

Lead Mounted Transistors

NPN Transistors/TO-92

Type Number	V_{CE0}	$h_{FE} @ V_{CE}/I_C$		$V_{CE SAT} @ I_C/I_B$		$f_T @ V_{CE}/I_C$		$C_{OB} @ V_{CB}$		Pin Diagram See Page 45
	Volts		V/mA	max. V	mA/mA	MHz	V/mA	max pF	V	
2N4124	25	120-360	1/2	0.30	50/5	300	20/10	4.0	5	Fig. 1
2N5172	25	100-750	10/10	0.25	10/1	—	—	10	10	Fig. 3
2N5088	30	350-1400	5/1	0.50	10/1	—	—	4.0	10	Fig. 1
PN2222A	40	100-300	10/150	1.00	500/50	min. 300	20/20	8.0	10	Fig. 1
2N3904	40	100-300	1/10	0.30	50/5	min. 300	20/10	4.0	5	Fig. 1
2N4401	40	100-300	1/150	0.75	500/50	min. 250	10/20	6.5	5	Fig. 1
MPSA05/ITTA05	60	min. 50	1/100	0.25	100/10	min. 100	2/10	—	—	Fig. 1
MPSA06/ITTA06	80	min. 50	1/100	0.25	100/10	min. 100	2/10	—	—	Fig. 1
2N5551	160	80-250	5/10	0.25	50/5	min. 100	10/10	6.0	10	Fig. 1
MPSA42	300	40 min.	10/30	0.50	20/2	min. 50	20/10	4.0	20	Fig. 1

NPN Transistors - European Types/TO-92

Type Number	V_{CE0}	$h_{FE} @ V_{CE}/I_C$		$V_{CE SAT} @ I_C/I_B$		$f_T @ V_{CE}/I_C$		$C_{OB} @ V_{CB}$		Pin Diagram See Page 45
	Volts		V/mA	max. V	mA/mA	MHz	V/mA	max pF	V	
BC337	45	100-630	1/100	0.7	500/50	100	5/10	typ. 12	10	Fig. 2
BC337-16	45	100-250	1/100	0.7	500/50	100	5/10	typ. 12	10	Fig. 2
BC337-25	45	160-400	1/100	0.7	500/50	100	5/10	typ. 12	10	Fig. 2
BC337-40	45	250-630	1/100	0.7	500/50	100	5/10	typ. 12	10	Fig. 2
BC547A	45	110-220	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2
BC547B	45	200-450	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2
BC547C	45	420-800	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2
BC548A	30	110-220	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2
BC548B	30	200-450	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2
BC548C	30	420-800	5/2	0.6	100/5	300	5/10	6.0	10	Fig. 2

NPN Darlington Amplifiers/TO-92

Type Number	V_{CE0}	$h_{FE} @ V_{CE}/I_C$		$V_{CE SAT} @ I_C/I_B$		$f_T @ V_{CE}/I_C$		$V_{BE(ON)} @ V_{CE}/I_C$		Pin Diagram See Page 45
	Volts		V/mA	max. V	mA/mA	MHz	V/mA	max V	V/mA	
MPSA13	30	10000	5/100	1.5	100/0.1	125	5/10	2.0	5/100	Fig. 1
MPSA14	30	20000	5/100	1.5	100/0.1	125	5/10	2.0	5/100	Fig. 1

PNP Transistors/TO-92

Type Number	V_{CE0}	$h_{FE} @ V_{CE}/I_C$		$V_{CE SAT} @ I_C/I_B$		$f_T @ V_{CE}/I_C$		$C_{OB} @ V_{CB}$		Pin Diagram See Page 45
	Volts		V/mA	max. V	mA/mA	MHz	V/mA	max pF	V	
2N4126	25	120-480	10/2	0.40	50/5	min. 250	20/10	10	0.5	Fig. 1
PN2907A	60	100-300	10/150	1.60	500/50	min. 200	20/50	8	10	Fig. 1
2N3906	40	100-300	1/10	0.40	50/5	min. 250	20/10	4.5	5	Fig. 1
2N4403	40	100-300	1/150	0.75	500/50	min. 200	10/20	8.5	5	Fig. 1
MPSA55/ITTA55	60	min. 50	1/100	0.25	100/10	min. 100	2/10	—	—	Fig. 1
MPSA56/ITTA56	80	min. 50	1/100	0.25	100/10	min. 100	2/10	—	—	Fig. 1
2N5401	150	40-200	10/1	0.20	10/1	min. 100	10/10	6.0	10	Fig. 1
MPSA92	300	min. 40	10/10	0.50	20/2	min. 50	20/10	8.0	20	Fig. 1

OPERATING/STORAGE TEMPERATURE -55°C to +150°C

Lead Mounted Transistors

PNP Transistors - European Types/TO-92

Type Number	V _{CEO}	h _{FE} @ V _{CE} /I _C	V _{CE SAT} @ I _C /I _B		f _T @ V _{CE} /I _C		C _{OB} @ V _{CB}		Pin Diagram	
	Volts		max.V	mA/mA	MHz	V/mA	max. pF	V		
BC327	45	100-630	1/100	0.70	500/50	100	5/10	typ. 12	10	Fig. 2
BC327-16	45	100-250	1/100	0.70	500/50	100	5/10	typ. 12	10	Fig. 2
BC327-25	45	160-400	1/100	0.70	500/50	100	5/10	typ. 12	10	Fig. 2
BC327-40	45	250-630	1/100	0.70	500/50	100	5/10	typ. 12	10	Fig. 2
BC557A	45	110-220	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2
BC557B	45	200-450	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2
BC557C	45	420-800	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2
BC558A	30	110-220	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2
BC558B	30	200-450	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2
BC558C	30	420-800	5/2	0.65	100/5	150	5/10	6.0	10	Fig. 2

OPERATING/STORAGE TEMPERATURE -55°C to +150°C

Lead Mounted Mosfet Devices

N-Channel Enhancement Mode Transistors/TO-92

Type Number	Maximum Drain-Source Voltage	Maximum Continuous Drain Current	Max. Power Dissipation at T _C = 25°C	Gate Threshold Voltage @ V _{GS} = V _{DS} I _D = 1 mA			Drain Source On Resistance (1)				Gate Body Leakage Current @ V _{GS} = 15V V _{DS} = 0	Pin Diagram
	Volts	Amps	Watts	Volts			Ohms	V _{GS}	I _D	I _{GSS} max.		
				min.	Typ.	max.					Typ.	
BS107	200	0.12	0.83	—	1.8	3.0	18	28	2.8	0.02	10	Fig. 4
BS108	200	0.23	0.83	—	1.5	2.5	5.5	8.0	2.8	0.10	10	Fig. 4
BS170	60	0.30	0.83	0.8	2.0	3.0	3.5	5.0	10	0.20	10	Fig. 4
2N7000	60	0.20	0.40	0.8	2.1	3.0	1.2	5.0	10	0.50	10	Fig. 5

(1) Pulse Test Width 80µs; Pulse Duty Factor 1%

P-Channel Enhancement Mode Transistors/TO-92

Type Number	Maximum Drain-Source Voltage	Maximum Continuous Drain Current	Max. Power Dissipation at T _C = 25°C	Gate Threshold Voltage @ V _{GS} = V _{DS} I _D = 1 mA			Drain Source On Resistance (1)				Gate Body Leakage Current @ V _{GS} = 15V V _{DS} = 0	Pin Diagram
	Volts	Amps	Watts	Volts			Ohms	V _{GS}	I _D	I _{GSS} max.		
				min.	Typ.	max.					Typ.	
BS208	-200	-0.20	0.83	—	-2.8	-4.0	7.0	14	-10	-0.1	-10	Fig. 4
BS250	-45	-0.18	0.83	-1.0	-2.8	-3.5	9.0	14	-10	-0.2	-20	Fig. 4

(1) Pulse Test Width 80µs; Pulse Duty Factor 1%

OPERATING/STORAGE TEMPERATURE -55°C to +150°C

Pin Origination for TO-92 Transistors and Mosfets

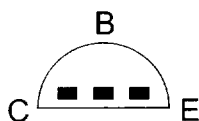


Fig. 1

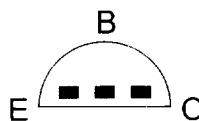


Fig. 2

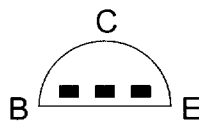


Fig. 3

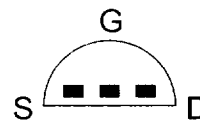


Fig. 4

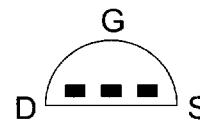


Fig. 5

Bottom View (Leads Up)