

## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			P <sub>C</sub> (W)	V <sub>CE0</sub> (V)	I <sub>C</sub> (A)	H <sub>FE</sub>	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	V <sub>CE(sat)</sub> (V)	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	f <sub>T</sub> (MHz)	
MCP718	DFN2020-3	PNP	1	-20	-6	300	-2	-10	-0.22	-1000	-20	150	718
2SA1952	DPAK	PNP	1	-60	-5	120-270	-2	-1000	-0.3	-3000	-150	80	A1952
2SB1182-P	DPAK	PNP	1.5	-32	-2	82-180	-3	-500	-0.8	-2000	-200	100	-
2SB1182-Q	DPAK	PNP	1.5	-32	-2	120-270	-3	-500	-0.8	-2000	-200	100	-
2SB1182-R	DPAK	PNP	1.5	-32	-2	180-390	-3	-500	-0.8	-2000	-200	100	-
2SB1184-P	DPAK	PNP	1	-50	-3	82-180	-3	-500	-1	-2000	-200	70	-
2SB1184-Q	DPAK	PNP	1	-50	-3	120-270	-3	-500	-1	-2000	-200	70	-
2SB1184-R	DPAK	PNP	1	-50	-3	180-390	-3	-500	-1	-2000	-200	70	-
2SB1261	DPAK	PNP	1	-60	-3	100-200	-2	-600	-0.3	-1500	-150	50	-
2SB1412-P	DPAK	PNP	1	-30	-5	82-180	-2	-500	-1	-4000	-100	120	B1412
2SB1412-Q	DPAK	PNP	1	-30	-5	120-270	-2	-500	-1	-4000	-100	120	B1412
2SB1412-R	DPAK	PNP	1	-30	-5	180-390	-2	-500	-1	-4000	-100	120	B1412
2SC2983-Y	DPAK	NPN	1	160	1.5	120-240	5	100	1.5	500	50	100	-
2SC3303-O	DPAK	NPN	1	80	5	70-140	1	1000	0.4	3000	150	20	-
2SC3303-Y	DPAK	NPN	1	80	5	120-240	1	1000	0.4	3000	150	20	-
2SD1815-R	DPAK	NPN	1	100	3	100-200	5	500	0.4	1500	150	180	-
2SD1899-K	DPAK	NPN	1	60	3	200-400	2	600	0.25	1500	150	120	-
2SD1899-L	DPAK	NPN	1	60	3	160-320	2	600	0.25	1500	150	120	-
2SD1899-M	DPAK	NPN	1	60	3	100-200	2	600	0.25	1500	150	120	-
B772-GR	DPAK	PNP	1.25	-30	3	200-400	-2	-1000	-0.5	-2000	-200	50	-
B772-O	DPAK	PNP	1.25	-30	3	100-200	-2	-1000	-0.5	-2000	-200	50	-
B772-R	DPAK	PNP	1.25	-30	3	60-120	-2	-1000	-0.5	-2000	-200	50	-
B772-Y	DPAK	PNP	1.25	-30	3	160-320	-2	-1000	-0.5	-2000	-200	50	-
D882-GR	DPAK	NPN	1.25	30	3	200-400	2	1000	0.5	2000	200	90	-
D882-O	DPAK	NPN	1.25	30	3	100-200	2	1000	0.5	2000	200	90	-
D882-R	DPAK	NPN	1.25	30	3	60-120	2	1000	0.5	2000	200	90	-
D882-Y	DPAK	NPN	1.25	30	3	160-320	2	1000	0.5	2000	200	90	-
MJD112	DPAK	NPN	1	100	2	500	3	500	2	2000	8	25	-
MJD117	DPAK	PNP	1.75	-100	-2	1000-12000	-3	-2000	-2	-2000	-8	25	-
MJD122	DPAK	NPN	1.5	100	8	1000-12000	-4	-4000	2	4000	16	NULL	-
MJD127	DPAK	PNP	1.5	-100	-8	1000-12000	-4	-4000	-2	-4000	-16	NULL	-
MJD31C	DPAK	NPN	1.25	100	3	10-50	4	3000	1.2	3000	375	3	-
MJD32C	DPAK	PNP	1.25	-100	-3	10-50	-4	-3000	-1.2	-3000	-375	3	-
MJD42C	DPAK	PNP	1.25	-100	-6	15-75	-4	-3000	-1.5	-6000	-600	3	-
MMJD2955	DPAK	PNP	1.25	-60	10	20-100	-4	-4000	-1.1	-4000	-400	2	-
MMJD3055	DPAK	NPN	1.25	60	10	20-100	4	4000	1.1	4000	400	2	-
MJE13005F	ITO-220AB	NPN	2	420	4	10-40	5	1000	0.3	1000	200	5	-
MJE13007F	ITO-220AB	NPN	2	400	8	8.0-40	5	2000	1	2000	400	4	-
BCP51-10	SOT-223	PNP	1.5	-45	-1	63-160	-2	-150	-0.5	-500	-50	100	-
BCP51-16	SOT-223	PNP	1.5	-45	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BCP52-10	SOT-223	PNP	1.5	-60	-1	63-160	-2	-150	-0.5	-500	-50	100	-
BCP52-16	SOT-223	PNP	1.5	-60	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BCP53-10	SOT-223	PNP	1.5	-80	-1	63-160	-2	-150	-0.5	-500	-50	100	-
BCP53-16	SOT-223	PNP	1.5	-80	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BCP54-10	SOT-223	NPN	1.5	45	1	63-160	2	150	0.5	500	50	100	-
BCP54-16	SOT-223	NPN	1.5	45	1	100-250	2	150	0.5	500	50	100	-
BCP55-10	SOT-223	NPN	1.5	60	1	63-160	2	150	0.5	500	50	100	-
BCP55-16	SOT-223	NPN	1.5	60	1	100-250	2	150	0.5	500	50	100	-
BCP56-10	SOT-223	NPN	1.5	80	1	63-160	2	150	0.5	500	50	100	-
BCP56-16	SOT-223	NPN	1.5	80	1	100-250	2	150	0.5	500	50	100	-
FZT955	SOT-223	PNP	0.8	-140	-4	100	-5	-10	-60	-100	-5	30	ZT955
FZT692B	SOT-223	NPN	0.8	70	2.5	500	2	100	0.15	100	0.5	10	ZT692B

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			P <sub>C</sub> (W)	V <sub>CE0</sub> (V)	I <sub>C</sub> (A)	H <sub>FE</sub>	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	V <sub>CE(sat)</sub> (V)	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	f <sub>T</sub> (MHz)	
PZT2222A	SOT-223	NPN	1	40	0.6	100-300	10	150	0.3	150	15	300	ZT2222A
PZT2907A	SOT-223	PNP	1	-60	0.6	100-300	-10	-150	-0.4	-150	-15	200	ZT2907A
PZT3904	SOT-223	NPN	1	40	0.2	100-300	1	10	0.2	10	1	300	ZT3904
PZT5401	SOT-223	PNP	1	-150	0.6	50	-5	-1	-0.2	-10	-1	300	ZT5401
PZT5551	SOT-223	NPN	1	160	0.6	80	5	1	0.15	10	1	300	ZT5551
PZTA42	SOT-223	NPN	1	300	0.2	25	10V	1	0.5	20	2	50	ZTA42
PZTA44	SOT-223	NPN	1	400	0.2	50-200	10	10	0.5	10	1	20	ZTA44
PZTA94	SOT-223	PNP	1	-400	0.2	80-300	-10	-10	-0.2	-10	-1	50	ZTA94
2SA1036-P	SOT-23	PNP	0.2	-32	-0.5	82-180	-3	-10	-0.4	-100	-10	200	HP
2SA1036-Q	SOT-23	PNP	0.2	-32	-0.5	120-270	-3	-10	-0.4	-100	-10	200	HQ
2SA1036-R	SOT-23	PNP	0.2	-32	-0.5	180-390	-3	-10	-0.4	-100	-10	200	HR
2SA1037-Q	SOT-23	PNP	0.2	-50	-0.15	120-270	-6	-1	-0.5	-5	-5	120	FQ
2SA1037-R	SOT-23	PNP	0.2	-50	-0.15	180-390	-6	-1	-0.5	-5	-5	120	FR
2SA1037-S	SOT-23	PNP	0.2	-50	-0.15	270-560	-6	-1	-0.5	-5	-5	120	FS
2SA1162-GR	SOT-23	PNP	0.15	-50	0.15	200-400	-6	-2	-0.3	-100	-10	80	SG
2SA1162-O	SOT-23	PNP	0.15	-50	0.15	70-140	-6	-2	-0.3	-100	-10	80	SO
2SA1162-Y	SOT-23	PNP	0.15	-50	0.15	120-240	-6	-2	-0.3	-100	-10	80	SY
2SA1298-O	SOT-23	PNP	0.2	-30	-0.8	100-200	-1	-100	-0.4	-500	-20	250	IO
2SA1298-Y	SOT-23	PNP	0.2	-30	-0.8	160-320	-1	-100	-0.4	-500	-20	250	IY
2SA1464-P	SOT-23	PNP	0.2	-40	-0.5	75-150	-2	-150	-0.45	-500	-50	400	Y12
2SA1464-Q	SOT-23	PNP	0.2	-40	-0.5	100-200	-2	-150	-0.45	-500	-50	400	Y13
2SA1464-R	SOT-23	PNP	0.2	-40	-0.5	150-300	-2	-150	-0.45	-500	-50	400	Y14
2SA812-M4	SOT-23	PNP	0.2	-50	-0.1	90-180	-6	-1	-0.3	-100	-10	180	M4
2SA812-M5	SOT-23	PNP	0.2	-50	-0.1	135-270	-6	-1	-0.3	-100	-10	180	M5
2SA812-M6	SOT-23	PNP	0.2	-50	-0.1	200-400	-6	-1	-0.3	-100	-10	180	M6
2SA812-M7	SOT-23	PNP	0.2	-50	-0.1	300-600	-6	-1	-0.3	-100	-10	180	M7
2SB1197-P	SOT-23	PNP	0.2	-32	-0.8	82-180	-3	-100	-0.5	-500	-50	50	AHP
2SB1197-Q	SOT-23	PNP	0.2	-32	-0.8	120-270	-3	-100	-0.5	-500	-50	50	AHQ
2SB1197-R	SOT-23	PNP	0.2	-32	-0.8	180-390	-3	-100	-0.5	-500	-50	50	AHR
2SC1623-L5	SOT-23	NPN	0.2	50	0.1	135-270	6	1	0.3	100	10	250	L5
2SC1623-L6	SOT-23	NPN	0.2	50	0.1	200-400	6	1	0.3	100	10	250	L6
2SC1623-L7	SOT-23	NPN	0.2	50	0.1	300-600	6	1	0.3	100	10	250	L7
2SC2411-P	SOT-23	NPN	0.2	32	0.5	82-180	3	100	0.4	500	50	250	CP
2SC2411-Q	SOT-23	NPN	0.2	32	0.5	120-270	3	100	0.4	500	50	250	CQ
2SC2411-R	SOT-23	NPN	0.2	32	0.5	180-390	3	100	0.4	500	50	250	CR
2SC2412-Q	SOT-23	NPN	0.2	50	0.15	120-270	6	1	0.4	50	5	150	BQ
2SC2412-R	SOT-23	NPN	0.2	50	0.15	180-390	6	1	0.4	50	5	150	BR
2SC2412-S	SOT-23	NPN	0.2	50	0.15	270-560	6	1	0.4	50	5	150	BS
2SC2712-BL	SOT-23	NPN	0.15	50	0.15	350-700	6	2	0.1	100	10	80	LL
2SC2712-GR	SOT-23	NPN	0.15	50	0.15	200-400	6	2	0.1	100	10	80	LG
2SC2712-O	SOT-23	NPN	0.15	50	0.15	70-140	6	2	0.1	100	10	80	LO
2SC2712-Y	SOT-23	NPN	0.15	50	0.15	120-240	6	2	0.1	100	10	80	LY
2SC2859-GR	SOT-23	NPN	0.15	30	0.5	200-400	1	100	0.25	100	10	300	WG
2SC2859-O	SOT-23	NPN	0.15	30	0.5	70-140	1	100	0.25	100	10	300	WO
2SC2859-Y	SOT-23	NPN	0.15	30	0.5	120-240	1	100	0.25	100	10	300	WY
2SC3052-E	SOT-23	NPN	0.15	50	0.2	150-300	6	1	0.3	100	10	180	LE
2SC3052-F	SOT-23	NPN	0.15	50	0.2	250-500	6	1	0.3	100	10	180	LF
2SC3052-G	SOT-23	NPN	0.15	50	0.2	400-800	6	1	0.3	100	10	180	LG
2SC3265-O	SOT-23	NPN	0.2	30	0.8	100-200	1	100	0.5	500	20	120	EO
2SC3265-Y	SOT-23	NPN	0.2	30	0.8	160-320	1	100	0.5	500	20	120	EY
BC807-16	SOT-23	PNP	0.3	45	0.5	100-250	1	100	0.7	500	50	100	5A
BC807-25	SOT-23	PNP	0.3	45	0.5	160-400	1	100	0.7	500	50	100	5B

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			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
BC807-40	SOT-23	PNP	0.3	45	0.5	250-600	1	100	0.7	500	50	100	5C
BC808-16	SOT-23	PNP	0.3	-25	0.8	100-250	-1	-100	-0.7	-500	-50	100	5E
BC808-25	SOT-23	PNP	0.3	-25	0.8	160-400	-1	-100	-0.7	-500	-50	100	5F
BC808-40	SOT-23	PNP	0.3	-25	0.8	250-630	-1	-100	-0.7	-500	-50	100	5G
BC817-16	SOT-23	NPN	0.31	45	0.5	100-250	1	100	0.7	500	50	100	6A
BC817-25	SOT-23	NPN	0.31	45	0.5	160-400	1	100	0.7	500	50	100	6B
BC817-40	SOT-23	NPN	0.31	45	0.5	250-600	1	100	0.7	500	50	100	6C
BC818-16	SOT-23	NPN	0.3	25	0.5	100-250	1	100	0.7	500	50	170	6E
BC818-25	SOT-23	NPN	0.3	25	0.5	160-400	1	100	0.7	500	50	170	6F
BC818-40	SOT-23	NPN	0.3	25	0.5	250-630	1	100	0.7	500	50	170	6G
BC846A	SOT-23	NPN	0.225	65	0.1	110-220	5	2	0.5	100	5	100	1A/46A
BC846B	SOT-23	NPN	0.225	65	0.1	200-450	5	2	0.5	100	5	100	1B/46B
BC847A	SOT-23	NPN	0.225	45	0.1	110-220	5	2	0.5	100	5	100	1E/47A
BC847B	SOT-23	NPN	0.225	45	0.1	200-450	5	2	0.5	100	5	100	1F/47B
BC847C	SOT-23	NPN	0.225	45	0.1	420-800	5	2	0.5	100	5	100	1G/47C
BC848A	SOT-23	NPN	0.225	30	0.1	110-220	5	2	0.5	100	5	100	1J/48A
BC848B	SOT-23	NPN	0.225	30	0.1	200-450	5	2	0.5	100	5	100	1K/48B
BC848C	SOT-23	NPN	0.225	30	0.1	420-800	5	2	0.5	100	5	100	1L/48C
BC856A	SOT-23	PNP	0.2	-65	-0.1	125-250	-5	-2	-0.3	-10	-0.5	200	3A
BC856B	SOT-23	PNP	0.2	-65	-0.1	220-475	-5	-2	-0.3	-10	-0.5	200	3B
BC857A	SOT-23	PNP	0.2	-45	-0.1	125-250	-5	-2	-0.3	-10	-0.5	200	3E
BC857B	SOT-23	PNP	0.2	-45	-0.1	220-475	-5	-2	-0.3	-10	-0.5	200	3F
BC857C	SOT-23	PNP	0.2	-45	-0.1	420-800	-5	-2	-0.3	-10	-0.5	200	3G
BC858A	SOT-23	PNP	0.2	-30	-0.1	125-250	-5	-2	-0.3	-10	-0.5	200	3J
BC858B	SOT-23	PNP	0.2	-30	-0.1	220-475	-5	-2	-0.3	-10	-0.5	200	3K
BC858C	SOT-23	PNP	0.2	-30	-0.1	420-800	-5	-2	-0.3	-10	-0.5	200	3L
BCV27	SOT-23	NPN	0.3	30	0.5	4000	1	0.1	1	100	0.1	170	FF
BCV47	SOT-23	NPN	0.3	60	0.5	2000	1	0.1	1	100	0.1	170	FG
BCW66F	SOT-23	NPN	0.2	45	0.8	100-250	1	100	0.3	100	10	100	EF
BCW66G	SOT-23	NPN	0.2	45	0.8	110	1	10	0.3	100	10	100	EG
BCW66H	SOT-23	NPN	0.33	45	0.8	180	1	10	0.3	100	10	100	EH
BCW68G	SOT-23	PNP	0.33	45	0.8	120	1	10	0.3	100	10	200	DG
BCW68H	SOT-23	PNP	0.33	45	0.8	180	1	10	0.3	100	10	100	DH
BCX70G	SOT-23	NPN	0.25	45	0.2	120-220	5	2	0.35	10	0.25	100	AG
BCX70H	SOT-23	NPN	0.25	45	0.2	180-310	5	2	0.35	10	0.25	100	AH
BCX70J	SOT-23	NPN	0.25	45	0.2	250-460	5	2	0.35	10	0.25	100	AJ
BCX70K	SOT-23	NPN	0.25	45	0.2	380-630	5	2	0.35	10	0.25	100	AK
FMMT449	SOT-23	NPN	0.2	30	1	100-300	2	500	0.5	1000	100	150	449
FMMT491	SOT-23	NPN	0.5	60	1	80	5	1000	0.5	1000	100	150	491
FMMT493	SOT-23	NPN	0.25	100	1	20	10	1000	0.3	500	50	150	493
FMMT591	SOT-23	PNP	0.5	60	1	80	5	1000	0.6	1000	100	150	591
FMMT593	SOT-23	PNP	0.25	100	1	100	5	1	0.2	250	25	150	-
FMMT618	SOT-23	NPN	0.35	20	2.5	200	2	10	0.15	1000	10	100	618
FMMT619	SOT-23	NPN	0.35	50	2	100	2	2000	0.2	1000	10	100	619
FMMT718	SOT-23	PNP	0.35	-20	-1.5	300	-2	-10	-0.2	-1000	-20	150	718
FMMT720	SOT-23	PNP	0.35	-40	-1.5	60	-2	-1500	-0.04	-100	-10	150	720
KTA1504-GR	SOT-23	PNP	0.15	-50	-0.15	200-400	-6	-2	-0.3	-100	-10	80	ASG
KTA1504-O	SOT-23	PNP	0.15	-50	-0.15	70-140	-6	-2	-0.3	-100	-10	80	ASO
KTA1504-Y	SOT-23	PNP	0.15	-50	-0.15	120-240	-6	-2	-0.3	-100	-10	80	ASY
KTC3875-GR	SOT-23	NPN	0.15	50	0.15	200-400	6	2	0.25	100	10	80	ALG
KTC3875-Y	SOT-23	NPN	0.15	50	0.15	120-240	6	2	0.25	100	10	80	ALY
KTC3876-GR	SOT-23	NPN	0.2	30	0.5	200-400	1	100	0.25	100	10	300	WG

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KTC3876-Y	SOT-23	NPN	0.2	30	0.5	120-240	1	100	0.25	100	10	300	WY
MMBT1015-H	SOT-23	PNP	0.25	-50	-0.15	200-400	-6	-2	-0.3	-100	-10	80	BA
MMBT1015-L	SOT-23	PNP	0.25	-50	-0.15	130-200	-6	-2	-0.3	-100	-10	80	BA
MMBT1616A-G	SOT-23	NPN	0.35	60	1	200-400	2	100	0.3	1000	50	100	16A
MMBT1616A-L	SOT-23	NPN	0.35	60	1	300-600	2	100	0.3	1000	50	100	16A
MMBT1616A-Y	SOT-23	NPN	0.35	60	1	135-270	2	100	0.3	1000	50	100	16A
MMBT1815-H	SOT-23	NPN	0.2	50	0.15	200-400	6	2	0.25	100	10	80	HF
MMBT1815-L	SOT-23	NPN	0.2	50	0.15	130-200	6	2	0.25	100	10	80	HF
MMBT2222A	SOT-23	NPN	0.35	40	0.6	75	10	10	0.3	150	15	300	1P
MMBT2907A	SOT-23	PNP	0.35	-60	0.6	100	-10	-10	-0.4	-150	-15	200	2F
MMBT3904	SOT-23	NPN	0.35	40	0.2	100-300	1	10	0.2	10	1	300	1AM
MMBT3906	SOT-23	PNP	0.3	-40	-0.2	100-300	-1	-10	-0.25	-10	-1	250	2A
MMBT4401	SOT-23	NPN	0.35	40	0.6	80	1	10	0.4	150	15	250	2X/M4A
MMBT4403	SOT-23	PNP	0.35	40	-0.6	100	1	10	0.4	150	15	200	2T/M3A
MMBT5343-G	SOT-23	NPN	0.2	50	0.15	200-400	6	2000	0.25	100	10	80	5343
MMBT5343-L	SOT-23	NPN	0.2	50	0.15	300-700	6	2000	0.25	100	10	80	5343
MMBT5343-O	SOT-23	NPN	0.2	50	0.15	70-140	6	2000	0.25	100	10	80	5343
MMBT5343-Y	SOT-23	NPN	0.2	50	0.15	120-240	6	2000	0.25	100	10	80	5343
MMBT5401	SOT-23	PNP	0.3	150	0.6	100-300	5	10	0.5	50	5	100	2L
MMBT5550	SOT-23	NPN	0.225	140	0.6	60	5	10	0.15	10	1	-	M1F
MMBT5551	SOT-23	NPN	0.3	160	0.6	100-300	5	10	0.2	50	5	100	G1
MMBT589	SOT-23	PNP	0.31	-30	-1	100	-2	-1	-0.25	-500	-50	100	589
MMBT945-H	SOT-23	NPN	0.2	50	0.15	200-400	6	1	0.3	100	10	150	CR
MMBT945-L	SOT-23	NPN	0.2	50	0.15	130-200	6	1	0.3	100	10	150	CR
MMBTA05	SOT-23	NPN	0.3	60	0.5	100	1	10	0.25	100	10	100	1H/K1H
MMBTA06	SOT-23	NPN	0.3	80	0.5	100	1	10	0.25	100	10	100	1GM/K1G
MMBTA13	SOT-23	NPN	0.225	30	0.3	5000-10000	5	10	1.5	100	0.1	125	K2D
MMBTA14	SOT-23	NPN	0.225	30	0.3	5000-10000	5	10	1.5	100	0.1	125	K3D
MMBTA28	SOT-23	NPN	0.2	80	0.5	10000	5	10	1.5	100	0.1	125	3SS
MMBTA42	SOT-23	NPN	0.3	300	0.3	40	10	10	0.5	20	2	50	1D
MMBTA43	SOT-23	NPN	0.225	200	0.5	25	10	1	0.5	20	2	50	M1E/ABX
MMBTA44	SOT-23	NPN	0.35	400	0.1	40	10	1	0.75	50	5	50	3D/A44
MMBTA55	SOT-23	PNP	0.225	60	0.5	100	1	10	0.25	100	10	50	2H/B55
MMBTA56	SOT-23	PNP	0.225	80	0.5	100	1	10	0.25	100	10	50	2GM/B56
MMBTA92	SOT-23	PNP	0.3	-300	-0.3	100-200	-10	-10	-0.2	-20	-2	50	2D
MMBTA93	SOT-23	PNP	0.3	-200	-0.5	25	-10	-1	-0.5	-20	-2	50	YW
MMBTA94	SOT-23	PNP	0.35	-400	-0.1	70	-10	-1	-0.2	-10	-1	50	4D
MMBTH10	SOT-23	NPN	0.225	25	0.05	60	10	4	0.5	4	0.4	650	3EM
MMS8050-H	SOT-23	NPN	0.3	25	0.5	200-350	1	50	0.6	500	50	150	J3Y
MMS8050-L	SOT-23	NPN	0.3	25	0.5	120-200	1	50	0.6	500	50	150	J3Y
MMS8550-H	SOT-23	PNP	0.3	25	0.5	200-350	1	50	0.6	500	50	150	2TY
MMS8550-L	SOT-23	PNP	0.3	25	0.5	120-200	1	50	0.6	500	50	150	2TY
MMS9012-H	SOT-23	PNP	0.45	20	0.5	200-350	1	50	0.6	500	50	150	2T1
MMS9012-L	SOT-23	PNP	0.45	20	0.5	120-200	1	50	0.6	500	50	150	2T1
MMS9013-H	SOT-23	NPN	0.3	25	0.5	200-350	1	50	0.6	500	50	150	J3
MMS9013-L	SOT-23	NPN	0.3	25	0.5	120-200	1	50	0.6	500	50	150	J3
MMS9014-H	SOT-23	NPN	0.4	45	0.1	450-1000	5	1	0.3	100	5	150	J6
MMS9014-L	SOT-23	NPN	0.4	45	0.1	200-450	5	1	0.3	100	5	150	J6
MMS9015-H	SOT-23	PNP	0.2	45	0.1	450-1000	5	1	0.3	100	10	150	M6
MMS9015-L	SOT-23	PNP	0.2	45	0.1	200-450	5	1	0.3	100	10	150	M6
MMS9018-H	SOT-23	NPN	0.31	18	0.05	105-190	5	1	0.5	10	1	600	J8
MMS9018-L	SOT-23	NPN	0.31	18	0.05	70-105	5	1	0.5	10	1	600	J8

## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
MMSS8050-H	SOT-23	NPN	0.3	25	1.5	200-350	1	100	0.5	800	80	100	Y1
MMSS8050-L	SOT-23	NPN	0.3	25	1.5	120-200	1	100	0.5	800	80	100	Y1
MMSS8550-H	SOT-23	PNP	0.625	25	1.5	200-350	1	100	0.5	800	80	100	Y2
MMSS8550-L	SOT-23	PNP	0.625	25	1.5	120-200	1	100	0.5	800	80	100	Y2
MS8050-H	SOT-23	NPN	0.2	25	0.8	200-300	1	5	0.5	800	80	150	Y11
MS8050-L	SOT-23	NPN	0.2	25	0.8	80-200	1	5	0.5	800	80	150	Y11
MC818B	SOT23-6L	PNP	1.2	-30	-3	100	-1	-500	-0.15	-500	-5	-	818B
SMBT5551	SOT23-6L	NPN	0.3	160	0.6	100-300	5	10	0.15	10	1	300	5551S
2SA1576A-Q	SOT-323	PNP	0.2	-50	-0.15	120-270	-6	-1	-0.5	-50	-5	100	FQ
2SA1576A-R	SOT-323	PNP	0.2	-50	-0.15	180-390	-6	-1	-0.5	-50	-5	100	FR
2SA1576A-S	SOT-323	PNP	0.2	-50	-0.15	270-560	-6	-1	-0.5	-50	-5	100	FS
2SA1577-P	SOT-323	PNP	0.2	-32	-0.5	82-180	-3	-10	-0.4	-100	-10	200	HP
2SA1577-Q	SOT-323	PNP	0.2	-32	-0.5	120-270	-3	-10	-0.4	-100	-10	200	HQ
2SA1577-R	SOT-323	PNP	0.2	-32	-0.5	180-390	-3	-10	-0.4	-100	-10	200	HR
2SB1694	SOT-323	PNP	0.2	-30	-1	270-680	-2	-100	-0.38	-500	-25	320	-
2SC4081-A	SOT-323	NPN	0.2	50	0.15	120-270	-6	-1	0.4	-50	-5	180	BQ
2SC4081-B	SOT-323	NPN	0.2	50	0.15	180-390	-6	-1	0.4	-50	-5	180	BR
2SC4081-C	SOT-323	NPN	0.2	50	0.15	270-560	-6	-1	0.4	-50	-5	180	BS
2SC4097-P	SOT-323	NPN	0.2	32	0.5	82-180	3	10	0.4	100	10	250	CP
2SC4097-Q	SOT-323	NPN	0.2	32	0.5	120-270	3	10	0.4	100	10	250	CQ
2SC4097-R	SOT-323	NPN	0.2	32	0.5	180-390	3	10	0.4	100	10	250	CR
2SC4116-BL	SOT-323	NPN	0.1	64	0.15	350-700	-6	-1	0.25	-50	-5	80	LL
2SC4116-GR	SOT-323	NPN	0.1	64	0.15	200-400	-6	-1	0.25	-50	-5	80	LG
2SC4116-O	SOT-323	NPN	0.1	64	0.15	70-140	-6	-1	0.25	-50	-5	80	LO
2SC4116-Y	SOT-323	NPN	0.1	64	0.15	120-240	-6	-1	0.25	-50	-5	80	LY
2SC4215-O	SOT-323	NPN	0.1	30	0.02	70-140	6	1	-	-	-	260	QO
2SC4215-R	SOT-323	NPN	0.1	30	0.02	40-80	6	1	-	-	-	260	QR
2SC4215-Y	SOT-323	NPN	0.1	30	0.02	100-200	6	1	-	-	-	260	QY
BC807-16W	SOT-323	PNP	0.2	45	0.5	100-250	1	100	0.7	500	50	80	5A
BC807-25W	SOT-323	PNP	0.2	45	0.5	160-400	1	100	0.7	500	50	80	5B
BC807-40W	SOT-323	PNP	0.2	45	0.5	250-600	1	100	0.7	500	50	80	5C
BC817-16W	SOT-323	NPN	0.2	45	0.5	100-250	1	100	0.7	500	50	100	6A
BC817-25W	SOT-323	NPN	0.2	45	0.5	160-400	1	100	0.7	500	50	100	6B
BC817-40W	SOT-323	NPN	0.2	45	0.5	250-600	1	100	0.7	500	50	100	6C
BC846AW	SOT-323	NPN	0.15	80	0.1	110-220	5	2	0.25	10	0.5	100	1A
BC846BW	SOT-323	NPN	0.15	80	0.1	200-450	5	2	0.25	10	0.5	100	1B
BC847AW	SOT-323	NPN	0.15	45	0.1	110-220	5	2	0.25	10	0.5	100	1E
BC847BW	SOT-323	NPN	0.15	45	0.1	200-450	5	2	0.25	10	0.5	100	1F
BC847CW	SOT-323	NPN	0.15	45	0.1	420-800	5	2	0.25	10	0.5	100	1G
BC848AW	SOT-323	NPN	0.15	30	0.1	110-220	5	2	0.25	10	0.5	100	1JS/1J
BC848BW	SOT-323	NPN	0.15	30	0.1	200-450	5	2	0.25	10	0.5	100	1KS/1K
BC848CW	SOT-323	NPN	0.15	30	0.1	420-800	5	2	0.25	10	0.5	100	1LS/1L
BC856AW	SOT-323	PNP	0.15	-65	-0.1	125-250	-5	-2	-0.65	-100	-5	100	3A
BC856BW	SOT-323	PNP	0.15	-65	-0.1	220-475	-5	-2	-0.65	-100	-5	100	3B
BC857AW	SOT-323	PNP	0.15	-45	-0.1	125-250	-5	-2	-0.65	-100	-5	100	3E
BC857BW	SOT-323	PNP	0.15	-45	-0.1	220-475	-5	-2	-0.65	-100	-5	100	3F
BC857CW	SOT-323	PNP	0.15	-45	-0.1	420-800	-5	-2	-0.65	-100	-5	100	3G
BC858AW	SOT-323	PNP	0.15	-30	-0.1	125-250	-5	-2	-0.65	-100	-5	100	3J
BC858BW	SOT-323	PNP	0.15	-30	-0.1	220-475	-5	-2	-0.65	-100	-5	100	3K
BC858CW	SOT-323	PNP	0.15	-30	-0.1	420-800	-5	-2	-0.65	-100	-5	100	3L
KTA2014-GR	SOT-323	PNP	0.1	-50	0.15	200-400	-6	-2000	-0.3	-100	-10	80	SG
KTA2014-O	SOT-323	PNP	0.1	-50	0.15	70-120	-6	-2000	-0.3	-100	-10	80	SO



## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
KTA2014-Y	SOT-323	PNP	0.1	-50	0.15	120-240	-6	-2000	-0.3	-100	-10	80	SY
KTC4075-BL	SOT-323	NPN	0.1	50	0.15	350-700	6	2	0.25	100	10	80	LBL
KTC4075-GR	SOT-323	NPN	0.1	50	0.15	200-400	6	2	0.25	100	10	80	LGR
KTC4075-O	SOT-323	NPN	0.1	50	0.15	70-140	6	2	0.25	100	10	80	LO
KTC4075-Y	SOT-323	NPN	0.1	50	0.15	120-240	6	2	0.25	100	10	80	LY
MMSS8050W-H	SOT-323	NPN	0.2	25	1.5	200-350	1	100	0.5	800	80	100	Y1
MMSS8050W-J	SOT-323	NPN	0.2	25	1.5	300-400	1	100	0.5	800	80	100	Y1
MMSS8050W-L	SOT-323	NPN	0.2	25	1.5	120-200	1	100	0.5	800	80	100	Y1
MMSS8550W-H	SOT-323	PNP	0.2	-25	1.5	200-350	-1	-100	-0.5	-800	-80	100	Y2
MMSS8550W-J	SOT-323	PNP	0.2	-25	1.5	300-400	-1	-100	-0.5	-800	-80	100	Y2
MMSS8550W-L	SOT-323	PNP	0.2	-25	1.5	120-200	-1	-100	-0.5	-800	-80	100	Y2
MMST2222A	SOT-323	NPN	0.2	40	0.6	100-300	10	150	0.6	500	50	300	K3P
MMST2907A	SOT-323	PNP	0.2	-60	-0.6	100	-10	-1	-1.6	-500	-50	200	K3F
MMST3904	SOT-323	NPN	0.2	40	0.2	100-300	1	10	0.3	50	5	300	K2N
MMST3906	SOT-323	PNP	0.2	40	0.2	100-300	1	10	0.3	50	5	300	K5N
MMST4401	SOT-323	NPN	0.2	40	0.6	40	2	500	0.4	150	15	250	K3X
MMST4403	SOT-323	PNP	0.2	-40	-0.6	100-300	-2	-150	-0.4	-150	-15	200	K3T
MMST5401	SOT-323	PNP	0.2	-150	-0.2	60-300	-5	-10	-0.5	-50	-5	300	K4M
MMST5551	SOT-323	NPN	0.2	160	0.2	30	5	50	0.2	50	5	300	K4N
MMSTA42	SOT-323	NPN	0.2	300	0.2	40	10	10	0.5	20	2	50	K3M
MMSTA92	SOT-323	PNP	0.2	300	0.1	40	10	10	0.5	20	2	50	K3R
UMG3N	SOT-353	NPN	0.15	50	0.1	100-600	5	1	0.3	5	0.25	250	G3
UML2N	SOT-353	PNP&Diode	0.15	50	0.15	120-560	6	1	0.4	50	5	180	L2
UML6N	SOT-353	PNP&Diode	0.12	12	0.5	270-680	2	10	0.25	200	10	320	L6
UMY1N	SOT-353	NPN	0.15	-50	-0.15	120-560	-6	-1	-0.5	-50	-5	140	Y1
BC846BPN	SOT-363	NPN/PNP	0.2	65	0.1	200-450	5	2	0.1	10	0.5	100	PJ
BC846BS	SOT-363	NPN	0.2	65	0.1	200-450	5	2	0.1	10	0.5	100	4Ft
BC846S	SOT-363	NPN	0.2	65	0.1	110	5	2	0.1	10	0.5	100	4Ft
BC847BS	SOT-363	NPN	0.3	45	0.1	200-450	5	2	0.65	100	5	200	1C
BC847PN	SOT-363	NPN/PNP	0.2	45	0.1	200-450	5	2	0.25	10	0.5	100	7P
BC856BS	SOT-363	PNP	0.2	-65	-0.1	200-450	-5	-2	-0.1	-10	-0.5	100	5Ft
BC856S	SOT-363	PNP	0.2	-65	-0.1	110	-5	-2	-0.1	-10	-0.5	100	5Ft
BC857S	SOT-363	PNP	0.3	-45	-0.1	125-630	-5	-2	-0.3	-10	-0.5	200	3C
DMMT3904	SOT-363	NPN	0.2	40	0.2	100-300	1	10	0.3	50	5	300	K4A
DMMT3906	SOT-363	PNP	0.2	-40	-0.2	100-300	-1	-10	-0.4	-50	-5	250	K3Q
MMDT2222A	SOT-363	NPN	0.2	40	0.6	100-300	10	150	1	500	50	300	K1P
MMDT2227	SOT-363	NPN/PNP	0.2	40	0.6	35	10	0.1	0.3	150	15	300	K27
MMDT2907A	SOT-363	PNP	0.2	-60	0.6	100	-10	-10	-0.4	-150	-15	200	K2F
MMDT3904	SOT-363	NPN	0.2	40	0.2	100-300	1	10	0.3	50	5	300	K6N
MMDT3906	SOT-363	PNP	0.2	-40	-0.2	100-300	-1	-10	-0.4	-50	-5	250	K3N
MMDT3946	SOT-363	NPN/PNP	0.2	40	0.2	100-300	1	10	0.3	50	5	300	K46
MMDT4401	SOT-363	NPN	0.2	40	0.6	40	2	500	0.75	500	50	250	K2X
MMDT4403	SOT-363	PNP	0.2	40	0.6	20	2	500	0.75	500	50	200	K4M/K2T
MMDT4413	SOT-363	NPN/PNP	0.2	40	0.6	40	2	500	0.75	500	50	250	K13
MMDT5401	SOT-363	PNP	0.2	-150	-0.2	100-300	-5	-10	-0.5	-50	-5	300	K4M
MMDT5451	SOT-363	NPN/PNP	0.2	160	0.2	100-300	5	10	0.15	10	1	100	KNM
MMDT5551	SOT-363	NPN	0.2	160	0.2	100-300	5	10	0.15	10	1	300	K4N
UMB4N	SOT-363	PNP	0.15	-50	-0.1	100-600	-5	-1	-0.3	-10	-1	250	B4
UMT1N	SOT-363	PNP	0.15	-50	-0.15	120-560	-6	-1	-0.5	-50	-5	140	T1
UMX18N	SOT-363	NPN	0.15	12	0.15	270-680	2	10	0.25	200	10	320	X18
UMX1N	SOT-363	NPN	0.15	50	0.15	120-560	6	1	0.4	50	5	180	X1
UMX3N	SOT-363	NPN	0.15	50	0.15	120-560	6	1	0.4	50	5	180	X3



## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
UMZ1N	SOT-363	NPN/PNP	0.15	50	0.15	120-560	6	1	-0.5	-50	-5	140	Z1
UMZ2N	SOT-363	NPN/PNP	0.15	50	0.15	120-560	6	1	0.4	50	5	180	Z2
2SA1774-Q	SOT-523	PNP	0.15	-50	-0.15	120-270	-6	-1	-0.5	-5	-5	140	FQ
2SA1774-R	SOT-523	PNP	0.15	-50	-0.15	180-390	-6	-1	-0.5	-5	-5	140	FR
2SA1774-S	SOT-523	PNP	0.15	-50	-0.15	270-560	-6	-1	-0.5	-5	-5	140	FS
2SA1832-GR	SOT-523	PNP	0.1	-50	-0.15	200-400	-6	-1	-0.3	-100	-10	80	SG
2SA1832-Y	SOT-523	PNP	0.1	-50	-0.15	120-240	-6	-1	-0.3	-100	-10	80	SY
2SC4617-Q	SOT-523	NPN	0.15	50	0.15	120-270	6	1	0.4	50	5	180	BQ
2SC4617-R	SOT-523	NPN	0.15	50	0.15	180-390	6	1	0.4	50	5	180	BR
2SC4617-S	SOT-523	NPN	0.15	50	0.15	270-560	6	1	0.4	50	5	180	BS
BC847AT	SOT-523	NPN	0.15	45	0.1	110-220	5	2	0.6	100	5	100	1E
BC847BT	SOT-523	NPN	0.15	45	0.1	200-450	5	2	0.6	100	5	100	1F
BC847CT	SOT-523	NPN	0.15	45	0.1	420-800	5	2	0.6	100	5	100	1G
BC857AT	SOT-523	PNP	0.15	-45	-0.1	125-250	-5	-2	-0.65	-100	-5	100	3E
BC857BT	SOT-523	PNP	0.15	-45	-0.1	220-475	-5	-2	-0.65	-100	-5	100	3F
BC857CT	SOT-523	PNP	0.15	-45	-0.1	420-800	-5	-2	-0.65	-100	-5	100	3G
MMBT2222AT	SOT-523	NPN	0.15	40	0.6	75-300	10	10	1	500	50	300	1P
MMBT2907AT	SOT-523	PNP	0.15	-60	-0.6	100-300	-10	-10	-0.4	-150	-15	140	2F
MMBT3904T	SOT-523	NPN	0.15	40	0.2	100-300	1	10	0.3	50	5	300	1N
MMBT3906T	SOT-523	PNP	0.15	-40	-0.2	100-300	-1	-10	-0.25	-10	-1	250	3N
BC847BV	SOT-563	NPN	0.15	45	0.1	200-450	5	2	0.3	100	5	100	K4V
BC857BV	SOT-563	PNP	0.15	-45	-0.1	200-475	-5	-2	-0.4	-100	-5	100	K5V
EMZ1	SOT-563	NPN/PNP	0.15	50	0.15	120-560	6	1	0.4	50	5	180	Z1
MMDT3904V	SOT-563	NPN	0.2	40	0.2	30	1	100	0.3	50	5	300	KAP
MMDT3906V	SOT-563	PNP	0.15	-40	-0.2	100-300	-1	-10	-0.4	-50	-5	250	KAR
2SA2029-Q	SOT-723	PNP	0.15	-50	-0.15	120-270	-6	-1	-0.5	-50	-5	140	FQ
2SA2029-R	SOT-723	PNP	0.15	-50	-0.15	180-390	-6	-1	-0.5	-50	-5	140	FR
2SA2029-S	SOT-723	PNP	0.15	-50	-0.15	270-560	-6	-1	-0.5	-50	-5	140	FS
2SC5658-Q	SOT-723	NPN	0.1	50	0.15	120-270	6	1	0.4	50	5	180	BQ
2SC5658-R	SOT-723	NPN	0.1	50	0.15	180-390	6	1	0.4	50	5	180	BR
2SC5658-S	SOT-723	NPN	0.1	50	0.15	270-560	6	1	0.4	50	5	180	BS
BC847BM	SOT-883	NPN	-	45	0.1	220-475	5	2	0.2	10	0.5	100	D5
BC856BM	SOT-883	PNP	-	-65	-0.1	220-475	-5	-2	-0.5	-100	-5	100	D1
BC857BM	SOT-883	PNP	-	-45	-0.1	220-475	-5	-2	-0.2	-10	-0.5	100	D2
2SA1201-O	SOT-89	PNP	0.5	-120	-0.8	80-160	-5	-100	-1	-500	-50	120	DO
2SA1201-Y	SOT-89	PNP	0.5	-120	-0.8	120-240	-5	-100	-1	-500	-50	120	DY
2SA1213-O	SOT-89	PNP	0.5	-50	-2	70-140	2	500	-0.5	1000	50	120	NO
2SA1213-Y	SOT-89	PNP	0.5	-50	-2	120-240	2	500	-0.5	1000	50	120	NY
2SA1797-Q	SOT-89	PNP	0.5	-50	-2	120-270	-2	-500	-0.35	-1000	-50	200	AGQ
2SB1073-Q	SOT-89	PNP	1	-20	-4	120-205	-2	-2000	-1	-3000	-100	120	IQ
2SB1073-R	SOT-89	PNP	1	-20	-4	180-315	-2	-2000	-1	-3000	-100	120	IR
2SB1132-P	SOT-89	PNP	0.5	-32	-1	82-180	-2	-100	-0.5	-2000	-100	150	BAP
2SB1132-Q	SOT-89	PNP	0.5	-32	-1	120-270	-2	-100	-0.5	-2000	-100	150	BAQ
2SB1132-R	SOT-89	PNP	0.5	-32	-1	180-390	-2	-100	-0.5	-2000	-100	150	BAR
2SB1140-R	SOT-89	PNP	0.5	-50	-2	120-240	-2	-200	-0.3	-1000	-50	80	1L
2SB1140-S	SOT-89	PNP	0.5	-50	-2	170-340	-2	-200	-0.3	-1000	-50	80	1L
2SB1188-P	SOT-89	PNP	0.5	-32	-2	82-180	-3	-500	-0.8	-2000	-200	80	BCP
2SB1188-Q	SOT-89	PNP	0.5	-32	-2	120-270	-3	-500	-0.8	-2000	-200	80	BCQ
2SB1188-R	SOT-89	PNP	0.5	-32	-2	180-390	-3	-500	-0.8	-2000	-200	80	BCR
2SB1260-P	SOT-89	PNP	0.5	-80	-1	82-180	-3	-100	-0.4	-500	-50	80	ZL
2SB1260-Q	SOT-89	PNP	0.5	-80	-1	120-270	-3	-100	-0.4	-500	-50	80	ZL
2SB1260-R	SOT-89	PNP	0.5	-80	-1	180-390	-3	-100	-0.4	-500	-50	80	ZL



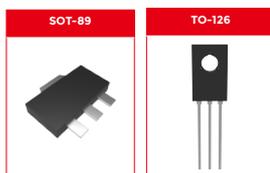
## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SB1308-P	SOT-89	PNP	0.5	-20	-3	82-180	-2	-500	-0.45	-1500	-150	50	BFP
2SB1308-Q	SOT-89	PNP	0.5	-20	-3	120-270	-2	-500	-0.45	-1500	-150	50	BFQ
2SB1308-R	SOT-89	PNP	0.5	-20	-3	180-390	-2	-500	-0.45	-1500	-150	50	BFR
2SB1386-P	SOT-89	PNP	0.5	-20	-5	82-180	-2	-500	-1	-4000	-100	120	BHP
2SB1386-Q	SOT-89	PNP	0.5	-20	-5	120-270	-2	-500	-1	-4000	-100	120	BHQ
2SB1386-R	SOT-89	PNP	0.5	-20	-5	180-390	-2	-500	-1	-4000	-100	120	BHR
2SC2383P-O	SOT-89	NPN	0.5	160	1	100-200	5	200	1	500	50	20	2383
2SC2383P-Y	SOT-89	NPN	0.5	160	1	160-320	5	200	1	500	50	20	2383
2SC2873-O	SOT-89	NPN	0.5	50	2	70-140	2	500	0.5	1000	50	120	MO
2SC2873-Y	SOT-89	NPN	0.5	50	2	120-240	2	500	0.5	1000	50	120	MY
2SC2881-O	SOT-89	NPN	0.5	120	0.8	80-160	5	100	1	500	50	120	CO1
2SC2881-Y	SOT-89	NPN	0.5	120	0.8	120-240	5	100	1	500	50	120	CY1
2SC2883-Y	SOT-89	NPN	0.5	30	1.5	160-320	2	500	2	1500	30	120	GY
2SC4548-D	SOT-89	NPN	0.5	400	0.2	60-120	10	50	0.6	50	5	70	CN
2SC4548-E	SOT-89	NPN	0.5	400	0.2	100-200	10	50	0.6	50	5	70	CN
2SC4672-P	SOT-89	NPN	0.5	50	2	82-180	2	500	0.35	1000	50	210	DKP
2SC4672-Q	SOT-89	NPN	0.5	50	2	120-270	2	500	0.35	1000	50	210	DKQ
2SC4672-R	SOT-89	NPN	0.5	50	2	180-390	2	500	0.35	1000	50	210	DKR
2SD1005-V	SOT-89	NPN	0.5	80	1	135-270	2	100	0.5	500	50	160	BV
2SD1664-P	SOT-89	NPN	0.5	32	1	82-180	3	100	0.4	500	50	150	DAP
2SD1664-Q	SOT-89	NPN	0.5	32	1	120-270	3	100	0.4	500	50	150	DAQ
2SD1664-R	SOT-89	NPN	0.5	32	1	180-390	3	100	0.4	500	50	150	DAR
2SD1766-P	SOT-89	NPN	0.5	32	1	82-180	3	500	0.8	2000	200	100	DBP
2SD1766-Q	SOT-89	NPN	0.5	32	1	120-270	3	500	0.8	2000	200	100	DBQ
2SD1766-R	SOT-89	NPN	0.5	32	1	180-390	3	500	0.8	2000	200	100	DBR
2SD1898-P	SOT-89	NPN	0.5	80	1	82-180	3	500	0.15	500	20	100	DF
2SD1898-Q	SOT-89	NPN	0.5	80	1	120-270	3	500	0.15	500	20	100	DF
2SD1898-R	SOT-89	NPN	0.5	80	1	180-390	3	500	0.15	500	20	100	DF
2SD2150-R	SOT-89	NPN	0.5	20	3	180-390	2	100	0.5	2000	100	290	CFR
2SD2150-S	SOT-89	NPN	0.5	20	3	270-560	2	100	0.5	2000	100	290	CFS
2SD874-Q	SOT-89	NPN	0.5	25	1	85-170	5	1	0.4	500	50	200	ZQ
2SD874-R	SOT-89	NPN	0.5	25	1	120-240	5	1	0.4	500	50	200	ZR
2SD874-S	SOT-89	NPN	0.5	25	1	170-340	5	1	0.4	500	50	200	ZS
2SD874A-Q	SOT-89	NPN	0.5	50	1	85-170	5	1	0.4	500	50	200	YQ
2SD874A-R	SOT-89	NPN	0.5	50	1	120-240	5	1	0.4	500	50	200	YR
2SD874A-S	SOT-89	NPN	0.5	50	1	170-340	5	1	0.4	500	50	200	YS
BC868-10	SOT-89	NPN	1.4	20	1	85-160	1	50	0.5	1000	100	40	CBC
BC868-16	SOT-89	NPN	1.4	20	1	120-200	1	50	0.5	1000	100	40	CCC
BC868-25	SOT-89	NPN	1.4	20	1	160-375	1	50	0.5	1000	100	40	CDC
BC869	SOT-89	PNP	1.4	20	1	100-375	1	500	0.5	1000	100	40	CEC
BC869-16	SOT-89	PNP	1.4	20	1	100-250	1	500	0.5	1000	100	40	CGC
BC869-25	SOT-89	PNP	1.4	20	1	160-375	1	500	0.5	1000	100	40	CHC
BCX51	SOT-89	PNP	0.5	-45	-1	63-250	-2	-150	-0.5	-500	-50	50	AA
BCX51-10	SOT-89	PNP	0.5	-45	-1	63-160	-2	-150	-0.5	-500	-50	50	AC
BCX51-16	SOT-89	PNP	0.5	-45	-1	100-250	-2	-150	-0.5	-500	-50	50	AD
BCX52	SOT-89	PNP	0.5	-60	-1	63-250	-2	-150	-0.5	-500	-50	50	AE
BCX52-10	SOT-89	PNP	0.5	-60	-1	63-160	-2	-150	-0.5	-500	-50	50	AG
BCX52-16	SOT-89	PNP	0.5	-60	-1	100-250	-2	-150	-0.5	-500	-50	50	AM
BCX53	SOT-89	PNP	0.5	-80	-1	63-250	-2	-150	-0.5	-500	-50	50	AH
BCX53-10	SOT-89	PNP	0.5	-80	-1	63-160	-2	-150	-0.5	-500	-50	50	AK
BCX53-16	SOT-89	PNP	0.5	-80	-1	100-250	-2	-150	-0.5	-500	-50	50	AL
BCX54	SOT-89	NPN	0.5	45	1	63-250	2	150	0.5	500	50	130	BA



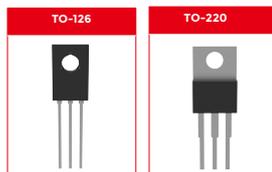
## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
BCX54-10	SOT-89	NPN	0.5	45	1	63-160	2	150	0.5	500	50	130	BC
BCX54-16	SOT-89	NPN	0.5	45	1	100-250	2	150	0.5	500	50	130	BD
BCX55	SOT-89	NPN	0.5	60	1	63-250	2	150	0.5	500	50	130	BE
BCX55-10	SOT-89	NPN	0.5	60	1	63-160	2	150	0.5	500	50	130	BG
BCX55-16	SOT-89	NPN	0.5	60	1	100-250	2	150	0.5	500	50	130	BM
BCX56	SOT-89	NPN	0.5	80	1	63-250	2	150	0.5	500	50	130	BH
BCX56-10	SOT-89	NPN	0.5	80	1	63-160	2	150	0.5	500	50	130	BK
BCX56-16	SOT-89	NPN	0.5	80	1	100-250	2	150	0.5	500	50	130	BL
BD772-GR	SOT-89	PNP	0.5	-30	3	200-400	-2	-1000	-0.5	-2000	-200	80	B772
BD772-O	SOT-89	PNP	0.5	-30	3	100-200	-2	-1000	-0.5	-2000	-200	80	B772
BD772-R	SOT-89	PNP	0.5	-30	3	60-120	-2	-1000	-0.5	-2000	-200	80	B772
BD772-Y	SOT-89	PNP	0.5	-30	3	160-320	-2	-1000	-0.5	-2000	-200	80	B772
BD882-GR	SOT-89	NPN	0.5	30	3	200-400	2	1000	0.5	2000	200	50	D882
BD882-O	SOT-89	NPN	0.5	30	3	100-200	2	1000	0.5	2000	200	50	D882
BD882-R	SOT-89	NPN	0.5	30	3	60-120	2	1000	0.5	2000	200	50	D882
BD882-Y	SOT-89	NPN	0.5	30	3	160-320	2	1000	0.5	2000	200	50	D882
BSR33	SOT-89	PNP	0.5	-80	-1	100-300	-5	-100	-0.5	-500	-50	100	-
BSR43	SOT-89	NPN	0.5	80	1	100-300	5	100	0.5	500	50	100	-
CXT5401	SOT-89	PNP	0.5	150	0.5	50	5	1	0.2	10	1	100	-
CXT5551	SOT-89	NPN	0.5	160	0.6	80	5	1	0.15	10	1	100	1G6
HM4033	SOT-89	PNP	0.5	-80	-1	75	-5	-100	-0.15	-150	-15	100	H4033
KTA1664-O	SOT-89	PNP	0.5	-30	-0.8	100-200	-2	-1000	-0.7	-500	-20	120	RO
KTA1664-Y	SOT-89	PNP	0.5	-30	-0.8	180-390	-2	-1000	-0.7	-500	-20	120	RY
KTC4373-O	SOT-89	NPN	0.5	120	0.8	80-160	5	100	1	500	50	120	CO
KTC4373-Y	SOT-89	NPN	0.5	120	0.8	120-240	5	100	1	500	50	120	CY
KTD1898-GR	SOT-89	NPN	0.5	80	1	200-400	3	500	0.4	500	20	100	ZG
KTD1898-O	SOT-89	NPN	0.5	80	1	70-140	3	500	0.4	500	20	100	ZO
KTD1898-Y	SOT-89	NPN	0.5	80	1	120-240	3	500	0.4	500	20	100	ZY
PXT2222A	SOT-89	NPN	0.5	40	0.6	100-300	10	150	0.3	150	15	300	1P
PXT2907A	SOT-89	PNP	0.5	-60	0.6	100-300	-10	-150	-0.4	-150	-15	200	P2F
PXT3904	SOT-89	NPN	0.5	40	0.2	100-300	1	10	0.2	10	1	300	1A
PXT3906	SOT-89	PNP	0.5	-40	-0.2	100-300	-1	-10	-0.25	-10	-1	250	2A
PXT8050-C	SOT-89	NPN	0.5	25	1.5	120-200	1	100	0.5	800	80	100	Y1 / 8050
PXT8050-D	SOT-89	NPN	0.5	25	1.5	160-300	1	100	0.5	800	80	100	Y1 / 8050
PXT8050-D3	SOT-89	NPN	0.5	25	1.5	300-400	1	100	0.5	800	80	100	Y1 / 8050
PXT8550-B	SOT-89	PNP	0.5	-25	1.5	85-160	-1	-100	-0.5	-800	-80	100	Y2 / 8550
PXT8550-C	SOT-89	PNP	0.5	-25	1.5	120-200	-1	-100	-0.5	-800	-80	100	Y2 / 8550
PXT8550-D	SOT-89	PNP	0.5	-25	1.5	160-300	-1	-100	-0.5	-800	-80	100	Y2 / 8550
PXT8550-D3	SOT-89	PNP	0.5	-25	1.5	300-400	-1	-100	-0.5	-800	-80	100	Y2 / 8550
PXTA44	SOT-89	NPN	0.5	400	0.3	50-200	10	10	0.4	1	0.1	-	A44
2N6036	TO-126	PNP	40	80	4	500	3	500	2	2000	8	-	-
2SB1151-G	TO-126	PNP	1.25	-60	-5	200-400	-1	-2000	-0.3	-2000	-200	-	-
2SB1151-O	TO-126	PNP	1.25	-60	-5	100-200	-1	-2000	-0.3	-2000	-200	-	-
2SB1151-Y	TO-126	PNP	1.25	-60	-5	160-320	-1	-2000	-0.3	-2000	-200	-	-
2SB772-GR	TO-126	PNP	1.25	30	3	200-400	2	1000	0.5	2000	200	50	-
2SB772-O	TO-126	PNP	1.25	30	3	100-200	2	1000	0.5	2000	200	50	-
2SB772-R	TO-126	PNP	1.25	30	3	60-120	2	1000	0.5	2000	200	50	-
2SB772-Y	TO-126	PNP	1.25	30	3	160-320	2	1000	0.5	2000	200	50	-
2SD1691-G	TO-126	NPN	1.3	60	5	200-400	1	2000	0.3	2000	200	-	-
2SD1691-O	TO-126	NPN	1.3	60	5	100-200	1	2000	0.3	2000	200	-	-
2SD1691-Y	TO-126	NPN	1.3	60	5	160-320	1	2000	0.3	2000	200	-	-
2SD669A-C	TO-126	NPN	1	160	1.5	100-200	5	150	1	500	50	140	-



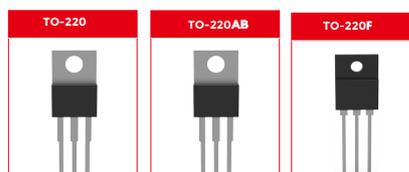
## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SD669-B	TO-126	NPN	1	120	1.5	60-120	5	150	1	500	50	140	-
2SD669-C	TO-126	NPN	1	120	1.5	100-200	5	150	1	500	50	140	-
2SD669-D	TO-126	NPN	1	120	1.5	160-320	5	150	1	500	50	140	-
2SD882-GR	TO-126	NPN	1.25	30	3	200-400	2	1000	0.5	2000	200	50	-
2SD882-O	TO-126	NPN	1.25	30	3	100-200	2	1000	0.5	2000	200	50	-
2SD882-R	TO-126	NPN	1.25	30	3	60-120	2	1000	0.5	2000	200	50	-
2SD882-Y	TO-126	NPN	1.25	30	3	160-320	2	1000	0.5	2000	200	50	-
BD135-10	TO-126	NPN	1.25	45	1.5	40-100	2	150	0.5	500	50	-	-
BD135-16	TO-126	NPN	1.25	45	1.5	40-100	2	150	0.5	500	50	-	-
BD135-6	TO-126	NPN	1.25	45	1.5	40-100	2	150	0.5	500	50	-	-
BD137-10	TO-126	NPN	1.25	60	1.5	63-160	2	150	0.5	500	50	-	-
BD137-16	TO-126	NPN	1.25	60	1.5	63-160	2	150	0.5	500	50	-	-
BD137-6	TO-126	NPN	1.25	60	1.5	63-160	2	150	0.5	500	50	-	-
BD139-10	TO-126	NPN	1.25	80	1.5	100-250	2	150	0.5	500	50	-	-
BD139-16	TO-126	NPN	1.25	80	1.5	100-250	2	150	0.5	500	50	-	-
BD139-6	TO-126	NPN	1.25	80	1.5	100-250	2	150	0.5	500	50	-	-
BD136-10	TO-126	PNP	1.25	45	1.5	63-160	2	5	0.5	500	50	-	-
BD136-16	TO-126	PNP	1.25	45	1.5	100-250	2	5	0.5	500	50	-	-
BD136-6	TO-126	PNP	1.25	45	1.5	40-100	2	5	0.5	500	50	-	-
BD138-10	TO-126	PNP	1.25	60	1.5	63-160	2	5	0.5	500	50	-	-
BD138-16	TO-126	PNP	1.25	60	1.5	100-250	2	5	0.5	500	50	-	-
BD138-6	TO-126	PNP	1.25	60	1.5	40-100	2	5	0.5	500	50	-	-
BD140-10	TO-126	PNP	1.25	80	1.5	63-160	2	5	0.5	500	50	-	-
BD140-16	TO-126	PNP	1.25	80	1.5	100-250	2	5	0.5	500	50	-	-
BD140-6	TO-126	PNP	1.25	80	1.5	40-100	2	5	0.5	500	50	-	-
BD233	TO-126	NPN	1.25	45	2	40	2	150	0.6	1000	100	3	-
BD235	TO-126	NPN	1.25	60	2	40	2	150	0.6	1000	100	3	-
BD237	TO-126	NPN	1.25	80	2	40	2	150	0.6	1000	100	3	-
BD433	TO-126	NPN	1.25	22	4	85	1	500	0.5	2000	200	3	-
BD435	TO-126	NPN	1.25	32	4	85	1	500	0.5	2000	200	3	-
BD437	TO-126	NPN	1.25	45	4	85	1	500	0.6	2000	200	3	-
BD434	TO-126	PNP	1.25	-22	-4	85	-1	-500	-0.5	-2000	-200	3	-
BD436	TO-126	PNP	1.25	-32	-4	85	-1	-500	-0.5	-2000	-200	3	-
BD438	TO-126	PNP	1.25	-45	-4	85	-1	-500	-0.6	-2000	-200	3	-
BD439	TO-126	NPN	1.25	60	4	475	1	500	0.8	3000	300	3	-
MJE13002	TO-126	NPN	1.25	400	1	8.0-60	10	100	0.8	200	40	5	-
MJE13003A	TO-126	NPN	1.25	400	1.5	8.0-40	5	500	1	1000	250	5	-
2N6045	TO-220	NPN	75	100	8	1000-20000	4	3000	4	8000	80	-	-
2N6107	TO-220	PNP	40	70	7	30-150	4	2000	3.5	7000	3000	-	-
2N6388	TO-220	NPN	65	80	10	1000-20000	3	5000	2	5000	10	-	-
2SB857-B	TO-220	PNP	2	-50	-4	60-120	-4	-1000	-1	2000	200	15	-
2SB857-C	TO-220	PNP	2	-50	-4	100-200	-4	-1000	-1	2000	200	15	-
2SB857-D	TO-220	PNP	2	-50	-4	160-320	-4	-1000	-1	2000	200	15	-
2SB861-B	TO-220	PNP	1.8	-150	-2	60-120	-4	-50	-3	-500	-50	-	-
2SB861-C	TO-220	PNP	1.8	-150	-2	100-200	-4	-50	-3	-500	-50	-	-
2SC2073	TO-220	NPN	1.5	150	1.5	40-140	10	500	1.5	500	50	4	-
2SD1138-B	TO-220	NPN	1.8	150	2	60-120	4	50	3	500	50	-	-
2SD1138-C	TO-220	NPN	1.8	150	2	100-200	4	50	3	500	50	-	-
2SD880-GR	TO-220	NPN	1.5	60	3	150-300	5	500	1	3000	300	3	-
2SD880-Q	TO-220	NPN	1.5	60	3	60-120	5	500	1	3000	300	3	-
2SD880-Y	TO-220	NPN	1.5	60	3	100-200	5	500	1	3000	300	3	-
BDW93B	TO-220	NPN	80	80	12	1000	3	3000	2	5000	20	-	-



## Small Signal & Medium Power Bipolar Transistors

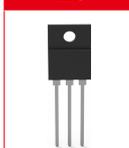
Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
BDX33D	TO-220	NPN	70	100	10	750	3	3000	2.5	3000	6	-	-
MJE13003	TO-220	NPN	1.5	400	1.5	8.0-40	2	500	1	1000	250	5	-
MJE13005	TO-220	NPN	1.5	400	4	10-40	5	1000	0.6	2000	500	5	-
MJE13007	TO-220	NPN	2	400	8	8.0-40	5	2000	1	2000	400	4	-
MJE2955	TO-220	PNP	2	-60	10	20-100	-4	-4000	-1.1	-4000	-400	2	-
MJE3055	TO-220	NPN	2	60	10	20-100	4	4000	1.1	4000	400	2	-
TIP100	TO-220	NPN	80	60	8	1000-20000	4	3000	2	3000	6	-	-
TIP101	TO-220	NPN	80	80	8	1000-20000	4	3000	2	3000	6	-	-
TIP102	TO-220	NPN	80	100	8	1000-20000	4	3000	2	3000	6	-	-
TIP105	TO-220	PNP	80	60	8	1000-20000	4	3000	2	3000	6	-	-
TIP106	TO-220	PNP	80	80	8	1000-20000	4	3000	2	3000	6	-	-
TIP107	TO-220	PNP	80	100	8	1000-20000	4	3000	2	3000	6	-	-
TIP110	TO-220	NPN	2	60	2	1000	4	1000	2.5	2000	8	-	-
TIP111	TO-220	NPN	2	80	2	1000	4	1000	2.5	2000	8	-	-
TIP112	TO-220	NPN	2	100	2	1000	4	1000	2.5	2000	8	-	-
TIP115	TO-220	PNP	2	60	2	1000	4	1000	2.5	2000	8	-	-
TIP116	TO-220	PNP	2	80	2	1000	4	1000	2.5	2000	8	-	-
TIP117	TO-220	PNP	2	100	2	1000	4	1000	2.5	2000	8	-	-
TIP120	TO-220	NPN	65	60	5	1000	3	500	2	3000	12	-	-
TIP122	TO-220	NPN	65	100	5	1000	3	500	2	3000	12	-	-
TIP125	TO-220	PNP	2	-60	-5	1000	-3	-500	-2	-3000	-12	-	-
TIP127	TO-220	PNP	2	-100	-5	1000	-3	-500	-2	-3000	-12	-	-
TIP127L	TO-220	PNP	2	-100	-5	1000	-3	-50	-2	-3000	-12	-	-
TIP29	TO-220	NPN	30	40	1	40	4	200	0.7	1000	125	3	-
TIP29A	TO-220	NPN	30	60	1	40	4	200	0.7	1000	125	3	-
TIP29B	TO-220	NPN	30	80	1	40	4	200	0.7	1000	125	3	-
TIP29C	TO-220	NPN	30	100	1	40	4	200	0.7	1000	125	3	-
TIP30	TO-220	PNP	30	40	1	40	4	200	0.7	1000	125	3	-
TIP30A	TO-220	PNP	30	60	1	40	4	200	0.7	1000	125	3	-
TIP30B	TO-220	PNP	30	80	1	40	4	200	0.7	1000	125	3	-
TIP30C	TO-220	PNP	30	100	1	40	4	200	0.7	1000	125	3	-
TIP31	TO-220	NPN	2	40	3	25	4	1000	1.2	3000	375	3	-
TIP31A	TO-220	NPN	2	60	3	25	4	1000	1.2	3000	375	3	-
TIP31B	TO-220	NPN	2	80	3	25	4	1000	1.2	3000	375	3	-
TIP31C	TO-220	NPN	2	100	3	25	4	1000	1.2	3000	375	3	-
TIP32	TO-220	PNP	2	-40	-3	25	-4	-1000	-1.2	-3000	-375	3	-
TIP32A	TO-220	PNP	2	-60	-3	25	-4	-1000	-1.2	-3000	-375	3	-
TIP32B	TO-220	PNP	2	-80	-3	25	-4	-1000	-1.2	-3000	-375	3	-
TIP32C	TO-220	PNP	2	-100	-3	25	-4	-1000	-1.2	-3000	-375	3	-
TIP41	TO-220	NPN	2	40	6	30	4	300	1.5	6000	600	3	-
TIP41A	TO-220	NPN	2	60	6	30	4	300	1.5	6000	600	3	-
TIP41B	TO-220	NPN	2	80	6	30	4	300	1.5	6000	600	3	-
TIP41C	TO-220	NPN	2	100	6	30	4	300	1.5	6000	600	3	-
TIP42	TO-220	NPN	-2	-40	-6	30	-4	-300	-1.5	-6000	-600	3	-
TIP42A	TO-220	NPN	-2	-60	-6	30	-4	-300	-1.5	-6000	-600	3	-
TIP42B	TO-220	NPN	-2	-80	-6	30	-4	-300	-1.5	-6000	-600	3	-
TIP42C	TO-220	NPN	-2	-100	-6	30	-4	-300	-1.5	-6000	-600	3	-
TIP47	TO-220	NPN	40	250	1	30-150	10	300	1	1000	200	10	-
2SA1012	TO-220AB	PNP	25	-50	-5	70-240	-1	-1000	-0.4	-3000	-150	60	-
2SB1366F-O	TO-220F	PNP	2	-60	-3	60-120	-5	-500	-1	-2000	-200	9	-
2SB1366F-Y	TO-220F	PNP	2	-60	-3	100-200	-5	-500	-1	-2000	-200	9	-
2SD1499-P	TO-220F	NPN	2	100	5	20	5	20	2	1500	1.5	20	-



## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SD2257	TO-220F	NPN	2	100	3	2000	2	1000	1.5	1500	1.5	-	-
3DA4793	TO-220F	NPN	1.5	230	1	100-320	5	100000	1.5	500	50	30	-
2SC3303	TO-251	NPN	1	80	5	70-240	1	1000	0.4	3000	150	20	-
D1815-R	TO-251	NPN	1	100	3	100-200	5	500	0.4	1500	150	180	-
MJE13003D	TO-251	NPN	1.25	400	1.5	8.0-40	5	500	1	1000	250	5	-
2N3904	TO-92	NPN	0.625	40	0.2	100-300	1	10	0.2	10	1	250	-
2N3906	TO-92	PNP	0.6	-40	0.2	100-300	-1	-10	-0.25	-10	-1	250	-
2N4124	TO-92	NPN	0.625	25	0.2	60	1	50	0.3	50	5	300	-
2N4401	TO-92	NPN	0.625	40	0.6	80	1	10	0.4	150	15	250	-
2N4403	TO-92	PNP	0.625	-40	0.6	100	-1	-10	-0.4	-150	-15	200	-
2N5401	TO-92	PNP	0.625	150	0.6	60-300	5	10	0.5	50	5	100	-
2N5550	TO-92	NPN	0.625	140	0.6	60	5	1	0.15	10	1	300	-
2N5551	TO-92	NPN	0.625	160	0.6	80-300	5	10	0.5	50	5	300	-
2N6517	TO-92	NPN	0.625	350	0.5	30	10	1	0.3	10	1	40	-
2N6519	TO-92	PNP	0.625	300	0.5	30	10	1	0.3	10	1	40	-
2N6520	TO-92	PNP	0.625	350	0.5	70-240	10	1	0.3	10	1	40	-
2N6718	TO-92	NPN	0.625	100	1	250	1	250	0.5	250	10	50	-
2SA1015-GR	TO-92	PNP	0.4	-50	-0.15	200-400	-6	-2	-0.3	-100	-10	80	A1015
2SA1015-O	TO-92	PNP	0.4	-50	-0.15	70-140	-6	-2	-0.3	-100	-10	80	A1015
2SA1015-Y	TO-92	PNP	0.4	-50	-0.15	120-240	-6	-2	-0.3	-100	-10	80	A1015
2SA1083-D	TO-92	PNP	0.4	-60	-0.1	250-500	-12	-2	-0.2	-10	-1	90	-
2SA1083-E	TO-92	PNP	0.4	-60	-0.1	400-800	-12	-2	-0.2	-10	-1	90	-
2SA1980-G	TO-92	PNP	0.625	50	0.15	200-400	6	2000	0.3	100	10	80	A1980
2SA1980-L	TO-92	PNP	0.625	50	0.15	300-700	6	2000	0.3	100	10	80	A1980
2SA1980-O	TO-92	PNP	0.625	50	0.15	70-140	6	2000	0.3	100	10	80	A1980
2SA1980-Y	TO-92	PNP	0.625	50	0.15	120-240	6	2000	0.3	100	10	80	A1980
2SA562-O	TO-92	PNP	0.5	-30	-0.5	70-140	-1	-100	-0.25	-100	-10	200	-
2SA562-Y	TO-92	PNP	0.5	-30	-0.5	120-240	-1	-100	-0.25	-100	-10	200	-
2SA733-K	TO-92	PNP	0.25	-50	0.1	300-600	-6	-1	-0.3	-100	-10	100	-
2SA733-P	TO-92	PNP	0.25	-50	0.1	200-400	-6	-1	-0.3	-100	-10	100	-
2SA733-Q	TO-92	PNP	0.25	-50	0.1	135-270	-6	-1	-0.3	-100	-10	100	-
2SA733-R	TO-92	PNP	0.25	-50	0.1	90-180	-6	-1	-0.3	-100	-10	100	-
2SA844-C	TO-92	PNP	0.3	-55	-0.1	160-320	-12	-2	-0.5	-10	-1	200	-
2SA844-D	TO-92	PNP	0.3	-55	-0.1	250-500	-12	-2	-0.5	-10	-1	200	-
2SA844-E	TO-92	PNP	0.3	-55	-0.1	400-800	-12	-2	-0.5	-10	-1	200	-
2SA950-O	TO-92	PNP	0.6	-30	-0.8	100-200	-1	-100	0.7	-500	-20	120	-
2SA950-Y	TO-92	PNP	0.6	-30	-0.8	160-320	-1	-100	0.7	-500	-20	120	-
2SC1008-G	TO-92	NPN	0.8	60	0.7	200-400	2	50	0.4	500	50	30	C1008
2SC1008-O	TO-92	NPN	0.8	60	0.7	70-140	2	50	0.4	500	50	30	C1008
2SC1008-R	TO-92	NPN	0.8	60	0.7	40-80	2	50	0.4	500	50	30	C1008
2SC1008-Y	TO-92	NPN	0.8	60	0.7	120-240	2	50	0.4	500	50	30	C1008
2SC1815-BL	TO-92	NPN	0.4	50	0.15	350-700	6	2	0.25	100	10	80	C1815
2SC1815-GR	TO-92	NPN	0.4	50	0.15	200-400	6	2	0.25	100	10	80	C1815
2SC1815-O	TO-92	NPN	0.4	50	0.15	70-140	6	2	0.25	100	10	80	C1815
2SC1815-Y	TO-92	NPN	0.4	50	0.15	120-240	6	2	0.25	100	10	80	C1815
2SC1923-O	TO-92	NPN	0.1	30	0.02	70-140	6	1	-	-	-	500	-
2SC1923-R	TO-92	NPN	0.1	30	0.02	40-80	6	1	-	-	-	500	-
2SC1923-Y	TO-92	NPN	0.1	30	0.02	100-200	6	1	-	-	-	500	-
2SC1959-GR	TO-92	NPN	0.5	30	0.5	200-400	1	100	0.25	100	10	200	C1959
2SC1959-O	TO-92	NPN	0.5	30	0.5	70-140	1	100	0.25	100	10	200	C1959
2SC1959-Y	TO-92	NPN	0.5	30	0.5	120-240	1	100	0.25	100	10	200	C1959
2SC2001-K	TO-92	NPN	0.6	25	0.7	200-400	1	100	0.6	700	70	50	C2001

TO-220F



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## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SC2001-L	TO-92	NPN	0.6	25	0.7	135-270	1	100	0.6	700	70	50	C2001
2SC2001-M	TO-92	NPN	0.6	25	0.7	90-180	1	100	0.6	700	70	50	C2001
2SC2120-O	TO-92	NPN	0.6	30	0.8	100-200	1	100	0.5	500	20	100	-
2SC2120-Y	TO-92	NPN	0.6	30	0.8	160-320	1	100	0.5	500	20	100	-
2SC2216	TO-92	NPN	0.3	45	0.05	40-140	12.5	12.5	0.2	15	1.5	300	-
2SC3279-L	TO-92	NPN	0.75	10	2	140-240	1	500	0.5	2000	50	100	-
2SC3279-M	TO-92	NPN	0.75	10	2	200-330	1	500	0.5	2000	50	100	-
2SC3279-N	TO-92	NPN	0.75	10	2	300-450	1	500	0.5	2000	50	100	-
2SC3279-P	TO-92	NPN	0.75	10	2	420-600	1	500	0.5	2000	50	100	-
2SC5343-G	TO-92	NPN	0.625	50	0.15	200-400	6	2000	0.25	100	10	80	C5343
2SC5343-L	TO-92	NPN	0.625	50	0.15	300-700	6	2000	0.25	100	10	80	C5343
2SC5343-O	TO-92	NPN	0.625	50	0.15	70-140	6	2000	0.25	100	10	80	C5343
2SC5343-Y	TO-92	NPN	0.625	50	0.15	120-240	6	2000	0.25	100	10	80	C5343
2SC945-GR	TO-92	NPN	0.4	50	0.15	200-400	6	1	0.3	100	10	150	-
2SC945-Y	TO-92	NPN	0.4	50	0.15	120-240	6	1	0.3	100	10	150	-
2SD1835	TO-92	NPN	0.75	50	2	100-560	2	100	0.4	1000	50	150	-
8050SS-C	TO-92	NPN	1	25	1.5	120-200	1	100	0.5	800	80	100	8050SS
8050SS-D	TO-92	NPN	1	25	1.5	160-300	1	100	0.5	800	80	100	8050SS
8550SS-C	TO-92	PNP	1	25	1.5	120-200	1	100	0.5	800	80	100	8550SS
8550SS-D	TO-92	PNP	1	25	1.5	160-300	1	100	0.5	800	80	100	8550SS
BC237A	TO-92	NPN	0.35	45	0.1	90	5	0.01	0.2	10	0.5	100	-
BC237B	TO-92	NPN	0.35	45	0.1	150	5	0.01	0.2	10	0.5	100	-
BC237C	TO-92	NPN	0.35	45	0.1	270	5	0.01	0.2	10	0.5	100	-
BC327-16	TO-92	PNP	0.625	-45	-0.8	100-250	-1	-100	-0.7	-500	-50	260	A011
BC327-25	TO-92	PNP	0.625	-45	-0.8	160-400	-1	-100	-0.7	-500	-50	260	B011
BC327-40	TO-92	PNP	0.625	-45	-0.8	250-630	-1	-100	-0.7	-500	-50	260	C011
BC328-16	TO-92	PNP	0.625	-25	-0.8	100-250	-1	-100	-0.7	-500	-50	260	A011
BC328-25	TO-92	PNP	0.625	-25	-0.8	160-400	-1	-100	-0.7	-500	-50	260	B011
BC328-40	TO-92	PNP	0.625	-25	-0.8	250-630	-1	-100	-0.7	-500	-50	260	C011
BC337-16	TO-92	NPN	0.625	45	0.8	100-250	1	300	0.7	500	50	210	A011
BC337-25	TO-92	NPN	0.625	45	0.8	160-400	1	300	0.7	500	50	210	B011
BC337-40	TO-92	NPN	0.625	45	0.8	250-630	1	300	0.7	500	50	210	C011
BC338-16	TO-92	NPN	0.625	25	0.8	100-250	1	300	0.7	500	50	210	A011
BC338-25	TO-92	NPN	0.625	25	0.8	160-400	1	300	0.7	500	50	210	B011
BC338-40	TO-92	NPN	0.625	25	0.8	250-630	1	300	0.7	500	50	210	C011
BC369	TO-92	PNP	0.625	-20	-1	375	-1	-500	-0.5	-1000	-100	65	-
BC546A	TO-92	NPN	0.625	65	0.1	110-220	5	2	0.3	100	5	150	-
BC546B	TO-92	NPN	0.625	65	0.1	200-450	5	2	0.3	100	5	150	-
BC547A	TO-92	NPN	0.625	45	0.1	110-220	5	2	0.3	100	5	150	-
BC547B	TO-92	NPN	0.625	45	0.1	200-450	5	2	0.3	100	5	150	-
BC547C	TO-92	NPN	0.625	45	0.1	420-800	5	2	0.3	100	5	150	-
BC548A	TO-92	NPN	0.625	30	0.1	110-220	5	2	0.3	100	5	150	-
BC548B	TO-92	NPN	0.625	30	0.1	200-450	5	2	0.3	100	5	150	-
BC548C	TO-92	NPN	0.625	30	0.1	420-800	5	2	0.3	100	5	150	-
BC556A	TO-92	PNP	0.625	-65	-0.1	120-220	-5	-2	-0.3	-10	-0.5	150	-
BC556B	TO-92	PNP	0.625	-65	-0.1	180-460	-5	-2	-0.3	-10	-0.5	150	-
BC556C	TO-92	PNP	0.625	-65	-0.1	420-800	-5	-2	-0.3	-10	-0.5	150	-
BC557A	TO-92	PNP	0.625	-45	-0.1	120-200	-5	-2	-0.3	-10	-0.5	150	-
BC557B	TO-92	PNP	0.625	-45	-0.1	180-460	-5	-2	-0.3	-10	-0.5	150	-
BC557C	TO-92	PNP	0.625	-45	-0.1	420-800	-5	-2	-0.3	-10	-0.5	150	-
BC558A	TO-92	PNP	0.625	-30	-0.1	120-220	-5	-2	-0.3	-10	-0.5	150	-
BC558B	TO-92	PNP	0.625	-30	-0.1	180-460	-5	-2	-0.3	-10	-0.5	150	-



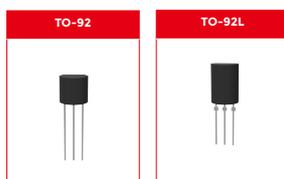
## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
BC558C	TO-92	PNP	0.625	-30	-0.1	420-800	-5	-2	-0.3	-10	-0.5	150	-
BC636-10	TO-92	NPN	0.83	-45	-1	63-160	-2	-150	-0.5	-500	-50	100	-
BC636-16	TO-92	NPN	0.83	-45	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BC638	TO-92	PNP	0.83	-60	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BC640	TO-92	NPN	0.83	-100	-1	100-250	-2	-150	-0.5	-500	-50	100	-
BC637-10	TO-92	NPN	0.83	60	1	25	2	5	0.5	500	50	100	-
BC637-16	TO-92	NPN	0.83	60	1	25	2	5	0.5	500	50	100	-
BC639-10	TO-92	NPN	1	80	1	63-160	2	150	0.5	500	50	100	BC639
BC639-16	TO-92	NPN	1	80	1	100-250	2	150	0.5	500	50	100	BC639
BF420	TO-92	NPN	0.83	300	0.1	50	20	25	0.6	30	5	60	-
BF422	TO-92	NPN	0.83	250	0.1	50	20	25	0.6	30	5	60	-
BF421	TO-92	PNP	0.83	300	0.1	50	20	25	0.6	30	5	60	-
BF423	TO-92	PNP	0.83	250	0.1	50	20	25	0.6	30	5	60	-
D965-R	TO-92	NPN	0.75	22	5	340-950	2	500	0.35	3000	100	NULL	D965R
KSD1616A-G	TO-92	NPN	0.75	60	1	200-400	2	100	0.15	1000	50	160	-
KSD1616A-Y	TO-92	NPN	0.75	60	1	135-270	2	100	0.15	1000	50	160	-
KSD1616-G	TO-92	NPN	0.75	60	1	200-400	2	100	0.15	1000	50	160	-
KSD1616-L	TO-92	NPN	0.75	60	1	300-600	2	100	0.15	1000	50	160	-
KSD1616-Y	TO-92	NPN	0.75	60	1	135-270	2	100	0.15	1000	50	160	-
KSD471A-G	TO-92	NPN	0.8	30	1	200-400	1	100	0.5	1000	100	130	-
KSD471A-O	TO-92	NPN	0.8	30	1	70-140	1	100	0.5	1000	100	130	-
KSD471A-Y	TO-92	NPN	0.8	30	1	120-240	1	100	0.5	1000	100	130	-
KTA1270-O	TO-92	PNP	0.5	-30	-0.5	70-140	-1	-100	-0.25	-100	-10	200	-
KTA1270-Y	TO-92	PNP	0.5	-30	-0.5	120-240	-1	-100	-0.25	-100	-10	200	-
M28S-B	TO-92	NPN	0.625	20	1	300-550	1	1	0.55	600	20	100	-
M28S-C	TO-92	NPN	0.625	20	1	500-700	1	1	0.55	600	20	100	-
M28S-D	TO-92	NPN	0.625	20	1	650-1000	1	1	0.55	600	20	100	-
M8050-C	TO-92	NPN	0.625	25	0.8	120-200	1	100	0.5	800	80	150	Y11
M8050-D	TO-92	NPN	0.625	25	0.8	160-300	1	100	0.5	800	80	150	Y11
M8550-B	TO-92	PNP	0.625	-25	0.8	80-160	-1	-100	-0.5	-800	-80	150	-
M8550-C	TO-92	PNP	0.625	-25	0.8	120-200	-1	-100	-0.5	-800	-80	150	-
M8550-D	TO-92	PNP	0.625	-25	0.8	160-300	-1	-100	-0.5	-800	-80	150	-
MJE13001	TO-92	NPN	1	400	0.2	10-40	20	20	0.5	50	10	8	13001
MJE13002B	TO-92	NPN	0.9	400	0.8	6	10	10	0.5	200	40	5	-
MJE13003B	TO-92	NPN	1	400	1.5	20-40	10	400	0.8	500	100	5	3DD13003
MPS2222-H	TO-92	NPN	0.625	30	0.6	200-300	10	1	1	500	50	300	-
MPS2222-L	TO-92	NPN	0.625	30	0.6	100-200	10	1	1	500	50	300	-
MPS2222A	TO-92	NPN	0.6	40	0.6	75	10	10	0.3	150	15	300	-
MPS2907	TO-92	PNP	0.625	-40	-0.6	60	-10	-1	-0.6	-500	-50	300	MPS2907
MPS2907A	TO-92	PNP	0.625	-60	-0.6	60	-10	-1	-0.6	-500	-50	200	MPS2907A
MPS2907A-H	TO-92	PNP	0.625	-60	-0.6	200-300	-10	-1	-0.6	-500	-50	200	MPS2907A
MPS2907A-L	TO-92	PNP	0.625	-60	-0.6	100-200	-10	-1	-0.6	-500	-50	200	MPS2907A
MPS2907-H	TO-92	PNP	0.625	-40	-0.6	200-300	-10	-1	-0.6	-500	-50	300	MPS2907
MPS2907-L	TO-92	PNP	0.625	-40	-0.6	100-200	-10	-1	-0.6	-500	-50	300	MPS2907
MPS3702	TO-92	PNP	0.625	25	0.8	60-300	5	50	0.25	50	5	100	-
MPS651	TO-92	NPN	0.625	60	2	75	2	50	0.5	2000	200	75	-
MPS750	TO-92	PNP	0.625	-40	-2	400	-2	-500	-0.5	-2000	-200	75	-
MPS751	TO-92	PNP	0.625	-60	-2	75	-2	-500	-0.5	-2000	-200	75	-
MPSA05	TO-92	PNP	0.625	60	0.5	100	1	10	0.25	100	10	100	-
MPSA06	TO-92	NPN	0.625	80	0.5	100	1	10	0.25	100	10	100	MPSA06
MPSA13	TO-92	NPN	0.625	30	0.5	5000	5	10	1.5	100	0.1	125	-
MPSA14	TO-92	NPN	0.625	30	0.5	10000	5	10	1.5	100	0.1	125	-



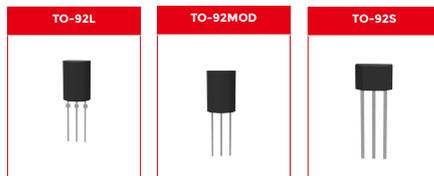
## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
MPSA29	TO-92	NPN	0.625	100	0.5	10000	5	10	1.2	10	0.01	125	MPSA29
MPSA42	TO-92	NPN	0.625	300	0.3	80-250	10	10	0.5	20	2	50	A42
MPSA43	TO-92	NPN	0.625	200	0.3	80-250	10	10	0.4	20	2	50	MPSA43
MPSA44	TO-92	NPN	0.625	400	0.3	50-200	10	10	0.5	10	1	-	A44
MPSA55	TO-92	PNP	0.625	80	0.5	100	1	10	0.25	100	10	50	-
MPSA56	TO-92	PNP	0.625	80	0.5	100	1	10	0.25	100	10	50	-
MPSA92	TO-92	PNP	0.625	-300	-0.3	80-250	-10	-10	-0.5	-20	-2	50	A92
MPSA93	TO-92	PNP	0.625	-200	-0.5	25	-10	-1	-0.5	-20	-2	50	A93
MPSA94	TO-92	PNP	0.625	-400	-0.2	80-300	-10	-10	-0.2	-10	-1	-	A94
MPSH10	TO-92	NPN	0.35	25	0.05	60-200	10	4	0.5	4	0.4	650	-
MPSW01A	TO-92	NPN	0.625	40	1	50	1	1000	0.5	1000	100	50	-
MPSW51	TO-92	PNP	0.625	-30	-1	55	-1	-10	-0.7	-1000	-100	50	-
MPSW51A	TO-92	PNP	0.625	-40	-1	50	-1	-1000	-0.7	-1000	-100	50	-
PN2222-H	TO-92	NPN	0.625	30	0.6	200-300	10	1	1	500	50	300	-
PN2222-L	TO-92	NPN	0.625	30	0.6	100-200	10	1	1	500	50	300	-
PN2222A	TO-92	NPN	0.625	40	0.6	75	10	10	0.3	150	15	300	-
PN2907A	TO-92	PNP	0.6	60	0.6	100-300	10	10	0.4	150	15	200	PN2907A
S8050-B	TO-92	NPN	0.625	25	0.5	85-150	1	50	0.6	500	50	100	S8050
S8050-C	TO-92	NPN	0.625	25	0.5	120-200	1	50	0.6	500	50	100	S8050
S8050-D	TO-92	NPN	0.625	25	0.5	160-300	1	50	0.6	500	50	100	S8050
S8550-B	TO-92	PNP	0.625	25	0.5	85-150	1	50	0.6	500	50	100	S8550
S8550-C	TO-92	PNP	0.625	25	0.5	120-200	1	50	0.6	500	50	100	S8550
S8550-D	TO-92	PNP	0.625	25	0.5	160-300	1	50	0.6	500	50	100	S8550
S9012-G	TO-92	PNP	0.625	25	0.5	112-166	4	1	0.6	500	50	150	S9012
S9012-H	TO-92	PNP	0.625	25	0.5	144-202	4	1	0.6	500	50	150	S9012
S9012-I	TO-92	PNP	0.625	25	0.5	190-300	4	1	0.6	500	50	150	S9012
S9013-G	TO-92	NPN	0.625	25	0.5	112-166	1	50	0.6	500	50	150	S9013
S9013-H	TO-92	NPN	0.625	25	0.5	144-202	1	50	0.6	500	50	150	S9013
S9013-I	TO-92	NPN	0.625	25	0.5	190-300	1	50	0.6	500	50	150	S9013
S9014-B	TO-92	NPN	0.4	45	0.1	100-300	5	1	0.3	100	5	150	S9014
S9014-C	TO-92	NPN	0.4	45	0.1	200-600	5	1	0.3	100	5	150	S9014
S9014-D	TO-92	NPN	0.4	45	0.1	400-1000	5	1	0.3	100	5	150	S9014
S9015-B	TO-92	PNP	0.45	-45	-0.1	100-300	-5	-1	-0.3	-100	-10	150	S9015
S9015-C	TO-92	PNP	0.45	-45	-0.1	200-600	-5	-1	-0.3	-100	-10	150	S9015
S9015-D	TO-92	PNP	0.45	-45	-0.1	400-1000	-5	-1	-0.3	-100	-10	150	S9015
S9018-G	TO-92	NPN	0.31	18	0.05	70-108	5	1	0.5	10	1	600	S9018
S9018-H	TO-92	NPN	0.31	18	0.05	97-146	5	1	0.5	10	1	600	S9018
S9018-I	TO-92	NPN	0.31	18	0.05	130-198	5	1	0.5	10	1	600	S9018
SS8050-C	TO-92	NPN	1	25	1.5	120-200	1	100	0.5	800	80	190	SS8050
SS8050-D	TO-92	NPN	1	25	1.5	160-300	1	100	0.5	800	80	190	SS8050
SS8550-C	TO-92	PNP	1	-25	-1.5	120-200	-1	-100	-0.8	-800	-80	190	SS8550
SS8550-D	TO-92	PNP	1	-25	-1.5	160-300	-1	-100	-0.8	-800	-80	190	SS8550
2SA1020L-O	TO-92L	PNP	0.9	-50	-2	70-140	-2	-500	-0.5	-1000	-50	100	-
2SA1020L-Y	TO-92L	PNP	0.9	-50	-2	120-240	-2	-500	-0.5	-1000	-50	100	-
2SA684	TO-92L	PNP	0.75	-50	-1	85-340	-10	-500	-0.2	-500	-50	200	-
2SB562-B	TO-92L	NPN	0.9	-20	-1	85-170	2	500	-0.5	-800	-80	350	-
2SB562-C	TO-92L	NPN	0.9	-20	-1	120-240	2	500	-0.5	-800	-80	350	-
2SB647L-C	TO-92L	PNP	0.75	-80	-1	100-200	-5	-150	-1	-500	-50	140	-
2SB647L-D	TO-92L	PNP	0.75	-80	-1	160-320	-5	-150	-1	-500	-50	140	-
2SC2655L-O	TO-92L	NPN	0.9	50	2	70-140	2	500	0.5	1000	50	100	-
2SC2655L-Y	TO-92L	NPN	0.9	50	2	120-240	2	500	0.5	1000	50	100	-
2SD468-B	TO-92L	NPN	0.9	20	1	85-170	2	500	0.5	800	80	190	-



## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SD468-C	TO-92L	NPN	0.9	20	1	120-240	2	500	0.5	800	80	190	-
2SD667L-C	TO-92L	NPN	0.9	80	1	100-200	5	150	1	500	50	140	-
2SD667L-D	TO-92L	NPN	0.9	80	1	160-320	5	150	1	500	50	140	-
KTA1281-O	TO-92L	PNP	1	-50	-2	70-140	-2	-500	-0.5	-1000	-50	100	-
KTA1281-Y	TO-92L	PNP	1	-50	-2	120-240	-2	-500	-0.5	-1000	-50	100	-
KTC3205-O	TO-92L	NPN	1	30	2	100-200	2	500	2	1.5	30	120	KTC3205
KTC3205-Y	TO-92L	NPN	1	30	2	160-320	2	500	2	1.5	30	120	KTC3205
TPT5609-A	TO-92L	NPN	0.75	20	1	60-120	2	500	0.5	800	80	190	-
TPT5609-B	TO-92L	NPN	0.75	20	1	85-170	2	500	0.5	800	80	190	-
TPT5609-C	TO-92L	NPN	0.75	20	1	120-240	2	500	0.5	800	80	190	-
2SA1013-O	TO-92MOD	PNP	0.9	-160	-1	120-200	-5	-200	-1.5	-500	-50	15	-
2SA1013-R	TO-92MOD	PNP	0.9	-160	-1	60-120	-5	-200	-1.5	-500	-50	15	-
2SA1013-Y	TO-92MOD	PNP	0.9	-160	-1	200-300	-5	-200	-1.5	-500	-50	15	-
2SA1020-O	TO-92MOD	PNP	0.9	-50	-2	70-140	-2	-500	-0.5	-1000	-50	100	-
2SA1020-Y	TO-92MOD	PNP	0.9	-50	-2	120-240	-2	-500	-0.5	-1000	-50	100	-
2SA965-Y	TO-92MOD	PNP	0.9	-120	-0.8	120-240	-5	-100	-1	-5000	-50	120	-
2SB647A-B	TO-92MOD	PNP	0.9	-100	-1	60-120	-5	-150	-1	-500	-50	140	-
2SB647A-C	TO-92MOD	PNP	0.9	-100	-1	100-200	-5	-150	-1	-500	-50	140	-
2SB647-B	TO-92MOD	PNP	0.9	-80	-1	60-120	-5	-150	-1	-500	-50	140	-
2SB647-C	TO-92MOD	PNP	0.9	-80	-1	100-200	-5	-150	-1	-500	-50	140	-
2SB647-D	TO-92MOD	PNP	0.9	-80	-1	160-320	-5	-150	-1	-500	-50	140	-
2SC2235-Y	TO-92MOD	NPN	0.9	120	0.8	120-240	5	100	1	5000	50	120	-
2SC2236-Y	TO-92MOD	NPN	0.9	30	1.5	160-320	2	500	2	1500	30	120	-
2SC2383-O	TO-92MOD	NPN	0.9	160	1	100-200	5	200	1	500	50	20	C2383
2SC2383-R	TO-92MOD	NPN	0.9	160	1	60-120	5	200	1	500	50	20	C2383
2SC2383-Y	TO-92MOD	NPN	0.9	160	1	160-320	5	200	1	500	50	20	C2383
2SC2482-Y	TO-92MOD	NPN	0.9	300	0.1	90-150	10	20	1	10	1	50	-
2SC2655-O	TO-92MOD	NPN	0.9	50	2	70-140	2	500	0.5	1000	50	100	-
2SC2655-Y	TO-92MOD	NPN	0.9	50	2	120-240	2	500	0.5	1000	50	100	-
2SD667A-B	TO-92MOD	NPN	0.9	100	1	60-120	5	150	1	500	50	140	-
2SD667A-C	TO-92MOD	NPN	0.9	100	1	100-200	5	150	1	500	50	140	-
2SD667A-D	TO-92MOD	NPN	0.9	100	1	160-320	5	150	1	500	50	140	-
2SD667-B	TO-92MOD	NPN	0.9	80	1	60-120	5	150	1	500	50	140	-
2SD667-C	TO-92MOD	NPN	0.9	80	1	100-200	5	150	1	500	50	140	-
2SD667-D	TO-92MOD	NPN	0.9	80	1	160-320	5	150	1	500	50	140	-
MPSW51AM	TO-92MOD	PNP	1	-40	-1	55	-1	-10	-0.7	-1000	-100	50	-
2SA1048-GR	TO-92S	PNP	0.2	-50	0.15	200-400	-6	-2	-0.3	-100	-10	80	-
2SA1048-Y	TO-92S	PNP	0.2	-50	0.15	120-240	-6	-2	-0.3	-100	-10	80	-
2SA1585S-Q	TO-92S	PNP	0.4	-20	-2	120-170	-2	-100	-0.82	-2000	-100	200	1815Q
2SA1585S-R	TO-92S	PNP	0.4	-20	-2	180-390	-2	-100	-0.82	-2000	-100	200	1815R
2SA933AS-Q	TO-92S	PNP	0.2	-50	-0.15	120-270	-2	-100	-0.5	-2000	-100	120	-
2SA933AS-R	TO-92S	PNP	0.2	-50	-0.15	180-390	-2	-100	-0.5	-2000	-100	120	-
2SA933AS-S	TO-92S	PNP	0.2	-50	-0.15	270-560	-2	-100	-0.5	-2000	-100	120	-
2SC1740S-Q	TO-92S	NPN	0.3	50	0.15	120-270	-2	-100	0.4	-2000	-100	100	-
2SC1740S-R	TO-92S	NPN	0.3	50	0.15	180-390	-2	-100	0.4	-2000	-100	100	-
2SC1740S-S	TO-92S	NPN	0.3	50	0.15	270-560	-2	-100	0.4	-2000	-100	100	-
2SC1741S-Q	TO-92S	NPN	0.2	32	0.5	120-270	3	100	0.4	500	50	250	-
2SC2458-GR	TO-92S	NPN	0.2	50	0.15	200-400	6	2	0.25	100	10	80	-
2SC2458-Y	TO-92S	NPN	0.2	50	0.15	120-240	6	2	0.25	100	10	80	-
2SC2668-O	TO-92S	NPN	0.2	30	0.02	70-140	6	1	-	-	-	550	-
2SC2668-R	TO-92S	NPN	0.2	30	0.02	40-80	6	1	-	-	-	550	-
2SC2668-Y	TO-92S	NPN	0.2	30	0.02	100-200	6	1	-	-	-	550	-



## Small Signal & Medium Power Bipolar Transistors

Part Number	Package	Polarity	Power Dissipation	Collector-Base Voltage	Collector Current	DC Current Gain			Base-Emitter Saturation Voltage			Transition Frequency	Marking Code
			$P_C$ (W)	$V_{CE0}$ (V)	$I_C$ (A)	$H_{FE}$	$V_{CE}$ (V)	$I_C$ (mA)	$V_{CE(sat)}$ (V)	$I_C$ (mA)	$I_B$ (mA)	$f_T$ (MHz)	
2SC4115S-Q	TO-92S	NPN	0.3	20	3	120-270	-2	-100	0.5	-2000	-100	200	C4115
2SC4115S-R	TO-92S	NPN	0.3	20	3	180-390	-2	-100	0.5	-2000	-100	200	C4115
2SC4115S-S	TO-92S	NPN	0.3	20	3	270-560	-2	-100	0.5	-2000	-100	200	C4115
KTA1267-GR	TO-92S	PNP	0.4	50	0.15	200-400	6	2	0.3	100	10	80	A1267
KTA1267-O	TO-92S	PNP	0.4	50	0.15	70-140	6	2	0.3	100	10	80	A1267
KTA1267-Y	TO-92S	PNP	0.4	50	0.15	120-240	6	2	0.3	100	10	80	A1267
KTC3199-BL	TO-92S	NPN	0.4	50	0.15	300-700	6	2	0.1	100	10	80	C3199
KTC3199-GR	TO-92S	NPN	0.4	50	0.15	200-400	6	2	0.1	100	10	80	C3199
KTC3199-O	TO-92S	NPN	0.4	50	0.15	70-140	6	2	0.1	100	10	80	C3199
KTC3199-Y	TO-92S	NPN	0.4	50	0.15	120-240	6	2	0.1	100	10	80	C3199

