FMMT491B	SOT-23	NPN	0.3	40	1	300	-	5	1	0.2	150	150
MMS8050-H	SOT-23	NPN	0.3	40	0.5	200	350	1	50	0.6	150	150
MMS8050A-H	SOT-23	NPN	0.3	40	0.5	200	350	1	50	0.6	150	150
MMS8050A-L	SOT-23	NPN	0.3	40	0.5	120	200	1	50	0.6	150	150
MMS9013-H	SOT-23	NPN	0.3	40	0.5	200	350	1	50	0.6	150	150
MMS9013-L	SOT-23	NPN	0.3	40	0.5	120	200	1	50	0.6	150	150
MMSS8050-H	SOT-23	NPN	0.3	40	1.5	200	350	1	100	0.5	100	150
MMSS8050-L	SOT-23	NPN	0.3	40	1.5	120	200	1	100	0.5	100	150
MS8050-H	SOT-23	NPN	0.3	40	0.8	200	300	1	5	0.5	150	150
MS8050-L	SOT-23	NPN	0.3	40	0.8	80	200	1	5	0.5	150	150
BCX70J	SOT-23	NPN	0.25	45	0.2	250	460	5	2	0.35	100	150
BC817-16	SOT-23	NPN	0.3	50	0.5	100	250	1	100	0.7	100	150
BC817-25	SOT-23	NPN	0.3	50	0.5	160	400	1	100	0.7	100	150

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Small Signal Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _c (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _c (mA)	V _{CE(sat)} (V)	F _T (MHz)	T _J (°C)
BC817-40	SOT-23	NPN	0.3	50	0.5	250	600	1	100	0.7	100	150
BC817K-25	SOT-23	NPN	0.5	50	0.5	160	400	1	100	0.7	100	150
BC847A	SOT-23	NPN	0.2	50	0.1	110	220	5	2	0.5	100	150
BC847B	SOT-23	NPN	0.2	50	0.1	200	450	5	2	0.5	100	150
BC847C	SOT-23	NPN	0.2	50	0.1	420	800	5	2	0.5	100	150
MMS9014-H	SOT-23	NPN	0.4	50	0.1	450	1000	5	1	0.3	150	150
MMS9014-L	SOT-23	NPN	0.4	50	0.1	200	450	5	1	0.3	150	150
2SC1623-L5	SOT-23	NPN	0.2	60	0.1	135	270	6	1	0.3	250	150
2SC1623-L6	SOT-23	NPN	0.2	60	0.1	200	400	6	1	0.3	250	150
2SC1623-L7	SOT-23	NPN	0.2	60	0.1	300	600	6	1	0.3	250	150
2SC2412-R	SOT-23	NPN	0.2	60	0.15	180	390	6	1	0.4	150	150
2SC2412-S	SOT-23	NPN	0.2	60	0.15	270	560	6	1	0.4	150	150
2SC2712-Y	SOT-23	NPN	0.15	60	0.15	120	240	6	2	0.1	80	150
KTC3875-GR	SOT-23	NPN	0.15	60	0.15	200	400	6	2	0.25	80	150
KTC3875-Y	SOT-23	NPN	0.15	60	0.15	120	240	6	2	0.25	80	150
MMBT1815-H	SOT-23	NPN	0.2	60	0.15	200	400	6	2	0.25	80	150
MMBT3904	SOT-23	NPN	0.35	60	0.2	100	300	1	10	0.2	300	150
MMBT4401	SOT-23	NPN	0.35	60	0.6	80	-	1	10	0.4	250	150
MMBTA05	SOT-23	NPN	0.3	60	0.5	100	-	1	10	0.25	100	150
BCW66F	SOT-23	NPN	0.2	75	0.8	100	250	1	100	0.3	100	150
BCW66G	SOT-23	NPN	0.2	75	0.8	110	-	1	10	0.3	100	150
BCW66H	SOT-23	NPN	0.33	75	0.8	180	-	1	10	0.3	100	150
MMBT2222A	SOT-23	NPN	0.35	75	0.6	75	-	10	10	0.3	300	150
BC846A	SOT-23	NPN	0.2	80	0.1	110	220	5	2	0.5	100	150
BC846B	SOT-23	NPN	0.2	80	0.1	200	450	5	2	0.5	100	150
BC846C	SOT-23	NPN	0.2	80	0.1	428	800	5	2	0.5	100	150
BCV47	SOT-23	NPN	0.3	80	0.5	2000	-	1	0.1	1	170	150
FMMT491	SOT-23	NPN	0.5	80	1	80	-	5	1000	0.5	150	150
MMBT3820	SOT-23	NPN	0.3	80	1	200	-	5	1	0.12	150	150
MMBTA06	SOT-23	NPN	0.3	80	0.5	100	-	1	10	0.25	100	150
MMBTA28	SOT-23	NPN	0.2	80	0.5	10000	-	5	10	1.5	125	150
FMMT493	SOT-23	NPN	0.25	120	1	20	-	10	1000	0.3	150	150
MMBT5550	SOT-23	NPN	0.225	160	0.6	60	250	5	10	0.15		150
FMMT495	SOT-23	NPN	0.3	170	1	140	-	5	200	0.3	140	150
MMBT5551	SOT-23	NPN	0.3	180	0.6	100	300	5	10	0.2	100	150
MMBTA42	SOT-23	NPN	0.35	300	0.5	40	-	10	10	0.5	50	150
MMBTA44	SOT-23	NPN	0.35	400	0.1	40	-	10	1	0.75	50	150
MMBTA92	SOT-23	PNP	0.3	-300	-0.3	100	200	-10	-10	-0.2	50	150
MMBT5401	SOT-23	PNP	0.3	-160	-0.6	100	300	-5	-10	-0.5	100	150
FMMT593	SOT-23	PNP	0.25	-120	-1	100	300	-5	-500	-0.3	150	150
BC856A	SOT-23	PNP	0.31	-80	-0.1	125	250	-5	-2	-0.3	200	150
BC856B	SOT-23	PNP	0.31	-80	-0.1	220	475	-5	-2	-0.3	200	150
FMMT591	SOT-23	PNP	0.5	-80	-1	100	300	-5	-500	-0.6	150	150
MMBTA56	SOT-23	PNP	0.225	-80	-0.5	100	-	-1	-10	-0.25	50	150

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Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _c (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _c (mA)	V _{CE(sat)} (V)	F _T (MHz)	T _J (°C)
2SA1037-R	SOT-23	PNP	0.2	-60	-0.15	180	390	-6	-1	-0.5	120	150
2SA812-M6	SOT-23	PNP	0.2	-60	-0.1	200	400	-6	-1	-0.3	180	150
2SA812-M7	SOT-23	PNP	0.2	-60	-0.1	300	600	-6	-1	-0.3	180	150
BCW68G	SOT-23	PNP	0.33	-60	-0.8	160	240	-1	-100	-0.3	200	150
BCW68H	SOT-23	PNP	0.33	-60	-0.8	250	630	-2	-100	-0.3	100	150
MMBT2907A	SOT-23	PNP	0.35	-60	-0.6	100	-	-10	-10	-0.4	200	150
MMBTA55	SOT-23	PNP	0.225	-60	-0.5	100	-	-1	-10	-0.25	50	150
BC807-16	SOT-23	PNP	0.3	-50	-0.5	100	250	-1	-100	-0.7	100	150
BC807-25	SOT-23	PNP	0.3	-50	-0.5	160	400	-1	-100	-0.7	100	150
BC807-40	SOT-23	PNP	0.3	-50	-0.5	250	600	-1	-100	-0.7	100	150
BC857A	SOT-23	PNP	0.31	-50	-0.1	125	250	-5	-2	-0.3	200	150
BC857B	SOT-23	PNP	0.31	-50	-0.1	220	475	-5	-2	-0.3	200	150
BC857C	SOT-23	PNP	0.31	-50	-0.1	420	800	-5	-2	-0.3	200	150
MMS9015-H	SOT-23	PNP	0.2	-50	-0.1	450	1000	-5	-1	-0.3	150	150
MMS9015-L	SOT-23	PNP	0.2	-50	-0.1	200	450	-5	-1	-0.3	150	150
FMMT5240	SOT-23	PNP	0.3	-40	-2	300	-	-2	-100	-0.1	100	150
FMMT591B	SOT-23	PNP	0.3	-40	-1	300	-	-5	-1	-0.2	150	150
MMBT3906	SOT-23	PNP	0.3	-40	-0.2	100	300	-1	-10	-0.25	250	150
MMBT4403	SOT-23	PNP	0.35	-40	-0.6	100	-	-1	-10	-0.4	200	150
MMS8550-H	SOT-23	PNP	0.3	-40	-0.5	200	350	-1	-50	-0.6	150	150
MMS8550-L	SOT-23	PNP	0.3	-40	-0.5	120	200	-1	-50	-0.6	150	150
MMS8550A-H	SOT-23	PNP	0.3	-40	-0.5	200	350	-1	-50	-0.6	150	150
MMS8550A-L	SOT-23	PNP	0.3	-40	-0.5	120	200	-1	-50	-0.6	150	150
MMS9012-H	SOT-23	PNP	0.3	-40	-0.5	200	350	-1	-50	-0.6	150	150
MMS9012-L	SOT-23	PNP	0.3	-40	-0.5	120	200	-1	-50	-0.6	150	150
MMS8550-H	SOT-23	PNP	0.3	-40	-1.5	200	350	-1	-100	-0.5	100	150
MMS8550-L	SOT-23	PNP	0.3	-40	-1.5	120	200	-1	-100	-0.5	100	150
2SA1298-Y	SOT-23	PNP	0.2	-35	-0.8	160	320	-1	-100	-0.4	250	150
BC858A	SOT-23	PNP	0.31	-30	-0.1	125	250	-5	-2	-0.3	200	150
BC858B	SOT-23	PNP	0.31	-30	-0.1	220	475	-5	-2	-0.3	200	150
BC858C	SOT-23	PNP	0.31	-30	-0.1	420	800	-5	-2	-0.3	200	150
FMMT5130	SOT-23	PNP	0.3	-30	-1	300	-	-2	-100	-0.1	100	150
MMBTA63	SOT-23	PNP	0.3	-30	-0.5	5000	-	-5	-10	-1.5	125	150
MMBTA64	SOT-23	PNP	0.3	-30	-0.5	10000	-	-5	-10	-1.5	125	150
FMMT619L	SOT-23-3L	NPN	0.2	50	2	200	-	2	10	0.02	100	150
MMBTA28L	SOT-23-3L	NPN	0.2	80	0.5	10000	-	5	10	1.2	125	150
2SAR512L	SOT-23-3L	PNP	0.2	-30	-2	200	500	-2	-100	-0.4	350	150
BC817DS	SOT23-6L	NPN*2	0.3	50	0.5	160	400	1	100	0.7	100	150
BC846DS	SOT23-6L	NPN*2	0.3	80	0.1	200	450	5	2	0.3	100	150
SMBT5551	SOT23-6L	NPN*2	0.3	180	0.6	100	250	5	10	0.15	300	150
BC817DPN	SOT23-6L	NPN+PNP	0.37	50/-50	0.5/-0.5	160/160	400/400	1/-1	100/-100	0.7/-0.7	100/80	150
SMBT2227A	SOT23-6L	NPN+PNP	0.7	75/-60	0.6/-0.6	100/100	300/300	10/-10	150/-150	0.3/-0.4	300/200	150
SMBT445V6A	SOT23-6L	NPN+Zener	0.38	50	0.5	250	600	1	0.1	0.7	100	150
SMBT445V6	SOT23-6L	NPN+Zener	0.38	60	0.6	100	300	1	0.15	0.4	250	150

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Part Number	Package	Polarity	Power Dissipation P_c (W)	Collector-Emitter Breakdown Voltage $V_{ce0}(V)$	Collector Current I_c (A)	DC Current Gain				Base-Emitter Saturation Voltage $V_{ce(sat)}(V)$	Transition Frequency f_T (MHz)	Operating Junction Temperature T_j (°C)
						$H_{FE}(min)$	$H_{FE}(max)$	$V_{CE}(V)$	I_c (mA)			
BC856DS	SOT23-6L	PNP*2	0.3	-80	-0.1	200	480	-5	-2	-0.65	100	150
SMBT2907A	SOT23-6L	PNP*2	0.7	-60	-0.6	100	300	-10	-150	-0.4	200	150
BC807DS	SOT23-6L	PNP*2	0.3	-50	-0.5	160	400	-1	-100	-0.7	80	150
BC848AW	SOT-323	NPN	0.2	30	0.1	110	220	5	2	0.25	100	150
BC848BW	SOT-323	NPN	0.2	30	0.1	200	450	5	2	0.25	100	150
BC848CW	SOT-323	NPN	0.2	30	0.1	420	800	5	2	0.25	100	150
2SC4097-P	SOT-323	NPN	0.2	40	0.5	82	180	3	10	0.4	250	150
2SC4097-Q	SOT-323	NPN	0.2	40	0.5	120	270	3	10	0.4	250	150
2SC4097-R	SOT-323	NPN	0.2	40	0.5	180	390	3	10	0.4	250	150
MMSS8050W-H	SOT-323	NPN	0.2	40	1.5	200	350	1	100	0.5	100	150
MMSS8050W-L	SOT-323	NPN	0.2	40	1.5	120	200	1	100	0.5	100	150
BC817-16W	SOT-323	NPN	0.2	50	0.5	100	250	1	100	0.7	100	150
BC817-25W	SOT-323	NPN	0.2	50	0.5	160	400	1	100	0.7	100	150
BC817-40W	SOT-323	NPN	0.2	50	0.5	250	600	1	100	0.7	100	150
BC847AW	SOT-323	NPN	0.2	50	0.1	110	220	5	2	0.25	100	150
BC847BW	SOT-323	NPN	0.2	50	0.1	200	450	5	2	0.25	100	150
BC847CW	SOT-323	NPN	0.2	50	0.1	420	800	5	2	0.25	100	150
2SC4081-A	SOT-323	NPN	0.2	60	0.15	120	270	6	1	0.4	180	150
2SC4081-B	SOT-323	NPN	0.2	60	0.15	180	390	6	1	0.4	180	150
MMST3904	SOT-323	NPN	0.2	60	0.2	100	300	1	10	0.3	300	150
MMST4401	SOT-323	NPN	0.2	60	0.6	100	300	2	500	0.4	250	150
MMSTA05	SOT-323	NPN	0.2	60	0.5	100	400	1	10	0.25	100	150
MMST2222A	SOT-323	NPN	0.2	75	0.6	100	300	10	150	0.6	300	150
BC846AW	SOT-323	NPN	0.2	80	0.1	110	220	5	2	0.25	100	150
BC846BW	SOT-323	NPN	0.2	80	0.1	200	450	5	2	0.25	100	150
MMSTA06	SOT-323	NPN	0.2	80	0.5	100	400	1	10	0.25	100	150
MMST5551	SOT-323	NPN	0.2	180	0.2	30	-	5	50	0.2	300	150
MMSTA42	SOT-323	NPN	0.2	300	0.2	40	-	10	10	0.5	50	150
MMSTA92	SOT-323	PNP	0.2	-300	-0.1	40	-	-10	-10	-0.4	50	150
MMST5401	SOT-323	PNP	0.2	-160	-0.2	60	300	-5	-10	-0.5	300	150
BC856AW	SOT-323	PNP	0.2	-80	-0.1	125	250	-5	-2	-0.65	100	150
BC856BW	SOT-323	PNP	0.2	-80	-0.1	220	475	-5	-2	-0.65	100	150
MMSTA56	SOT-323	PNP	0.2	-80	-0.5	100	-	-1	-10	-0.25	100	150
2SA1576A-Q	SOT-323	PNP	0.2	-60	-0.15	120	270	-6	-1	-0.5	100	150
2SA1576A-R	SOT-323	PNP	0.2	-60	-0.15	180	390	-6	-1	-0.5	100	150
MMST2907A	SOT-323	PNP	0.2	-60	-0.6	100	-	-10	-1	-1.6	200	150
BC807-16W	SOT-323	PNP	0.2	-50	-0.5	100	250	-1	-100	-0.7	80	150
BC807-25W	SOT-323	PNP	0.2	-50	-0.5	160	400	-1	-100	-0.7	80	150
BC807-40W	SOT-323	PNP	0.2	-50	-0.5	250	600	-1	-100	-0.7	80	150
BC857AW	SOT-323	PNP	0.2	-50	-0.1	125	250	-5	-2	-0.65	100	150
BC857BW	SOT-323	PNP	0.2	-50	-0.1	220	475	-5	-2	-0.65	100	150
BC857CW	SOT-323	PNP	0.2	-50	-0.1	420	800	-5	-2	-0.65	100	150
2SA1577-R	SOT-323	PNP	0.2	-40	-0.5	180	390	-3	-10	-0.4	200	150
MMSS8550W-H	SOT-323	PNP	0.2	-40	-1.5	200	350	-1	-100	-0.5	100	150

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Part Number	Package	Polarity	Power Dissipation P_c (W)	Collector-Emitter Breakdown Voltage $V_{ce0}(V)$	Collector Current I_c (A)	DC Current Gain				Base-Emitter Saturation Voltage $V_{ce(sat)}(V)$	Transition Frequency f_T (MHz)	Operating Junction Temperature T_j (°C)
						$H_{FE}(min)$	$H_{FE}(max)$	$V_{CE}(V)$	I_c (mA)			
MMST3906	SOT-323	PNP	0.2	-40	-0.2	100	300	-1	-10	-0.3	300	150
MMST4403	SOT-323	PNP	0.2	-40	-0.6	100	300	-2	-150	-0.4	200	150
BC858AW	SOT-323	PNP	0.2	-30	-0.1	125	250	-5	-2	-0.65	100	150
BC858BW	SOT-323	PNP	0.2	-30	-0.1	220	475	-5	-2	-0.65	100	150
BC858CW	SOT-323	PNP	0.2	-30	-0.1	420	800	-5	-2	-0.65	100	150
BC847BS	SOT-363	NPN*2	0.3	50	0.1	200	450	5	2	0.6	100	150
DMMT3904	SOT-363	NPN*2	0.2	60	0.2	100	300	1	10	0.3	300	150
MMDT3904	SOT-363	NPN*2	0.2	60	0.2	100	300	1	10	0.3	300	150
MMDT4401	SOT-363	NPN*2	0.2	60	0.6	40	-	2	500	0.75	250	150
UMX1N	SOT-363	NPN*2	0.15	60	0.15	120	560	6	1	0.4	180	150
MMDT2222A	SOT-363	NPN*2	0.15	75	0.6	100	300	10	150	1	300	150
BC846BS	SOT-363	NPN*2	0.2	80	0.1	200	450	5	2	0.1	80	150
BC846S	SOT-363	NPN*2	0.2	80	0.1	110	-	5	2	0.1	80	150
MMDT5551	SOT-363	NPN*2	0.2	180	0.2	100	300	5	10	0.15	300	150
MMDT5451	SOT-363	NPN+PNP	0.2	180/-160	0.2/-0.2	100/100	300/300	5/-5	10/-10	0.15/-0.2	100/100	150
BC847PN	SOT-363	NPN+PNP	0.2	50/-50	0.1/-0.1	200/200	450/450	5/-5	2/-2	0.25	100/100	150
MMDT3946	SOT-363	NPN+PNP	0.2	60/-40	0.2/-0.2	100/100	300/300	1/-1	10/-10	0.3/-0.4	300/250	150
MMDT4413	SOT-363	NPN+PNP	0.2	60/-40	0.6/-0.6	100/100	300/300	1/-2	150/-150	0.75/-0.75	250/200	150
UMZ2N	SOT-363	NPN+PNP	0.15	60/-60	0.15/-0.15	120/120	560/560	6/-6	1/-1	0.4/-0.5	180/140	150
MMDT2227	SOT-363	NPN+PNP	0.2	75/-60	0.6/-0.6	100/100	300/300	10/-10	150/-150	0.3/-0.4	300	150
BC846BPN	SOT-363	NPN+PNP	0.2	80/-80	0.1/-0.1	200/200	450/450	5/-5	2/-2	0.1/-0.3	100/100	150
MMDT5401	SOT-363	PNP*2	0.2	-160	-0.2	100	300	-5	-10	-0.5	300	150
BC856BS	SOT-363	PNP*2	0.2	-80	-0.1	200	450	-5	-2	-0.3	100	150
BC856S	SOT-363	PNP*2	0.2	-80	-0.1	110	-	-5	-2	-0.3	100	150
MMDT2907A	SOT-363	PNP*2	0.2	-60	-0.6	100	-	-10	-10	-0.4	200	150
UMT1N	SOT-363	PNP*2	0.15	-60	-0.15	120	560	-6	-1	-0.5	140	150
BC857BS	SOT-363	PNP*2	0.3	-50	-0.2	220	475	-5	-2	-0.3	200	150
BC857S	SOT-363	PNP*2	0.3	-50	-0.2	125	630	-5	-2	-0.3	200	150
DMMT3906	SOT-363	PNP*2	0.2	-40	-0.2	100	300	-1	-10	-0.4	250	150
MMDT3906	SOT-363	PNP*2	0.2	-40	-0.2	100	300	-1	-10	-0.4	250	150
MMDT4403	SOT-363	PNP*2	0.2	-40	-0.6	20	-	-2	-500	-0.75	200	150
BC847BSS	SOT-363S	NPN*2	0.2	50	0.1	200	450	5	2	0.25	100	150
MMDT3904S	SOT-363S	NPN*2	0.2	60	0.2	100	300	1	10	0.2	250	150
BC846BSS	SOT-363S	NPN*2	0.2	80	0.1	200	450	5	2	0.1	80	150
BC856SS	SOT-363S	PNP*2	0.2	-80	0.1	110	-	-5	-2	-0.65	100	150
2SC4617-R	SOT-523	NPN	0.15	50	0.15	180	390	6	1	0.4	180	150
BC847AT	SOT-523	NPN	0.15	50	0.1	110	220	5	2	0.6	100	150
BC847BT	SOT-523	NPN	0.15	50	0.1	200	450	5	2	0.6	100	150
BC847CT	SOT-523	NPN	0.15	50	0.1	420	800	5	2	0.6	100	150
MMBT3904T	SOT-523	NPN	0.15	60	0.2	100	300	1	10	0.3	300	150
MMBT2222AT	SOT-523	NPN	0.15	75	0.6	100	300	10	150	1	300	150
MMBT2222ATS	SOT-523	NPN	0.15	75	0.6	100	300	10	150	1	300	150
2SA1774-R	SOT-523	PNP	0.15	-60	-0.15	180	390	-6	-1	-0.5	140	150
MMBT2907AT	SOT-523	PNP	0.15	-60	-0.6	100	300	-10	-10	-0.4	140	150

Transistors

Small Signal Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _C (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _C (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
BC857AT	SOT-523	PNP	0.15	-50	-0.1	125	250	-5	-2	-0.65	100	150
BC857BT	SOT-523	PNP	0.15	-50	-0.1	220	475	-5	-2	-0.65	100	150
BC857CT	SOT-523	PNP	0.15	-50	-0.1	420	800	-5	-2	-0.65	100	150
MMBT3906T	SOT-523	PNP	0.15	-40	-0.2	100	300	-1	-10	-0.25	250	150
BC847BV	SOT-563	NPN*2	0.15	50	0.1	200	450	5	2	0.3	100	150
MMDT3904V	SOT-563	NPN*2	0.2	60	0.2	30	-	1	100	0.3	300	150
EMZ7	SOT-563	NPN+PNP	0.2	15/-15	0.5/-0.5	200/200	-	2/-2	10/-10	0.22/-0.22	420/280	150
BC847VPN	SOT-563	NPN+PNP	0.2	50/-50	0.1/-0.1	200/220	450/475	5/-5	2/-2	0.25/-0.3	100/100	150
MMDT3946V	SOT-563	NPN+PNP	0.15	60/-40	0.2/-0.2	100/100	300/300	1/-1	10/-10	0.3/-0.4	300/250	150
EMZ1	SOT-563	NPN+PNP	0.15	60/-60	0.15/-0.15	120/120	560/560	6/-6	1/-1	0.4/-0.5	180/140	150
MMDT2907V	SOT-563	PNP*2	0.15	-60	-0.6	100	-	-10	-1	-0.4	200	150
BC857BV	SOT-563	PNP*2	0.15	-50	-0.1	200	475	-5	-2	-0.4	100	150
BC857BVP	SOT-563	PNP*2	0.15	-50	-0.1	220	450	-5	-2	-0.4	100	150
MMDT3906V	SOT-563	PNP*2	0.15	-40	-0.2	100	300	-1	-10	-0.4	250	150
BC858CV	SOT-563	PNP*2	0.15	-30	-0.1	420	800	-5	-2	-0.3	100	150
BC848AM3	SOT-723	NPN	0.265	30	0.1	110	220	5	2	0.3	100	150
BC848BM3	SOT-723	NPN	0.265	30	0.1	200	450	5	2	0.3	100	150
BC848CM3	SOT-723	NPN	0.265	30	0.1	420	800	5	2	0.3	100	150
BC847AM3	SOT-723	NPN	0.265	50	0.1	110	220	5	2	0.3	100	150
BC847BM3	SOT-723	NPN	0.265	50	0.1	200	450	5	2	0.3	100	150
BC847CM3	SOT-723	NPN	0.265	50	0.1	420	800	5	2	0.3	100	150
BC846AM3	SOT-723	NPN	0.265	80	0.1	110	220	5	2	0.3	100	150
BC846BM3	SOT-723	NPN	0.265	80	0.1	200	450	5	2	0.3	100	150
BC856AM3	SOT-723	PNP	0.265	-80	-0.1	110	220	-5	-2	-0.3	100	150
BC856BM3	SOT-723	PNP	0.265	-80	-0.1	200	450	-5	-2	-0.3	100	150
BC857AM3	SOT-723	PNP	0.265	-50	-0.1	110	220	-5	-2	-0.3	100	150
BC857BM3	SOT-723	PNP	0.265	-50	-0.1	200	450	-5	-2	-0.3	100	150
BC857CM3	SOT-723	PNP	0.265	-50	-0.1	420	800	-5	-2	-0.3	100	150
BC858AM3	SOT-723	PNP	0.265	-30	-0.1	110	220	-5	-2	-0.3	100	150
BC858BM3	SOT-723	PNP	0.265	-30	-0.1	200	450	-5	-2	-0.3	100	150
BC858CM3	SOT-723	PNP	0.265	-30	-0.1	420	800	-5	-2	-0.3	100	150
BCV61C	SOT-143	NPN*2	0.25	30	0.1	420	800	5	2	0.6	100	150
BCV62C	SOT-143	PNP*2	0.25	-30	-0.1	420	800	-5	-2	-0.65	100	150

Transistors

Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _C (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _C (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
MCP618	DFN2020-3A	NPN	1.5	25	2.5	300	-	2	200	0.15	100	150
MJD44C	DPAK	NPN	1.25	80	8	40	-	1	4000	1	10	150
MJD31C	DPAK	NPN	1.25	100	3	10	75	4	3000	1.2	3	150
MJD31CS	DPAK	NPN	1.25	100	3	10	75	4	3000	1.2	3	150
MJD41C	DPAK	NPN	1.25	100	6	15	155	4	3	1.5	3	150
MJD122	DPAK	NPN	1.5	100	8	1000	12000	4	4000	2		150
MJD127	DPAK	PNP	1.5	-100	-8	1000	12000	-4	-4000	-2		150
MJD32C	DPAK	PNP	1.25	-100	-3	10	50	-4	-3000	-1.2	3	150
MJD45C	DPAK	PNP	1.25	-80	-8	60	-	-1	-2000	-1		150
2SB1184-Q	DPAK	PNP	1	-50	-3	120	270	-3	-500	-1	70	150
2SB1412-R	DPAK	PNP	1	-30	-5	180	390	-2	-500	-1	120	150
PZT3904	SOT-223	NPN	1	40	0.2	100	300	1	10	0.2	300	150
PZT2222A	SOT-223	NPN	1	40	0.6	100	300	10	150	0.3	300	150
BCP54-16	SOT-223	NPN	1.5	45	1	100	250	2	150	0.5	100	150
BCP55-16	SOT-223	NPN	1.5	60	1	100	250	2	150	0.5	100	150
BCP56-16	SOT-223	NPN	1.5	80	1	100	250	2	150	0.5	100	150
PZT5551	SOT-223	NPN	1	160	0.6	80	-	5	1	0.15	300	150
PZTA42	SOT-223	NPN	1	300	0.2	25	-	10	1	0.5	50	150
PZTA44	SOT-223	NPN	1	400	0.2	50	200	10	10	0.5	20	150
BCP53-16	SOT-223	PNP	1.5	-80	-1	100	250	-2	-150	-0.5	100	150
BCP52-16	SOT-223	PNP	1.5	-60	-1	100	250	-2	-150	-0.5	100	150
PZT2907A	SOT-223	PNP	1	-60	-0.6	100	300	-10	-150	-0.4	200	150
BCP51-16	SOT-223	PNP	1.5	-45	-1	100	250	-2	-150	-0.5	100	150
PXT8050-D	SOT-89	NPN	0.5	25	1.5	160	300	1	100	0.5	100	150
BD882-Y	SOT-89	NPN	0.5	30	3	160	320	2	1000	0.5	50	150
2SD1664-R	SOT-89	NPN	0.5	32	1	180	390	3	100	0.4	150	150
PXT3904	SOT-89	NPN	0.5	40	0.2	100	300	1	10	0.2	300	150
PXT2222A	SOT-89	NPN	0.5	40	0.6	100	300	10	150	0.3	300	150
BCX54	SOT-89	NPN	0.5	45	1	63	250	2	150	0.5	130	150
BCX54-16	SOT-89	NPN	0.5	45	1	100	250	2	150	0.5	130	150
2SC2873-Y	SOT-89	NPN	0.5	50	2	120	240	2	500	0.5	120	150
FMMT4350X	SOT-89	NPN	0.5	50	3	300	-	2	100	0.08	100	150
BCX55	SOT-89	NPN	0.5	60	1	63	250	2	150	0.5	130	150
BCX55-16	SOT-89	NPN	0.5	60	1	100	250	2	150	0.5	130	150
BD882HY	SOT-89	NPN	0.5	70	3	160	320	2	1000	0.5	50	150
2SD1898-R	SOT-89	NPN	0.5	80	1	180	390	3	500	0.15	100	150
BCX56	SOT-89	NPN	0.5	80	1	63	250	2	150	0.5	130	150
BCX56-16	SOT-89	NPN	0.5	80	1	100	250	2	150	0.5	130	150
2SC2881-Y	SOT-89	NPN	0.5	120	0.8	120	240	5	100	1	120	150
CXT5551	SOT-89	NPN	0.5	160	0.6	80	-	5	1	0.15	100	150
2SC2383P-O	SOT-89	NPN	0.5	160	1	100	200	5	200	1	20	150
2SC2383P-Y	SOT-89	NPN	0.5	160	1	160	320	5	200	1	20	150
PXTA44	SOT-89	NPN	0.5	400	0.3	50	200	10	10	0.4		150
2SB1013-O	SOT-89	PNP	0.5	-160	-1	100	200	-5	-200	-1.5	15	150

Transistors

Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Emitter Breakdown Voltage	Collector Current	DC Current Gain				Base-Emitter Saturation Voltage	Transition Frequency	Operating Junction Temperature
			P _c (W)	V _{CE0} (V)	I _c (A)	H _{FE} (min)	H _{FE} (max)	V _{CE} (V)	I _c (mA)	V _{CE(sat)} (V)	f _T (MHz)	T _J (°C)
2SB1013-P	SOT-89	PNP	0.5	-160	-1	160	320	-5	-200	-1.5	15	150
CXT5401	SOT-89	PNP	0.5	-150	-0.5	50	-	-5	-1	-0.2	100	150
BCX53	SOT-89	PNP	0.5	-80	-1	63	250	-2	-150	-0.5	50	150
BCX53-16	SOT-89	PNP	0.5	-80	-1	100	250	-2	-150	-0.5	50	150
BSR33	SOT-89	PNP	0.5	-80	-1	100	300	-5	-100	-0.5	100	150
BCX52	SOT-89	PNP	0.5	-60	-1	63	250	-2	-150	-0.5	50	150
BCX52-16	SOT-89	PNP	0.5	-60	-1	100	250	-2	-150	-0.5	50	150
FMMT5350X	SOT-89	PNP	0.5	-50	-3	200	-	-2	-500	-0.09	100	150
2SA1213-Y	SOT-89	PNP	0.5	-50	-2	120	240	-2	-500	-0.5	120	150
FMMT5240X	SOT-89	PNP	0.5	-40	-2	300	-	-5	-1	-0.14	100	150
PXT3906	SOT-89	PNP	0.5	-40	-0.2	100	300	-1	-10	-0.25	250	150
2SB1188-Q	SOT-89	PNP	0.5	-32	-2	120	270	-3	-500	-0.8	80	150
BD772-Y	SOT-89	PNP	0.5	-30	-3	160	320	-2	-1000	-0.5	80	150
2SB1386-R	SOT-89	PNP	0.5	-20	-5	180	390	-2	-500	-1	120	150
BC869	SOT-89	PNP	0.5	-20	-1	100	375	-1	-500	-0.5	40	150
BC869-25	SOT-89	PNP	0.5	-20	-1	160	375	-1	-500	-0.5	40	150
TIP31C	TO-220	NPN	2	100	3	25	-	4	1000	1.2	3	150
TIP122L	TO-220	NPN	2	100	5	1000	-	3	500	2	0	150
TIP41C	TO-220	NPN	2	100	6	30	-	4	300	1.5	3	150
TIP42C	TO-220	PNP	2	-100	-6	30	-	-4	-300	-1.5	3	150
TIP127L	TO-220	PNP	2	-100	-5	1000	-	-3	-500	-2	0	150
TIP32C	TO-220	PNP	2	-100	-3	25	-	-4	-1000	-1.2	3	150
TIP42A	TO-220	PNP	2	-60	-6	30	-	-4	-300	-1.5	3	150

Transistors

Pre-biased Transistors

Part Number	Package	Polarity	Power Dissipation	Output Current	Supply Voltage	Input Resistance		Transition Frequency	Operating Junction Temperature
			P _o (mW)	I _o (mA)	V _{CC} (V)	R _i (KΩ)	R _e (KΩ)	f _T (MHz)	T _J (°C)
DTC144EL3	DFN1006-3	NPN	150	100	50	47	47	200	150
DTA114EL3	DFN1006-3	PNP	150	-100	-50	10	10	145	150
DDTC113ZCA	SOT-23	NPN	250	500	50	1	10	250	150
DDTC114ECA	SOT-23	NPN	200	500	50	10	10	160	150
DDTC123ECA	SOT-23	NPN	200	500	50	2.2	2.2	160	150
DDTC123YCA	SOT-23	NPN	200	500	50	2.2	10	200	150
DDTC142TC	SOT-23	NPN	200	500	50	0.47		200	150
DDTC143ECA	SOT-23	NPN	200	500	50	4.7	4.7	160	150
DTC113ZCA	SOT-23	NPN	200	100	50	1	10	250	150
DTC114ECA	SOT-23	NPN	246	100	50	10	10	250	150
DTC114TCA	SOT-23	NPN	200	100	50	10		250	150
DTC114YCA	SOT-23	NPN	230	100	50	10	47	250	150
DTC123ECA	SOT-23	NPN	200	100	50	2.2	2.2	250	150
DTC123JCA	SOT-23	NPN	200	100	50	2.2	47	250	150
DTC123YCA	SOT-23	NPN	200	100	50	2.2	10	250	150
DTC124ECA	SOT-23	NPN	200	100	50	22	22	250	150
DTC124XCA	SOT-23	NPN	200	100	50	22	47	200	150
DTC143ECA	SOT-23	NPN	200	100	50	4.7	4.7	250	150
DTC143TCA	SOT-23	NPN	200	100	50	4.7		250	150
DTC143XCA	SOT-23	NPN	200	100	50	4.7	10	200	150
DTC143ZCA	SOT-23	NPN	246	100	50	4.7	47	250	150
DTC144ECA	SOT-23	NPN	200	100	50	47	47	250	150
DTC144TCA	SOT-23	NPN	200	100	50	47		250	150
DDTA113ZCA	SOT-23	PNP	200	-500	-50	1	10	160	150
DDTA123YCA	SOT-23	PNP	200	-500	-50	2.2	10	200	150
DDTA143ECA	SOT-23	PNP	200	-500	-50	4.7	4.7	160	150
DTA113ZCA	SOT-23	PNP	200	-100	-50	1	10	250	150
DTA114ECA	SOT-23	PNP	200	-100	-50	10	10	250	150
DTA114TCA	SOT-23	PNP	200	-100	-50	10		250	150
DTA114YCA	SOT-23	PNP	200	-100	-50	10	47	250	150
DTA115ECA	SOT-23	PNP	200	-100	-50	100	100	200	150
DTA123ECA	SOT-23	PNP	200	-100	-50	2.2	2.2	250	150
DTA123JCA	SOT-23	PNP	200	-100	-50	2.2	47	250	150
DTA123YCA	SOT-23	PNP	200	-100	-50	2.2	10	250	150
DTA124ECA	SOT-23	PNP	200	-100	-50	22	22	250	150
DTA124XCA	SOT-23	PNP	200	-100	-50	22	47	200	150
DTA143ECA	SOT-23	PNP	200	-100	-50	4.7	4.7	250	150
DTA143XCA	SOT-23	PNP	200	-100	-50	4.7	10	250	150
DTA143ZCA	SOT-23	PNP	200	-100	-50	4.7	47	250	150
DTA144ECA	SOT-23	PNP	200	-100	-50	47	47	250	150
DTA144VCA	SOT-23	PNP	200	-100	-50	47	10	200	150
DTC114EKA	SOT-23-3L	NPN	200	100	50	10	10	200	150
DTA114EKA	SOT-23-3L	PNP	200	-100	-50	10	10	200	150

Transistors

Pre-biased Transistors

Part Number	Package	Polarity	Power Dissipation	Output Current	Supply Voltage	Input Resistance		Transition frequency	Operating Junction Temperature
			P _o (mW)	I _o (mA)	V _{cc} (V)	R _i (KΩ)	R _e (KΩ)	f _t (MHZ)	T _j (°C)
DDTC113ZUA	SOT-323	NPN	200	500	50	1	10	200	150
DDTC114EUA	SOT-323	NPN	200	500	50	10	10	160	150
DDTC123EUA	SOT-323	NPN	200	500	50	2.2	2.2	160	150
DDTC123YUA	SOT-323	NPN	200	500	50	2.2	10	160	150
DDTC143EUA	SOT-323	NPN	200	500	50	4.7	4.7	160	150
DTC113ZUA	SOT-323	NPN	200	100	50	1	10	250	150
DTC114EUA	SOT-323	NPN	200	100	50	10	10	250	150
DTC114TUA	SOT-323	NPN	200	100	50	10		250	150
DTC114YUA	SOT-323	NPN	200	100	50	10	47	250	150
DTC123EUA	SOT-323	NPN	200	100	50	2.2	2.2	250	150
DTC123JUA	SOT-323	NPN	200	100	50	2.2	47	250	150
DTC123YUA	SOT-323	NPN	200	100	50	2.2	10	250	150
DTC124EUA	SOT-323	NPN	200	100	50	22	22	250	150
DTC124XUA	SOT-323	NPN	200	100	50	22	47	200	150
DTC143EUA	SOT-323	NPN	200	100	50	4.7	4.7	250	150
DTC143TUA	SOT-323	NPN	200	100	50	4.7		250	150
DTC143XUA	SOT-323	NPN	200	100	50	4.7	10	250	150
DTC143ZUA	SOT-323	NPN	200	100	50	4.7	47	250	150
DTC144EUA	SOT-323	NPN	200	100	50	47	47	250	150
DTC144TUA	SOT-323	NPN	200	100	50	47		250	150
DDTA113ZUA	SOT-323	PNP	200	-500	-50	1	10	200	150
DTA113ZUA	SOT-323	PNP	200	-100	-50	1	10	200	150
DTA114EUA	SOT-323	PNP	200	-100	-50	10	10	250	150
DTA114TUA	SOT-323	PNP	200	-100	-50	10		250	150
DTA114YUA	SOT-323	PNP	200	-100	-50	10	47	250	150
DTA115EUA	SOT-323	PNP	200	-100	-50	100	100	200	150
DTA123EUA	SOT-323	PNP	200	-100	-50	2.2	2.2	250	150
DTA123JUA	SOT-323	PNP	200	-100	-50	2.2	47	250	150
DTA123YUA	SOT-323	PNP	200	-100	-50	2.2	10	250	150
DTA124EUA	SOT-323	PNP	200	-100	-50	22	22	250	150
DTA124XUA	SOT-323	PNP	200	-100	-50	22	47	200	150
DTA143EUA	SOT-323	PNP	200	-100	-50	4.7	4.7	250	150
DTA143XUA	SOT-323	PNP	200	-100	-50	4.7	10	250	150
DTA143ZUA	SOT-323	PNP	200	-100	-50	4.7	47	250	150
DTA144EUA	SOT-323	PNP	200	-100	-50	47	47	250	150
DTA144VUA	SOT-323	PNP	200	-100	-50	47	10	200	150
UMH10N	SOT-363	NPN*2	150	100	50	2.2	47	250	150
UMH11N	SOT-363	NPN*2	150	100	50	10	10	250	150
UMH13N	SOT-363	NPN*2	150	100	50	4.7	47	250	150
UMH15N	SOT-363	NPN*2	150	100	50	4.7	4.7	250	150
UMH18N	SOT-363	NPN*2	200	100	50	4.7	10	250	150
UMH1N	SOT-363	NPN*2	150	100	50	22	22	250	150
UMH2N	SOT-363	NPN*2	150	100	50	47	47	250	150

Transistors

Pre-biased Transistors

Part Number	Package	Polarity	Power Dissipation	Output Current	Supply Voltage	Input Resistance		Transition frequency	Operating Junction Temperature
			P _o (mW)	I _o (mA)	V _{cc} (V)	R _i (KΩ)	R _e (KΩ)	f _t (MHZ)	T _j (°C)
UMH9N	SOT-363	NPN*2	150	100	50	10	47	250	150
UMD10N	SOT-363	NPN+PNP	150	100/-100	50/-50	2.2	47	250	150
UMD11N	SOT-363	NPN+PNP	150	100/-100	50/-50	10	10	200	150
UMD12N	SOT-363	NPN+PNP	150	100/-100	50/-50	47	47	250	150
UMD13N	SOT-363	NPN+PNP	150	100/-100	50/-50	4.7	47	200	150
UMD15N	SOT-363	NPN+PNP	150	100/-100	50/-50	4.7	4.7	250	150
UMD16N	SOT-363	NPN+PNP	150	100/-100	50/-50	22	47	200	150
UMD18N	SOT-363	NPN+PNP	150	100/-100	50/-50	4.7	10	200	150
UMD22N	SOT-363	NPN+PNP	150	100/-100	50/-50	4.7	47	250	150
UMD2N	SOT-363	NPN+PNP	150	100/-100	50/-50	22	22	250	150
UMD3N	SOT-363	NPN+PNP	150	100/-100	50/-50	10	10	250	150
UMD9N	SOT-363	NPN+PNP	150	100/-100	50/-50	10	47	250	150
UMF21N	SOT-363	NPN+PNP	150	100/-100	50	10	10	250	150
UMB10N	SOT-363	PNP*2	150	-100	-50	2.2	47	200	150
UMB11N	SOT-363	PNP*2	150	-100	-50	10	10	200	150
UMB13N	SOT-363	PNP*2	150	-100	-50	4.7	47	200	150
UMB18N	SOT-363	PNP*2	150	-100	-50	4.7	10	200	150
UMB1N	SOT-363	PNP*2	150	-100	-50	22	22	200	150
UMB2N	SOT-363	PNP*2	150	-100	-50	47	47	200	150
UMB4N	SOT-363	PNP*2	150	-100	-50	10		250	150
UMB9N	SOT-363	PNP*2	150	-100	-50	10	47	200	150
UMD12NS	SOT-363S	NPN+PNP	150	100/-100	50/-50	47	47	200	150
UMD2NS	SOT-363S	NPN+PNP	150	100/-100	50/-50	22	22	200	150
UMB2NS	SOT-363S	PNP*2	150	-100	-50	47	47	200	150
DTC114EE	SOT-523	NPN	150	100	50	10	10	250	150
DTC114TE	SOT-523	NPN	150	100	50	10		250	150
DTC114WE	SOT-523	NPN	150	100	50	10	4.7	200	150
DTC114YE	SOT-523	NPN	150	100	50	10	47	250	150
DTC123EE	SOT-523	NPN	150	100	50	2.2	2.2	200	150
DTC123JE	SOT-523	NPN	150	100	50	2.2	47	250	150
DTC123YE	SOT-523	NPN	150	100	50	2.2	10	200	150
DTC124EE	SOT-523	NPN	150	100	50	22	22	250	150
DTC124XE	SOT-523	NPN	150	100	50	22	47	200	150
DTC143EE	SOT-523	NPN	150	100	50	4.7	4.7	250	150
DTC143TE	SOT-523	NPN	150	100	50	4.7		250	150
DTC143XE	SOT-523	NPN	150	100	50	4.7	10	200	150
DTC143ZE	SOT-523	NPN	150	100	50	4.7	47	250	150
DTC144EE	SOT-523	NPN	150	100	50	47	47	250	150
DTC144TE	SOT-523	NPN	150	100	50	47		250	150
DTA113ZE	SOT-523	PNP	150	-100	-50	1	10	200	150
DTA114EE	SOT-523	PNP	150	-100	-50	10	10	250	150
DTA114TE	SOT-523	PNP	150	-100	-50	10		250	150
DTA114YE	SOT-523	PNP	150	-100	-50	10	47	200	150

Pre-biased Transistors

Part Number	Package	Polarity	Power Dissipation	Output Current	Supply Voltage	Input Resistance		Transition frequency	Operating Junction Temperature
			P _o (mW)	I _o (mA)	V _{cc} (V)	R _i (KΩ)	R _e (KΩ)	f _t (MHZ)	T _j (°C)
DTA123JE	SOT-523	PNP	150	-100	-50	2.2	47	250	150
DTA124EE	SOT-523	PNP	150	-100	-50	22	22	250	150
DTA143EE	SOT-523	PNP	150	-100	-50	4.7	4.7	250	150
DTA143XE	SOT-523	PNP	150	-100	-50	4.7	10	200	150
DTA143ZE	SOT-523	PNP	150	-100	-50	4.7	47	250	150
DTA144EE	SOT-523	PNP	150	-100	-50	47	47	250	150
DTA144VE	SOT-523	PNP	150	-100	-50	47	10	200	150
EMH1	SOT-563	NPN*2	150	100	50	22	22	200	150
EMH10	SOT-563	NPN*2	150	100	50	2.2	47	250	150
EMH11	SOT-563	NPN*2	150	100	50	10	10	250	150
EMH13	SOT-563	NPN*2	150	100	50	4.7	47	250	150
EMH4	SOT-563	NPN*2	150	100	50	10		250	150
EMH9	SOT-563	NPN*2	150	100	50	10	47	200	150
EMD16	SOT-563	NPN+PNP	150	100/-100	50/-50	22	47	250	150
EMD2	SOT-563	NPN+PNP	150	100/-100	50/-50	22	22	200	150
EMD22	SOT-563	NPN+PNP	150	100/-100	50/-50	4.7	47	250	150
EMD3	SOT-563	NPN+PNP	200	100/-100	50/-50	10	10	250	150
EMD9	SOT-563	NPN+PNP	150	100/-100	50/-50	10	47	250	150
EMB1	SOT-563	PNP*2	150	-100	-50	22	22	200	150
EMB9	SOT-563	PNP*2	150	-100	-50	10	47	200	150
DTC114EM	SOT-723	NPN	150	100	50	10	10	250	150
DTC114YM	SOT-723	NPN	200	100	50	10	47	250	150
DTC115EM	SOT-723	NPN	100	100	50	100	100	250	150
DTC123EM	SOT-723	NPN	100	100	50	2.2	2.2	250	150
DTC123JM	SOT-723	NPN	100	100	50	2.2	47	250	150
DTC124XM	SOT-723	NPN	100	100	50	22	47	200	150
DTC143EM	SOT-723	NPN	150	100	50	4.7	4.7	250	150
DTC143TM	SOT-723	NPN	100	100	50	4.7		250	150
DTC143ZM	SOT-723	NPN	100	100	50	4.7	47	250	150
DTC144EM	SOT-723	NPN	100	100	50	47	47	250	150
DTA114EM	SOT-723	PNP	100	-100	-50	10	10	250	150
DTA114YM	SOT-723	PNP	100	-70	-50	10	47	250	150
DTA123JM	SOT-723	PNP	100	-100	-50	2.2	47	250	150
DTA144EM	SOT-723	PNP	100	-100	-50	47	47	250	150

Quality & Reliability

Our automotive components comply with industry standards

Reliability test for automotive products

Process audit for automotive products

Load dump / ESD equipment

Testing and calibration laboratories

Production part approval process

Automotive quality management system certification

EMC test for equipment

