

Transistors

Field effect transistors

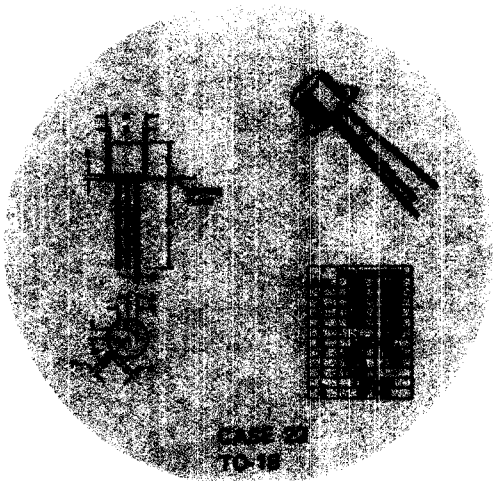
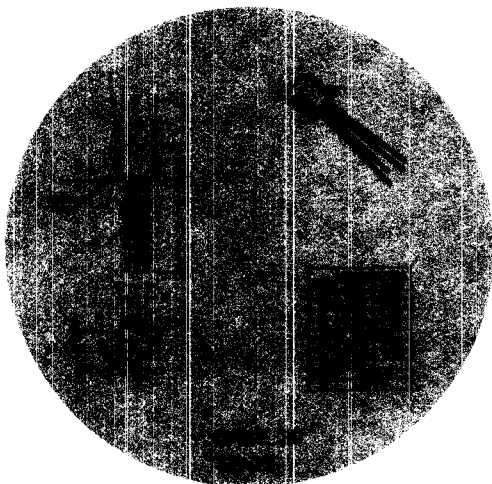
Motorola offers a line of field-effect transistors that encompasses the latest technology and covers the full range of FET applications. Included is a wide variety of junction FETs and MOSFETs, with N- or P-channel polarity with both single and dual gates. These FETs include devices developed for operation across the frequency range from dc to UHF in switching and amplifying applications. Package options from low cost plastic to metal TO-72 packages are available.

The selector guides on the following pages are designed to emphasize those FET families and device types that, by virtue of widespread industry use, ease of manufacture and, consequently, low relative cost, merit first consideration for new equipment design.

APPLICATION: SWITCH

Part. No.	$r_{ds(on)}$ max. Ω	$V_{GS(off)}$		$I_D(off)$ max. nA	I_{DSS}		C_{rss} max. pF	$V_{(BR)GSS}$ min. V	Technology	Package
		min.	max. V		min.	max. mA				
2N3993	150	4.0	9.5	1.2	10	—	4.5	25	Pch Junction	TO-72
2N3994	300	1.0	5.5	1.2	2	—	5.0	25	Pch Junction	TO-72
2N4091	30	5	10	0.2	30	—	5.0	40	Nch Junction	TO-18
2N4092	50	2	7	0.2	15	—	5.0	40	Nch Junction	TO-18
2N4093	80	1	5	0.2	8	—	5.0	40	Nch Junction	TO-18
2N4351	300	1	5	0.01			1.3	25	Nch Enh. MOS	TO-72
2N4352	600	1	5	0.01			1.3	25	Pch Enh. MOS	TO-72
2N4391	30	4	10	0.1	50	150	3.5	40	Nch Junction	TO-18
2N4392	60	2	5	0.1	25	75	3.5	40	Nch Junction	TO-18
2N4393	100	0.5	3	0.1	5	30	3.5	40	Nch Junction	TO-18
2N4856	25	4	10	0.25	50	—	8.0	40	Nch Junction	TO-18
2N4857	40	2	6	0.25	20	100	8.0	40	Nch Junction	TO-18
2N4858	60	0.8	4	0.25	8	80	8.0	40	Nch Junction	TO-18
2N4859	25	4	10	0.25	50	—	8.0	30	Nch Junction	TO-18
2N4860	40	2	6	0.25	20	100	8.0	30	Nch Junction	TO-18
2N4861	60	0.8	4	0.25	8	80	8.0	30	Nch Junction	TO-18
2N5638	30	—	12	1.0	50	—	4.0	30	Nch Junction	TO-92
2N5639	60	—	8	1.0	25	—	4.0	30	Nch Junction	TO-92
2N5640	100	—	6	1.0	5	—	4.0	30	Nch Junction	TO-92
MPF970	100	5	12	10.0	15	60	5.0	30	Pch Junction	TO-92
MPF971	250	1	7	10.0	2	30	5.0	30	Pch Junction	TO-92
MPF4391	30	4	10	1.0	60	130	3.5	30	Nch Junction	TO-92
MPF4392	60	2	5	1.0	25	75	3.5	30	Nch Junction	TO-92
MPF4393	100	0.5	3	1.0	5	30	3.5	30	Nch Junction	TO-92

OUTLINE DIMENSIONS



The TO-18 and TO-72 are designed for applications requiring hermeticity as well as greater power dissipation than available with the TO-92 package.

APPLICATION: HIGH FREQUENCY

Part No.	$ Y_{fs} $		C_{rss} max. pF	$ Y_{os} $ max. μ mho	G_p min. dB	N_f max. dB	G_c min. dB	ωF MHz	Ideal for	Technology	Package
	min.	max. mmho									
2N3821	1.5	4.5	3.0	10						Nch Junction	TO-72
2N3822	3.0	6.5	3.0	20						Nch Junction	TO-72
2N3823	3.5	6.5	2.0	35		2.5		100	VHF Ampl. Mixer	Nch Junction	TO-72
2N3824	—	—	3.0	—						Nch Junction	TO-72
2N4416	4.5	7.5	0.8	50	10	4		400	VHF/UHF Ampl.	Nch Junction	TO-72
2N5457	1.0	5.0	3.0	50						Nch Junction	TO-92
2N5458	1.5	5.5	3.0	50						Nch Junction	TO-92
2N5459	2.0	6.0	3.0	50						Nch Junction	TO-92
2N5484	3.0	6.0	1.0	50	16	3.0		100	VHF/UHF Ampl.	Nch Junction	TO-92
2N5485	3.5	7.0	1.0	60	10	4.0		400	VHF/UHF Ampl.	Nch Junction	TO-92
2N5486	4.0	8.0	1.0	75	10	4.0		400	VHF/UHF Ampl.	Nch Junction	TO-92
3N128	5	12	0.28	500	13.5	5	—	200	VHF Ampl. — Oscil.	Nch Depl. MOS	TO-72
3N223	17	40	0.05	—	—		21	200	VHF Mixer	Nch Depl. Dual Gate MOS	TO-72
MFE130	8	20	0.05	—	17	5	—	105	RF Ampl.	Nch Depl. Dual Gate MOS	TO-72
MFE131	8	20	0.05	—	20	5	—	60	RF Ampl.	Nch Depl. Dual Gate MOS	TO-72
MFE132	8	20	0.05	—	—	—	12	200	Mixer	Nch Depl. Dual Gate MOS	TO-72
MFE140	10	20	0.05	—	20	3.5	15	100	FM Ampl. Mixer	Nch Depl. Dual Gate MOS	TO-72
BF256A	4.5	—	0.7	—	11	7.5		800	VHF/UHF Ampl.	Nch Junction	TO-92*
BF256B	4.5	—	0.7	—	11	7.5		800	VHF/UHF Ampl.	Nch Junction	TO-92*
BF256C	4.5	—	0.7	—	11	7.5		800	VHF/UHF Ampl.	Nch Junction	TO-92*

APPLICATION: GENERAL PURPOSE

Part No.	$ Y_{fs} $		$V_{GS(off)}$		I_{GSS} max. nA	N_f max. dB	C_{rss} max. pF	$V(BR)_{GSS}$ min. V	Ideal for	Technology	Package
	min.	max. mmho	min.	max. V							
2N3993	6	12	4.0	9.5	—	—	4.5	25		Pch Junction	TO-72
2N3994	4	10	1.0	5.5	—	—	5.0	25		Pch Junction	TO-72
2N4220	1	4	—	4.0	0.1	2.5	2.0	30	Amplifier	Nch Junction	TO-72
2N4221	2	5	—	6.0	0.1	2.5	2.0	30	Amplifier	Nch Junction	TO-72
2N4222	2.5	6	—	8.0	0.1	2.5	2.0	30	Amplifier	Nch Junction	TO-72
2N5457	1	5	0.5	6.0	1.0	—	3.0	25	Audio	Nch Junction	TO-92
2N5458	1.5	5.5	1.0	7.0	1.0	—	3.0	25	Audio	Nch Junction	TO-92
2N5459	2	6	2.0	8.0	1.0	—	3.0	25	Audio	Nch Junction	TO-92
2N5460	1	4	0.75	6.0	5.0	2.5	2.0	40	Amplifier	Pch Junction	TO-92
2N5461	1.5	5	1.0	7.5	5.0	2.5	2.0	40	Amplifier	Pch Junction	TO-92
2N5462	2	6	1.8	9.0	5.0	2.5	2.0	40	Amplifier	Pch Junction	TO-92
MFE823	1	—	2.0	6.0	0.001	—	1.5	25	Smoke detectors, Ph. meters,	Pch Enh. MOS	TO-18
MFE824	1	4	—	6.0	0.001	—	0.7	20	Electrometer ampl.	Nch Enh. Depl. MOS	TO-18
MPF102	2	7.5	—	8.0	2.0	—	3.0	25	Ampl.-Mixer	Nch Junction	TO-92
BF245A	3	6.5	0.4	2.2**	5.0	1.5	1.1	30	Amplifier	Nch Junction	TO-92*
BF245B	3	6.5	1.6	3.8**	5.0	1.5	1.1	30	Amplifier	Nch Junction	TO-92*
BF245C	3	6.5	3.2	7.5**	5.0	1.5	1.1	30	Amplifier	Nch Junction	TO-92*

* Leads formed to TO-18 pin circle.
** V_{GS} at 200 μ A.

OUTLINE DIMENSIONS

The TO-92 is the most popular, high-volume plastic package and will meet most of your high-performance, low-cost requirements.

