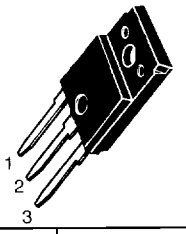
STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER



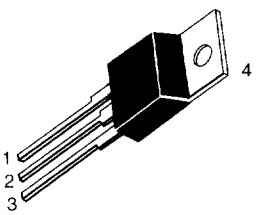
CASE 340B-03

I_CCont Amps Max	$V_{CEO(sus)}$ Volts Min	Device Type NPN	Device Type PNP	h_{FE} Min/Max	@ I_C Amp	Resistive Switching t_s µs Max	Resistive Switching t_f µs Max	Resistive Switching @ I_C Amp	f_T MHz Min	P_D (Case) Watts @ 25°C
8	500	**MJF16006A**		5 min	8	2.5	0.25	5		50
	700	**BU1008AF**		3 min	4.5	8**	0.5**	4.5	7 typ	50
		BU1008ADF†		3 min	4.5	8**	0.5**	4.5	7 typ	50
10	400	**MJF10012##**		100/12k	6	15	15	6		50
	650	**MJF16212★**		4/10	10				2.75 typ	50
	800	**MJF16018★**		4 min	5	4.5 typ	0.2 typ	5		50
12	500*	**MJF16206★**		5/13	10	2.25	0.25	6.5	3 typ	50
15	500	**MJF16010A**		5 min	15	3	0.4	10		50
		MJF16210★		5/13	15		0.24**	8.5	2.5 typ	50
20	100	**MJF6284##**	**MJF6287##**	750/18k	10	1.0	2.0	10	4#	50

† "D" designator indicates internal Collector-emitter diode
# $|h_{fe}|$ @ 1 MHz, ## Darlington
* V_{CES} = 1200 volts

** Switching tests performed w/special application simulator circuit. See data sheet for details.
★ New Product

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR



CASE 221A-04 (TO-220AB)

I_CCont Amps Max	$V_{CEO(sus)}$ Volts Min	Device Type NPN	Device Type PNP	h_{FE} Min/Max	@ I_C Amp	Resistive Switching t_s µs Max	Resistive Switching t_f µs Max	Resistive Switching @ I_C Amp	f_T MHz Min	P_D (Case) Watts @ 25°C
0.5	350	**MJE2360T**		15 min	0.1				10 typ	30
		MJE2361T		40 min	0.1				10 typ	30
1	80	TIP29B	TIP30B	15/75	1	0.6 typ	0.3 typ	1	3	30
	100	TIP29C	TIP30C	15/75	1	0.6 typ	0.3 typ	1	3	30
	250	**TIP47**		30/150	0.3	2 typ	0.18 typ	0.3	10	40
	300	**TIP48**	**MJE5730**	30/150	0.3	2 typ	0.18 typ	0.3	10	40
	350	**TIP49**	**MJE5731**	30/150	0.3	2 typ	0.18 typ	0.3	10	40
	400	**TIP50**	**MJE5731A***	30/150	0.3	2 typ	0.18 typ	0.3	10	40
2	60	BD239A	BD240A	15 min	1				3	30
		TIP110##	TIP115##	500 min	2	1.7 typ	1.3 typ	2	25#	50
	80	**BD239B**	**BD240B**	15 min	1				3	30
		TIP111##	**TIP116##**	500 min	2	1.7 typ	1.3 typ	2	25#	50
	100	**BD239C**	**BD240C**	25 min	1				3	30
		TIP112## [C]	**TIP117##** [C]	500 min	2	1.7 typ	1.3 typ	2	25#	50

$|h_{fe}|$ @ 1 MHz, ## Darlington
* V_{CEO} = 375 V

[C] Available as preferred chip
Device Numbers in **Bold** type are preferred.

(continued)

TABLE 3 – PLASTIC TO-220 (continued)

I_C Cont Amps Max	$V_{CEO(sus)}$ Volts Min	Device Type NPN	Device Type PNP	h_{FE} Min/Max	@ I_C Amp	Resistive Switching t_s µs Max	Resistive Switching t_f µs Max	Resistive Switching @ I_C Amp	f_T MHz Min	P_D (Case) Watts @ 25°C
2	400	**BUL44★**		14/36	0.4	2**	0.2**	1	12 typ	40
	450	**BUX85**		30	0.1	3.5	1.4	1	4	50
		MJE18002★		14/36	0.2	3**	0.17**	1	12 typ	40
	900	**MJE1320**		3 min	1	4 typ	0.8 typ	1		80
2.5	700	**MJE8500**		7.5 min	0.5	4	2	1		65
	750	**MJE12007** Ⓒ		1.1 min	2		1	2	4 typ	65
	800	**MJE8501**		7.5 min	0.5	4	2	1		65
3	60	BD241A	BD242A	25 min	1				3	40
		TIP31A	TIP32A	25 min	1	0.6 typ	0.3 typ	1	3	40
	80	**BD241B**	**BD242B**	25 min	1				3	40
		TIP31B	**TIP32B**	25 min	1	0.6 typ	0.3 typ	1	3	40
	100	**BD241C**	**BD242C**	25 min	1				3	40
		TIP31C Ⓒ	**TIP32C** Ⓒ	25 min	1	0.6 typ	0.3 typ	1	3	40
4	60	**BD535**	**BD536**	25 min	2	0.5 Typ	0.05 Typ		3	50
		MJE800T##	**MJE700T##**	750 min	1.5				1#	40
	80	**D44C12★**	**D45C12★**	40/120	0.2			1	40 typ	30
	300	MJE13004		6/30	3	3	0.7	3	4	60
	400	**MJE13005**		6/30	3	3	0.7	3	4	60
5	60	TIP120##	TIP125##	1k min	3	1.5 typ	1.5 typ	3	4#	65
	80	**TIP121##**	**TIP126##**	1k min	3	1.5 typ	1.5 typ	3	4#	65
	100	**TIP122##** Ⓒ	**TIP127##** Ⓒ	1k min	3	1.5 typ	1.5 typ	4	4#	75
	250	**2N6497**		10/75	2.5	1.8	0.8	2.5	5	80
	300	**2N6498**		10/75	2.5	1.8	0.8	2.5	5	80
	400	**BUL45★**		16/40	1	1.7**	0.12**	1	12 typ	100
	450	**MJE16002**		5 min	5	3	0.3	3		80
		MJE16004		7 min	5	2.7	0.35	3		80
		MJE18004		10 min	2	3	0.5	2.5	12	100
	700	**MJE8502**		7.5 min	1	4	2	2.5		80
	800	**MJE8503**		7.5 min	1	4	2	2.5		80
6	60	BD243A	BD244A	15 min	3				3	65
		TIP41A	TIP42A	15/75	3	0.4 typ	0.15 typ	3	3	65
	80	**BD243B**	**BD244B**	15 min	3				3	65
		TIP41B	**TIP42B**	15/75	3	0.4 typ	0.15 typ	3	3	65
	100	**BD243C**	**BD244C**	15 min	3				3	65
		TIP41C	**TIP42C**	15/75	3	0.4 typ	0.15 typ	3	3	65
	400	**BUV46**		5 min	3.5	3	0.8	2.5	12	85
	550*	**MJE16204**		5 min	6	1.5**	0.15**	1	10	80

(continued)

$|h_{fe}|$ @ 1 MHz, ## Darlington

* $V_{(BR)CEV}$

** Switching tests performed w/special application simulator circuit. See data sheet for details.

★ New Product

Ⓒ Available as preferred chip

Device Numbers in **Bold** type are preferred

TABLE 3 – PLASTIC TO-220 (continued)

I_C Cont Amps Max	$V_{CEO(sus)}$ Volts Min	Device Type NPN	Device Type PNP	h_{FE} Min/Max	@ I_C Amp	Resistive Switching t_s µs Max	Resistive Switching t_f µs Max	Resistive Switching @ I_C Amp	f_T MHz Min	P_D (Case) Watts @ 25°C
7	30	2N6288	2N6111	30/150	3	0.4 typ	0.15 typ	3	4	40
	50		2N6109	30/150	2.5	0.4 typ	0.15 typ	3	4	40
	60	BD797	BD798	25 min	3				3	65
	70	**2N6292**	**2N6107**	30/150	2	0.4 typ	0.15 typ	3	4	40
	80	**BD799**	**BD800**	15 min	3				3	65
	100	**BD801**	**BD802**	15 min	3				3	65
	150	**BU407,D**		30 min	1.5		0.75	5	10	60
	200	**BU406,D**		30 min	1.5		0.75	5	10	60
	375	**BU522##**		250 min	2.5				7.5	75
	425	**BU522A##**		250 min	2.5				7.5	75
	450	**BU522B##**		250 min	2.5				7.5	75
8	60	2N6043##	2N6040##	1k/10k	4	1.5 typ	1.5 typ	3	4#	75
		BDX53A##	BDX54A##	750 min	3				4#	60
		BD897##	BD898##	750 min	3				1#	70
		BD897A##	BD898A##	750 min	4				1#	70
		TIP100##	TIP105##	1k/20k	3	1.5 typ	1.5 typ	3	4#	80
	80	**2N6044##**	**2N6041##**	1k/10k	4	1.5 typ	1.5 typ	3	4#	75
		BDX53B##	**BDX54B##**	750 min	3				4#	60
		BD899##	**BD900##**	750 min	3				1#	70
		BD899A##	**BD900A##**	750 min	4				1#	70
		TIP101##	**TIP106##**	1k/20k	3	1.5 typ	1.5 typ	3	4#	80
	100	**2N6045##**	**2N6042##**	1k/10k	3	1.5 typ	1.5 typ	3	4#	75
		BDX53C##	**BDX54C##**	750 min	3					
		BD901##	**BD902##**	750 min	3				1#	70
		TIP102##	**TIP107##**	1k/20k	3	1.5 typ	1.5 typ	3	4#	80
	120	**BDX53D##**	**BDX54D##**	750 min	3				4#	60
		MJE15028	**MJE15029**	20 min	4				30	50
	150	**MJE15030** [C]	**MJE15031** [C]	20 min	4				30	50
		BU807##		100 min	5	0.55 typ	0.2 typ	5		60
	200	**BU806##**		100 min	5	0.55 typ	0.2 typ	5		60

$|h_{fe}|$ @ 1 MHz, ## Darlington

(continued)

[C] Available as preferred chip

Device Numbers in **Bold** type are preferred

TABLE 3 – PLASTIC TO-220 (continued)

I_C Cont Amps Max	$V_{CEO(sus)}$ Volts Min	Device Type NPN	Device Type PNP	h_{FE} Min/Max	@ I_C Amp	Resistive Switching t_s µs Max	Resistive Switching t_f µs Max	Resistive Switching @ I_C Amp	f_T MHz Min	P_D (Case) Watts @ 25°C
8	300	MJE13006		5/30	5	3	0.7	5	4	80
		MJE5740##		200 min	4	8 typ	2 typ	6	4	80
			MJE5850	15 min	2	2	0.5	4		80
	350	**MJE5741##**		200 min	4	8 typ	2 typ	6		80
			MJE5851	15 min	2	2	0.5	4		80
	400	**BUL146**		14/36	2	4**	0.17**	4	12 typ	100
		MJE5742##		200 min	4	8 typ	2 typ	6		80
		MJE13007 C		5/30	5	3	0.7	5		80
			MJE5852 C	15 min	2	2	0.5	4		80
		MJE16106 ★		6/22	8	2 typ	0.1 typ	5		100
	450	**BUT56A**		10 min	2	3	0.5	2	12	100
		MJE18006 ★		14/36	1.5	1.5 typ**	0.1 typ**	3	12 typ	100
	550	**BUT47C**		8 min	2	4		4	12	100
10	**20**	**MJE5420Z##(1)**★		6k min	6					100
	60	**BDX33A##**	**BDX34A##**	750 min	4				3	70
		BD807	**BD808**	15 min	4				1.5	90
		D44H8	**D45H8**	40 min	4					50
		MJE3055T	**MJE2955T**	20/70	4					75
		2N6387##	**2N6667##**	1k/20k	5				20#	65
	80	**BDX33B##**	**BDX34B##**	750 min	3				3	70
		BD809	**BD810**	15 min	4				1.5	90
		D44E3##		1000 min	5	2 typ	0.5 typ	10		50
		2N6388##	**2N6668##**	1k/20k	5				20#	65
		D44H10	**D45H10**	20 min	4	0.5 typ	0.14 typ	5	50 typ	50
		D44H11 C	**D45H11** C	40 min	4	0.5 typ	0.14 typ	5	50 typ	50
	100	**BDX33C##**	**BDX34C##**	750 min	3				3	70
	400	**BUL147**		14/36	2	4**	0.17**	4	12 typ	125
	450	**MJE18008** ★		16/36	2	3 typ**	0.1 typ**	4	12 typ	125
12	300	MJE13008		6/30	8	3	0.7	8	4	100
	400	**MJE13009**		6/30	8	3	0.7	8	4	100
15	**60**	**2N6487**	**2N6490**	20/150	5	0.6 typ	0.3 typ	5	5	75
		BDW40##	**BDW45##**	1k min	5	1 typ	1.5 typ	5	4	85
	80	**2N6488**	**2N6491**	20/150	5	0.6 typ	0.3 typ	5	5	75
		BDW41##	**BDW46##**	1k min	5	1 typ	1.5 typ	5	4	85
		D44VH10	**D45VH10**	20 min	4	0.5	0.09	8	50 typ	83
	100	**BDW42##**	**BDW47##**	1k min	5	1 typ	1.5 typ	5	4	85

** Switching tests performed w/special application simulator circuit. See data sheet for details.

$|h_{fe}|$ @ 1 MHz, ## Darlington

★ New Product

(1) Self protected Darlington

C Available as preferred chip

Device Numbers in **Bold** type are preferred