

Metal-Can Transistors

Metal-can packages are intended for use in industrial applications where harsh environmental conditions are encountered. These packages enhance reliability of the end products due to their resistance to varying humidity and extreme temperature ranges.

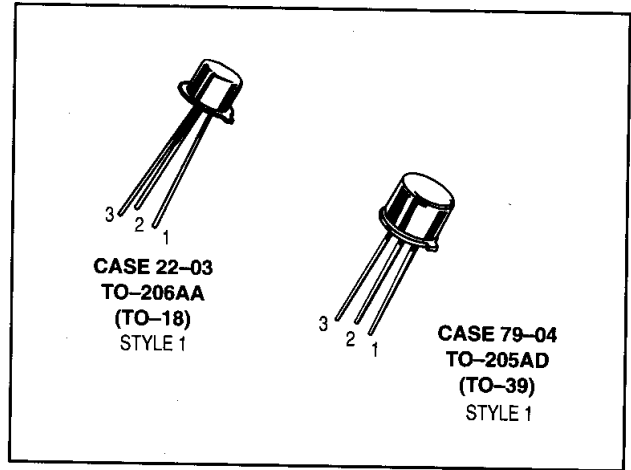


Table 26. Metal-Can General-Purpose Transistors

These transistors are designed for DC to VHF amplifier applications, general-purpose switching applications, and complementary circuitry. Devices are listed in decreasing order of $V_{(BR)CEO}$ within each package group.

Device Type	$V_{(BR)CEO}$ Volts Min	$f_T @ I_C$		I_C mA Max	$h_{FE} @ I_C$		
		MHz Min	mA		Min	Max	mA
Case 22-03 — TO-206AA (TO-18) — NPN							
<i>2N720A</i>	80	50	50	150	40	120	150
<i>2N3700</i>	80	80	50	1000	50	—	500
BC107	45	150	10	200	110	450	2.0
BC107A	45	150	10	200	110	220	2.0
BC107B	45	150	10	200	200	450	2.0
<i>2N2222A</i>	40	300	20	800	100	300	150
<i>2N3947</i>	40	300	10	200	100	300	10
BC109C	25	150	10	200	420	800	2.0
Case 22-03 — TO-206AA (TO-18) — PNP							
2N2906A	60	200	50	600	40	120	150
<i>2N2907A</i>	60	200	50	600	100	300	150
<i>2N3251A</i>	60	300	10	200	100	300	10
BC177B	45	200	10	200	180	460	2.0
Case 79-04 — TO-205AD (TO-39) — NPN							
<i>2N3019</i>	80	100	50	1000	100	300	150
2N3020	80	80	50	1000	40	120	150
2N1893	80	50	50	500	40	120	150
<i>2N2219A</i>	40	300	20	800	100	300	150
2N2218A	40	250	20	800	40	120	150
Case 79-04 — TO-205AD (TO-39) — PNP							
2N4033	80	—	—	1000	25	—	1000
2N4036	65	60	50	1000	40	140	150
2N2904A	60	200	50	600	40	120	150
<i>2N2905A</i>	60	200	50	600	100	300	150
2N4032	60	—	—	1000	40	—	1000

Devices listed in bold, italic are Motorola preferred devices.

Metal-Can Transistors (continued)

Table 27. Metal-Can High-Gain/Low-Noise Transistors

These transistors are characterized for high-gain and low-noise applications. Devices are listed in decreasing order of NF.

Device Type	NF Wideband dB Typ Max	V _{(BR)CEO} Volts Min	I _C mA Max	hFE @ I _C			f _T @ I _C	
				Min	Max	μA mA	MHz Min	mA
Case 22-03 — TO-206AA (TO-18) — NPN								
2N2484	8.0(1)	60	50	100	500	10	15	0.05
2N930A	3.0	45	30	—	600	10	45	0.5
2N930	3.0	45	30	—	600	10	30	0.5
Case 22-03 — TO-206AA (TO-18) — PNP								
2N3964	4.0	45	200	250	600	1.0(24)	50	0.5
2N3799	2.5	60	50	300	900	500	30	0.5

Table 28. Metal-Can High-Voltage/High-Current Transistors

The following table lists Motorola standard devices that have high collector-emitter breakdown voltage. Devices are listed in decreasing order of V_{(BR)CEO} within each package type.

Device Type	V _{(BR)CEO} Volts Min	I _C mA Max	hFE @ I _C		V _{CE(sat)} @ I _C & I _B			f _T @ I _C	
			Min	mA	Volts Max	mA	mA	MHz Min	mA
Case 22-03 — TO-206AA (TO-18) — NPN									
2N6431	300	50	50	30	0.5	20	2.0	50	10
BSS73	300	500	40	30	1.0	50	5.0	50	20
Case 22-03 — TO-206AA (TO-18) — PNP									
2N6433	300	500	30	30	0.5	20	20	50	10
BSS76	300	500	35	30	0.5	50	5.0	50	20
2N3497	120	100	40	10	0.35	10	1.0	150	20
Case 79-04 — TO-205AD (TO-39) — NPN									
2N4927	250	50	20	30	2.0	30	3.0	30	10
2N3500	150	300	40	150	0.4	150	15	150	20
2N3501	150	300	100	150	0.4	150	15	150	20
Case 79-04 — TO-205AD (TO-39) — PNP									
2N4931	250	50	20	30	5.0	10	1.0	20	20
2N3636	175	1000	50	50	0.5	50	5.0	150	30
2N3637	175	1000	100	50	0.5	50	5.0	200	30

(1) Typical

(24) T_A = 25°C

Devices listed in bold, italic are Motorola preferred devices.

Metal-Can Transistors (continued)

Table 29. Metal-Can Switching Transistors

The following devices are intended for use in general-purpose switching and amplifier applications. Within each package group shown, the devices are listed in order of decreasing turn-on time (t_{on}).

Device Type	t_{on} & t_{off} @ I_C			$V_{(BR)CEO}$ Volts Min	I_C mA Max	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C @ I_B			f_T MHz Min	I_C mA
	ns Max	ns Max	mA			Min	mA	Volts Max	mA	mA		
Case 22-03 — TO-206AA (TO-18) — NPN												
2N4014	35	60	500	40	1000	35	500	0.52	500	50	300	50
2N2369A	12	18	10	15	200	40	10	0.2	10	1.0	500	10
BSX20	7.0	21	100	15	500	20	10	0.25	10	1.0	500	10
Case 22-03 — TO-206AA (TO-18) — PNP												
2N3546	40	30	50	12	200	25	50	0.25	50	5.0	700	10
Case 79-04 — TO-205AD (TO-39) — NPN												
MM3725	35	60	500	40	2000	35	500	0.52	500	50	300	50
Case 79-04 — TO-205AD (TO-39) — PNP												
2N3467	40	90	500	40	1000	40	500	0.5	500	50	175	50
2N3468	40	90	500	50	1000	25	500	0.6	500	50	150	50

Devices listed in bold, italic are Motorola preferred devices.