

# Transistors

## Manufacturer's Code Log

AGT	Agilent Technologies	EPC	EPCOS	LIT	Littelfuse	SEM	SemiKron
ANA	Analog Devices Inc.	FSC	Fairchild Semiconductor	MOT	Motorola Semiconductor	TIS	Texas Instruments
ADV	Advanced Micro Devices	FJS	Fuji Semiconductor	NSC	National Semiconductor	WAS	Winslow Adaptic
AVX	AVX	GIS	General Semiconductor	NTE	NTE Electronics	XCR	Xicor
BNS	Bourns	HVP	High Voltage Power	ONS	ON Semiconductor	XLX	Xilinx
CRY	Crydom Company	IRF	International Rectifier	PHA	Philips Semiconductors		
DLS	Dallas Semiconductor	INT	Intersil	SDK	SanDisk		

## Bipolar Transistors (Continued)

### Plastic-Encapsulated Multiple Transistors — Quad Surface Mount (Case 751B-SO-16) — NPN/PNP

The following table is a listing of the most popular multiple devices available in the plastic SOIC surface-mount package. These devices are available in NPN, PNP, and NPN/PNP configurations.

Stock No.	Mfr.'s Code	Mfr.'s Type	Configuration	V <sub>(BR)CEO</sub>	V <sub>(BR)CSO</sub>	hFE @ I <sub>c</sub> Min.	hFE @ I <sub>c</sub> (mA)	f <sub>r</sub> @ I <sub>c</sub> (MHz) Min.	f <sub>r</sub> @ I <sub>c</sub> (mA)	No. of Leads	Case Outline	Package	EACH
568-4953	ONS	MMPQ2222A	NPN	40	75	40	500.0	200	20.0	16	751B-05	SOIC	1.21
568-4960	ONS	MMPQ6700	NPN/PNP	40	40	70	10.0	200	10.0	16	751B-05	SOIC	.95

## Small Signal Bipolar Transistors

### Leaded

Stock No.	Mfr.'s Code	Mfr.'s Type	Configuration	V <sub>CEO</sub> (V)	I <sub>c</sub> (mA)	hFE Min.	hFE Typ.	hFE Max.	@V <sub>CE</sub> /I <sub>c</sub>	No. of Leads	Package	EACH
950-3018	GIS	BC547A	NPN	45	100	—	220	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3030	GIS	BC547B	NPN	45	100	—	330	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3032	GIS	BC547C	NPN	45	100	—	600	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3000	GIS	2N3904	NPN	40	200	100	—	300	1 V/10 mA	3	TO-92 (TO-226AA)	.11
950-3004	GIS	2N4401	NPN	40	600	—	100	300	1 V/150 mA	3	TO-92 (TO-226AA)	.13
950-3038	GIS	BC337-40	NPN	45	800	250	400	630	1 V/300 mA	3	TO-92 (TO-226AA)	.09
950-3042	GIS	BC557A	PNP	45	100	—	220	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3044	GIS	BC557B	PNP	45	100	—	330	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3046	GIS	BC557C	PNP	45	100	—	600	—	5 V/2 mA	3	TO-92 (TO-226AA)	.09
950-3002	GIS	2N3906	PNP	40	200	100	—	300	1 V/10 mA	3	TO-92 (TO-226AA)	.11
950-3048	GIS	MPSA56	PNP	80	500	—	100	—	1 V/100 mA	3	TO-92 (TO-226AA)	.28
950-3006	GIS	2N4403	PNP	40	600	—	100	300	1 V/150 mA	3	TO-92 (TO-226AA)	.13
950-3008	GIS	MPS2907A	PNP	40	600	—	100	300	10 V/150 mA	3	TO-92 (TO-226AA)	.13
950-3021	GIS	BC327-16	PNP	45	800	100	160	250	1 V/300 mA	3	TO-92 (TO-226AA)	.10
950-3023	GIS	BC327-25	PNP	45	800	160	250	400	1 V/300 mA	3	TO-92 (TO-226AA)	.09
950-3025	GIS	BC327-40	PNP	45	800	250	400	630	1 V/300 mA	3	TO-92 (TO-226AA)	.09

### Plastic

950-1034	GIS	BCW60B	NPN	32	100	180	—	310	5 V/2 mA	3	SOT-23 (TO-236AB)	.09
950-1035	GIS	BCW60D	NPN	32	100	380	—	630	5 V/2 mA	3	SOT-23 (TO-236AB)	.09
950-1038	GIS	BCX70K	NPN	45	200	380	—	630	5 V/2 mA	3	SOT-23 (TO-236AB)	.08
950-1036	GIS	BCW61B	PNP	32	100	180	—	310	5 V/2 mA	3	SOT-23 (TO-236AB)	.09
950-1037	GIS	BCW61D	PNP	32	100	380	—	630	5 V/2 mA	3	SOT-23 (TO-236AB)	.09
950-1039	GIS	BCX71K	PNP	45	200	380	—	630	5 V/2 mA	3	SOT-23 (TO-236AB)	.08

### Surface-Mount

950-3012	GIS	MMBT3904	NPN	40	200	100	—	300	1 V/10 mA	3	SOT-23 (TO-236AB)	.09
950-3033	GIS	BC817-16	NPN	45	500	100	—	250	1 V/100 mA	3	SOT-23 (TO-236AB)	.18
950-3028	GIS	BC817-40	NPN	45	500	250	—	600	1 V/100 mA	3	SOT-23 (TO-236AB)	.14
950-3016	GIS	MMBT2222A	NPN	40	600	—	100	300	10 V/150 mA	3	SOT-23 (TO-236AB)	.12
950-3037	GIS	BCW66G	NPN	45	800	160	—	400	1 V/100 mA	3	SOT-23 (TO-236AB)	.28
950-3043	GIS	BC857B	PNP	45	100	—	330	—	5 V/2 mA	3	SOT-23 (TO-236AB)	.10
950-3045	GIS	BC857C	PNP	45	100	—	600	—	5 V/2 mA	3	SOT-23 (TO-236AB)	.13
950-3047	GIS	BC807-16	PNP	45	500	100	—	250	1 V/100 mA	3	SOT-23 (TO-236AB)	.13
950-3049	GIS	BC807-25	PNP	45	500	160	—	400	1 V/100 mA	3	SOT-23 (TO-236AB)	.13
950-3022	GIS	MMBT4403	PNP	40	600	—	100	300	1 V/150 mA	3	SOT-23 (TO-236AB)	.12
950-3019	GIS	MMBT2907A	PNP	40	600	—	100	300	10 V/150 mA	3	SOT-23 (TO-236AB)	.12

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## Field Effect Transistors

### Small Signal JFETs

JFETs operate in the depletion mode. They are available in both P- and N-channel and are offered in both Through-hole and Surface-Mount Packages. Applications include general-purpose amplified, switches and choppers, and RF amplifiers

and mixers. These devices are economical and very rugged. The drain and source are interchangeable on many typical FETs.

### Surface-Mount Choppers/Switches JFETs

Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23)) — N-Channel

The following is a listing of small-signal surface-mount JFET devices intended for switching and chopper applications.

Stock No.	Mfr.'s Code	Mfr.'s Type	Marking	R <sub>DS(on)</sub> (Ω) Max.	t <sub>off</sub> (ns) Max.	V <sub>(BR)SS</sub> (V)	V <sub>GS(off)</sub> (V) Min.	V <sub>GS(off)</sub> (V) Max.	I <sub>SS</sub> (mA) Min.	I <sub>SS</sub> (mA) Max.	No. of Leads	Case Outline	Package	EACH
568-1902	ONS	MMBF4393LT1	6G	100	50	30.0	0.5	3.0	5.0	30	3	318-08	SOT-23 (TO-236AB)	.24

### Surface-Mount Choppers/Switches JFETs

Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23)) — P-Channel

568-7123	ONS	MMBFJ175LT1	6W	125	—	3.0	6.0	30.0	7.0	60	3	318-08	SOT-23 (TO-236AB)	.21
568-2263	ONS	MMBFJ177LT1	6Y	300	—	-30.0	0.8	2.5	1.5	20	3	318-08	SOT-23 (TO-236AB)	.31

### JFET High-Frequency Amplifiers (Case 29-04 — TO-226AA (TO-92)) — N-Channel

The following is a listing of small signal JFETs that are intended for high-frequency applications. These are candidates for VHF/UHF oscillators, mixers and front-end amplifiers.

Stock No.	Mfr.'s Code	Mfr.'s Type	R <sub>e</sub> Y <sub>s</sub> @ f (mmho)	R <sub>e</sub> Y <sub>s</sub> @ f (kHz)	R <sub>e</sub> Y <sub>s</sub> @ f (μmho Max.)	R <sub>e</sub> Y <sub>s</sub> @ f (kHz)	C <sub>iss</sub> (pF) Max.	C <sub>rss</sub> (pF) Min.	V <sub>(BR)SS</sub> V <sub>(BR)DSO</sub> (V) Min.	N <sub>f</sub> @ R <sub>e</sub> =1 K dB Max.	N <sub>f</sub> @ R <sub>e</sub> =1 K f (MHz)	V <sub>GS(off)</sub> (V) Min.	V <sub>GS(off)</sub> (V) Max.	I <sub>SS</sub> (mA) Min.	I <sub>SS</sub> (mA) Max.	No. of Leads	Case Outline	Package	EACH
568-1096	ONS	2N5485	3.0	400	100	400	5.0	1.0	4.0	400.00	25.0	0.5	4.0	4	10	3	29-11	TO-92 (TO-226AA)	.33
568-1097	ONS	2N5486	3.5	400	100	400	5.0	1.0	4.0	400.00	25.0	2.0	6.0	8	20	3	29-11	TO-92 (TO-226AA)	.33
568-1883	ONS	J309	12.0 <sup>1</sup>	100	250 <sup>1</sup>	100	7.5	2.5	1.5 <sup>1</sup>	100.00	25.0	1.0	4.0	12	30	3	29-11	TO-92 (TO-226AA)	.30
568-1884	ONS	J310	12.0 <sup>1</sup>	100	250 <sup>1</sup>	100	7.5	2.5	1.5 <sup>1</sup>	100.00	25.0	2.0	6.5	24	60	3	29-11	TO-92 (TO-226AA)	.33

<sup>1</sup>Typical.