

April '99

# Power Bipolar Transistors

SELECTION GUIDE



DEVICE TYPE		$V_{CE0}$ (V)	$V_{CBO}$ $V_{CES}$ $V_{CEV}$ (V)	$I_C$ (A)	$P_{tot}$ (W)	PACKAGE	APPLICATIONS
NPN	PNP						
2N3055		60	100	15.0	115	TO-3	General Purpose
2N3439		350	450	1.0	10	TO-39	Switching
2N3440		250	300	1.0	10	TO-39	Switching
2N3771		40	50	30.0	150	TO-3	General Purpose
2N3772		60	80	20.0	150	TO-3	General Purpose
2N4923		80	80	1.0	30	SOT-32	General Purpose
2N5038		90	150	20.0	140	TO-3	Switching
	2N5153	80	100	5.0	10	TO-39	Switching
2N5154		80	100	5.0	10	TO-39	Switching
2N5191		60	60	4.0	40	SOT-32	Switching
2N5192		80	80	4.0	40	SOT-32	Switching
	2N5195	80	80	4.0	40	SOT-32	Switching
2N5339		100	100	5.0	6	TO-39	Switching
	2N5415	200	200	1.0	10	TO-39	Switching
	2N5416	300	350	1.0	10	TO-39	Switching
2N5657		350	375	0.5	20	SOT-32	General Purpose
	2N5680	120	120	1.0	10	TO-39	Switching
2N5681		100	100	1.0	10	TO-39	Switching
2N5682		120	120	1.0	10	TO-39	Switching
	2N5884	80	80	25.0	200	TO-3	General Purpose
2N5886		80	80	25.0	200	TO-3	General Purpose
	2N6036	80	80	4.0	40	SOT-32	General Purpose
2N6039		80	80	4.0	40	SOT-32	General Purpose
	2N6050	60	60	12.0	150	TO-3	General Purpose
2N6059		100	100	12.0	150	TO-3	General Purpose
	2N6107	70	80	7.0	40	TO-220	General Purpose
	2N6111	30	40	7.0	40	TO-220	General Purpose
2N6284		100	100	20.0	160	TO-3	General Purpose
	2N6287	100	100	20.0	160	TO-3	General Purpose
2N6388		80	80	10.0	65	TO-220	General Purpose
2N6487		70	70	15.0	75	TO-220	General Purpose
2N6488		90	90	15.0	75	TO-220	General Purpose
	2N6490	70	70	15.0	75	TO-220	General Purpose
2N6547		400	850	15.0	175	TO-3	Switching
2N6577		90	90	15.0	120	TO-3	General Purpose
	2N6668	80	80	10.0	65	TO-220	General Purpose
BD135		45	45	1.5	12.5	SOT-32	General Purpose
	BD136	45	45	1.5	12.5	SOT-32	General Purpose
	BD138	60	60	1.5	12.5	SOT-32	General Purpose
BD139		80	80	1.5	12.5	SOT-32	General Purpose
BD139-10		80	80	1.5	12.5	SOT-32	General Purpose
	BD140	80	80	1.5	12.5	SOT-32	General Purpose
	BD140-10	80	80	1.5	12.5	SOT-32	General Purpose
BD179		80	80	3.0	30	SOT-32	General Purpose
	BD234	45	45	2.0	25	SOT-32	General Purpose
BD235		60	60	2.0	25	SOT-32	General Purpose
	BD236	60	60	2.0	25	SOT-32	General Purpose
BD237		80	100	2.0	25	SOT-32	General Purpose
	BD238	80	100	2.0	25	SOT-32	General Purpose
BD239C		100	115	2.0	30	TO-220	General Purpose
BD241A		60	70	3.0	40	TO-220	General Purpose
BD241B		80	90	3.0	40	TO-220	General Purpose
BD241BFP		80	90	13.0	24	TO-220FP	General Purpose
BD241C		100	115	3.0	40	TO-220	General Purpose
	BD242A	60	70	3.0	40	TO-220	General Purpose
	BD242B	80	90	3.0	40	TO-220	General Purpose
	BD242BFP	80	90	13.0	24	TO-220FP	General Purpose
	BD242C	100	115	3.0	40	TO-220	General Purpose
BD243B		80	80	6.0	65	TO-220	General Purpose
BD243C		100	100	6.0	65	TO-220	General Purpose
	BD244B	80	80	6.0	65	TO-220	General Purpose
	BD244C	100	100	6.0	65	TO-220	General Purpose
	BD336	100	100	6.0	60	SOT-82	General Purpose
BD433		22	22	4.0	36	SOT-32	General Purpose
	BD434	22	22	4.0	36	SOT-32	General Purpose

ST preferred products in bold, shaded areas indicate Darlington

DEVICE TYPE		V <sub>CEO</sub> (V)	V <sub>CB0</sub> V <sub>CE5</sub> V <sub>CEV</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	APPLICATIONS
NPN	PNP						
BD435		32	32	4.0	36	SOT-32	General Purpose
	BD436	32	32	4.0	36	SOT-32	General Purpose
BD437		45	45	4.0	36	SOT-32	General Purpose
	BD438	45	45	4.0	36	SOT-32	General Purpose
BD439		60	60	4.0	36	SOT-32	General Purpose
	BD440	60	60	4.0	36	SOT-32	General Purpose
BD441		80	80	4.0	36	SOT-32	General Purpose
	BD442	80	80	4.0	36	SOT-32	General Purpose
BD533		45	45	8.0	50	TO-220	General Purpose
BD533FP		45	45	8.0	25	TO-220FP	General Purpose
	BD534	45	45	8.0	50	TO-220	General Purpose
	BD534FP	45	45	8.0	25	TO-220FP	General Purpose
BD535		60	60	8.0	50	TO-220	General Purpose
	BD536	60	60	8.0	50	TO-220	General Purpose
BD537		80	80	8.0	50	TO-220	General Purpose
	BD538	80	80	8.0	50	TO-220	General Purpose
BD677		60	60	4.0	40	SOT-32	General Purpose
BD677A		60	60	4.0	40	SOT-32	General Purpose
	BD678	60	60	4.0	40	SOT-32	General Purpose
	BD678A	60	60	4.0	40	SOT-32	General Purpose
BD679		80	80	4.0	40	SOT-32	General Purpose
BD679A		80	80	4.0	40	SOT-32	General Purpose
	BD680	80	80	4.0	40	SOT-32	General Purpose
	BD680A	80	80	4.0	40	SOT-32	General Purpose
BD681		100	100	4.0	40	SOT-32	General Purpose
	BD682	100	100	4.0	40	SOT-32	General Purpose
BD707		60	60	12.0	75	TO-220	General Purpose
	BD708	60	60	12.0	75	TO-220	General Purpose
BD709		80	80	12.0	75	TO-220	General Purpose
BD711		100	100	12.0	75	TO-220	General Purpose
	BD712	100	100	12.0	75	TO-220	General Purpose
BD909		80	80	15.0	90	TO-220	General Purpose
	BD910	80	80	15.0	90	TO-220	General Purpose
BD911		100	100	15.0	90	TO-220	General Purpose
	BD912	100	100	15.0	90	TO-220	General Purpose
BDW83C		100	100	15.0	130	TO-218	General Purpose
	BDW84C	100	100	15.0	130	TO-218	General Purpose
BDW93C		100	100	12.0	80	TO-220	General Purpose
BDW93CFP		100	100	12.0	33	TO-220FP	General Purpose
	BDW94B	80	80	12.0	80	TO-220	General Purpose
	BDW94C	100	100	12.0	80	TO-220	General Purpose
	BDW94CFP	100	100	12.0	33	TO-220FP	General Purpose
BDX33B		80	80	10.0	70	TO-220	General Purpose
BDX33C		100	100	10.0	70	TO-220	General Purpose
	BDX34B	80	80	10.0	70	TO-220	General Purpose
	BDX34C	100	100	10.0	70	TO-220	General Purpose
BDX53B		80	80	8.0	60	TO-220	General Purpose
BDX53BFP		80	80	8.0	29	TO-220FP	General Purpose
BDX53C		100	100	8.0	60	TO-220	General Purpose
BDX53F		160	160	8.0	60	TO-220	General Purpose
	BDX54B	80	80	8.0	60	TO-220	General Purpose
	BDX54C	100	100	8.0	60	TO-220	General Purpose
	BDX54F	160	160	8.0	60	TO-220	General Purpose
BDX87C		100	100	12.0	120	TO-3	General Purpose
BDY90		100	120	10.0	60	TO-3	Switching
BDY90P		80	100	10.0	60	TO-220	Switching
BFX34		60	120	5.0	5	TO-39	Switching
	BSS44	60	65	5.0	5	TO-39	Switching
BU208A		700	1500	8.0	150	TO-3	Colour TVs
BU208D		700	1500	8.0	150	TO-3	Colour TVs
BU326A		400	900	6.0	75	TO-3	Monochrome TVs
BU406		200	400	7.0	60	TO-220	Monochrome TVs
BU406D		200	400	7.0	60	TO-220	Monochrome TVs
BU407		150	330	7.0	60	TO-220	Monochrome TVs
BU407D		150	330	7.0	60	TO-220	Monochrome TVs
BU426A		400	900	6.0	114	TO-218	Monochrome TVs
BU505		700	1500	2.5	75	TO-220	Colour TVs / Lighting

DEVICE TYPE		V <sub>CEO</sub> (V)	V <sub>CB0</sub> V <sub>CE0</sub> V <sub>CEV</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	APPLICATIONS
NPN	PNP						
BU508A		700	1500	8.0	125	TO-218	Colour TVs
BU508AFI		700	1500	8.0	50	ISOWATT218	Colour TVs
BU508DFI		700	1500	8.0	50	ISOWATT218	Colour TVs
BU806		200	400	8.0	60	TO-220	Monochrome TVs
BU807		150	330	8.0	60	TO-220	Monochrome TVs
BU808DFI		700	1400	8.0	52	ISOWATT218	Colour TVs
BU810		400	600	7.0	75	TO-220	Switching
BU911		400	450	6.0	60	TO-220	Electronic Ignition
BU931		400	500	15.0	175	TO-3	Electronic Ignition
BU931P		400	500	15.0	135	TO-218	Electronic Ignition
BU931T		400	500	10.0	125	TO-220	Electronic Ignition
BU941		400	500	15.0	180	TO-3	Electronic Ignition
BU941P		400	500	15.0	155	TO-218	Electronic Ignition
BU941PFI		400	500	15.0	65	ISOWATT218	Electronic Ignition
BU941Z		350	350	15.0	180	TO-3	Electronic Ignition
BU941ZP		350	350	15.0	155	TO-218	Electronic Ignition
BU941ZPFI		350	350	15.0	65	ISOWATT218	Electronic Ignition
BU941ZT		350	350	15.0	150	TO-220	Electronic Ignition
BU941ZTFP		350	350	15.0	46	TO-220FP	Electronic Ignition
BUB931T		400	500	10.0	125	D <sup>2</sup> PAK	Electronic Ignition
BUB941ZT		350	350	15.0	150	D <sup>2</sup> PAK	Electronic Ignition
BUF405A		450	1000	7.5	80	TO-220	S.M.P.S.
BUF405AFP		450	1000	7.5	39	TO-220FP	S.M.P.S.
BUF410		450	850	15.0	125	TO-218	S.M.P.S.
BUF410A		450	1000	15.0	125	TO-218	S.M.P.S.
BUF420		450	850	30.0	200	TO-218	S.M.P.S.
BUF420A		450	1000	30.0	200	TO-218	S.M.P.S. / Industrial
BUF420AI		450	1000	30.0	115	TO3P-I	S.M.P.S. / Industrial
BUF420M		450	850	30.0	200	TO-3	S.M.P.S. / Industrial
BUF460AV		450	1000	80.0	270	ISOTOP	Industrial
BUH2M20AP		1200	2000	0.03	40	TO-220	Colour TVs
BUH315		700	1500	6.0	44	ISOWATT218	Colour TVs
BUH315D		700	1500	6.0	44	ISOWATT218	Colour TVs
BUH515		700	1500	8.0	50	ISOWATT218	Colour TVs
BUH515D		700	1500	8.0	50	ISOWATT218	Colour TVs
BUH515FP		700	1500	8.0	38	TO-220FP	Colour TVs
BUH615D		700	1500	8.0	55	ISOWATT218	Colour TVs
BUH1015		700	1500	14.0	160	TO-218	Colour TVs & Monitors
BUH1015HI		700	1500	14.0	70	ISOWATT218	Colour TVs & Monitors
BUH1215		700	1500	16.0	200	TO-218	Colour TVs & Monitors
BUL38D		450	800	5.0	80	TO-220	Lighting / S.M.P.S.
BUL39D		450	850	5.0	70	TO-220	Lighting / S.M.P.S.
BUL49D		450	850	5.0	80	TO-220	Lighting / S.M.P.S.
BUL57		400	700	8.0	85	TO-220	Lighting / S.M.P.S.
BUL57FP		400	700	8.0	35	TO-220FP	Lighting / S.M.P.S.
BUL58D		450	800	8.0	85	TO-220	Lighting / S.M.P.S.
BUL59		400	850	8.0	90	TO-220	Lighting / S.M.P.S.
BUL67		400	700	10.0	100	TO-220	Lighting / S.M.P.S.
BUL87		400	700	12.0	110	TO-220	Lighting / S.M.P.S.
BUL118		400	700	3.0	60	TO-220	Lighting / S.M.P.S.
BUL128		400	700	4.0	70	TO-220	Lighting / S.M.P.S.
BUL128D-B		400	700	4.0	70	TO-220	Lighting / S.M.P.S.
BUL128FP		400	700	4.0	31	TO-220FP	Lighting / S.M.P.S.
BUL138		400	800	5.0	80	TO-220	Lighting / S.M.P.S.
BUL213		600	1300	3.0	60	TO-220	Lighting / S.M.P.S.
BUL216		800	1600	4.0	90	TO-220	Lighting / S.M.P.S.
BUL310		500	1000	5.0	75	TO-220	Lighting / S.M.P.S.
BUL310FP		500	1000	5.0	36	TO-220FP	Lighting / S.M.P.S.
BUL381		400	800	5.0	70	TO-220	Lighting / S.M.P.S.
BUL381D		400	800	5.0	70	TO-220	Lighting / S.M.P.S.
BUL382		400	800	5.0	70	TO-220	Lighting / S.M.P.S.
BUL382D		400	800	5.0	70	TO-220	Lighting / S.M.P.S.
BUL416		800	1600	6.0	110	TO-220	Lighting / S.M.P.S.
BUL510		450	1000	10.0	100	TO-220	Lighting / S.M.P.S.
BUL810		450	1000	15.0	125	TO-218	Lighting / S.M.P.S.
BUL903ED		400	900	5.0	70	TO-220	Lighting
BUL1403ED		650	1400	3.0	80	TO-220	Lighting

DEVICE	TYPE		V <sub>CEO</sub> (V)	V <sub>CB0</sub> V <sub>CES</sub> V <sub>CEV</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	APPLICATIONS
	NPN	PNP						
BULD118D-1			400	700	2.0	20	IPAK	Lighting
BULK38D			450	800	5.0	60	SOT-82	Lighting / S.M.P.S.
BULK128D			400	700	4.0	55	SOT-82	Lighting / S.M.P.S.
BULK128D-B			400	700	4.0	55	SOT-82	Lighting / S.M.P.S.
BULT118			400	700	2.0	45	SOT-32	Lighting / S.M.P.S.
BULT118D			400	700	2.0	45	SOT-32	Lighting / S.M.P.S.
BUR50S			125	200	70.0	350	TO-3	Switching
BUR51			200	300	60.0	350	TO-3	Switching
BUR52			250	350	60.0	350	TO-3	Switching
BUT11A			450	1000	5.0	83	TO-220	S.M.P.S.
BUT30V			125	200	100.0	250	ISOTOP	Industrial
BUT32V			300	400	80.0	250	ISOTOP	Industrial
BUT70			125	200	40.0	200	TO-218	Switching
BUT90			125	200	50.0	250	TO-3	Switching
BUT92			250	350	50.0	250	TO-3	Switching
BUT100			125	200	50.0	300	TO-3	Switching
BUT232V			300	400	140.0	300	ISOTOP	Industrial
BUTW92			250	500	60.0	180	TO-247	Switching
BUV20			125	160	50.0	250	TO-3	Switching
BUV21			200	250	40.0	250	TO-3	Switching
BUV26			90	180	14.0	85	TO-220	Switching
BUV27			120	240	12.0	85	TO-220	Switching
BUV28			200	400	12.0	85	TO-220	Switching
BUV46			400	850	5.0	70	TO-220	Switching
BUV46A			450	1000	5.0	70	TO-220	Switching
BUV48A			450	1000	15.0	125	TO-218	Switching
BUV48AFI			450	1000	15.0	55	ISOWATT218	Switching
BUV48B			600	1200	15.0	125	TO-218	Switching
BUV48C			700	1200	15.0	125	TO-218	Switching
BUV48CFI			700	1200	15.0	55	ISOWATT218	Switching
BUV48FI			400	850	15.0	55	ISOWATT218	Switching
BUV50			125	250	25.0	150	TO-3	Switching
BUV61			200	300	50.0	250	TO-3	Switching
BUV98AV			450	1000	30.0	150	ISOTOP	Industrial
BUV98V			450	1000	30.0	150	ISOTOP	Industrial
BUV298AV			450	1000	50.0	250	ISOTOP	Industrial
BUV298V			450	850	60.0	250	ISOTOP	Industrial
BUW48			60	120	30.0	150	TO-218	Switching
BUW49			80	160	30.0	150	TO-218	Switching
BUW50			125	250	25.0	150	TO-218	Switching
BUW89			90	160	25.0	125	TO-218	Switching
BUW90			125	250	20.0	125	TO-218	Switching
BUX10			125	160	25.0	150	TO-3	Switching
BUX22			250	300	40.0	350	TO-3	Switching
BUX48			400	850	15.0	175	TO-3	Switching
BUX48A			450	1000	15.0	175	TO-3	Switching
BUX48C			700	1200	15.0	175	TO-3	Switching
BUX80			400	800	10.0	100	TO-3	Switching
BUX87			450	1000	0.5	40	SOT-32	S.M.P.S.
BUX98			400	850	30.0	250	TO-3	Switching
BUX98A			450	1000	30.0	250	TO-3	Switching
BUX98AP			450	1000	24.0	200	TO-218	Switching
BUX98C			700	1200	30.0	250	TO-3	Switching
BUX98PI			450	850	30.0	115	TOP3-I	Switching
BUX348			450	850	45.0	300	TO-3	Switching
BUXD87-1			450	1000	0.5	20	IPAK	S.M.P.S.
BUY49S			200	250	3.0	10	TO-39	Switching
BUY69A			400	1000	10.0	100	TO-3	Switching
D44H8			60	60	10.0	50	TO-220	General Purpose
D44H11			80	80	10.0	50	TO-220	General Purpose
		D45H5	45	45	10.0	50	TO-220	General Purpose
		D45H8	60	60	10.0	50	TO-220	General Purpose
		D45H11	80	80	10.0	50	TO-220	General Purpose
ESM2012DV			120	150	120.0	175	ISOTOP	Industrial
ESM2030DV			300	400	67.0	150	ISOTOP	Industrial
ESM3030DV			300	400	100.0	225	ISOTOP	Industrial
ESM3045DV			450	600	24.0	125	ISOTOP	Industrial



DEVICE	TYPE	V <sub>CEO</sub>	V <sub>CBO</sub> V <sub>CES</sub> V <sub>CEV</sub>	I <sub>C</sub>	P <sub>tot</sub>	PACKAGE	APPLICATIONS
	NPN						
		(V)	(V)	(A)	(W)		
ESM4045DV		450	600	42.0	150	ISOTOP	Industrial
ESM5045DV		450	600	60.0	175	ISOTOP	Industrial
ESM6045AV		450	1000	72.0	250	ISOTOP	Industrial
ESM6045DV		450	600	84.0	250	ISOTOP	Industrial
MJ802		90	100	30.0	200	TO-3	General Purpose
	MJ2501	80	80	10.0	150	TO-3	General Purpose
	MJ2955	60	100	15.0	115	TO-3	General Purpose
MJ3001		80	80	10.0	150	TO-3	General Purpose
	MJ4032	100	100	16.0	150	TO-3	General Purpose
MJ4035		100	100	16.0	150	TO-3	General Purpose
	MJ4502	90	100	30.0	200	TO-3	General Purpose
	MJ11013	90	90	30.0	200	TO-3	General Purpose
MJ11014		90	90	30.0	200	TO-3	General Purpose
	MJ11015	120	120	30.0	200	TO-3	General Purpose
MJ11016		120	120	30.0	200	TO-3	General Purpose
MJD31BT4		80	80	3.0	15	DPAK	General Purpose
MJD31CT4		100	100	3.0	15	DPAK	General Purpose
	MJD32BT4	80	80	3.0	15	DPAK	General Purpose
	MJD32CT4	100	100	3.0	15	DPAK	General Purpose
MJD44H11T4		80	80	10.0	20	DPAK	General Purpose
	MJD45H11T4	80	80	10.0	20	DPAK	General Purpose
MJD47T4		250	350	1.0	15	DPAK	Switching
MJD50T4		400	500	1.0	15	DPAK	Switching
MJD112T4		100	100	2.0	20	DPAK	General Purpose
	MJD117T4	100	100	2.0	20	DPAK	General Purpose
MJD122T4		100	100	5.0	20	DPAK	General Purpose
	MJD127T4	100	100	5.0	20	DPAK	General Purpose
MJD340T4		300	300	0.5	15	DPAK	General Purpose
	MJD350T4	300	300	0.5	15	DPAK	General Purpose
	MJD2955T4	60	70	10.0	20	DPAK	General Purpose
MJD3055T4		60	70	10.0	20	DPAK	General Purpose
	MJE172	80	100	3.0	12.5	SOT-32	General Purpose
MJE182		80	100	3.0	12.5	SOT-32	General Purpose
	MJE210	25	40	5.0	15	SOT-32	General Purpose
MJE340		300	300	0.5	20	SOT-32	Switching
	MJE350	300	300	0.5	20	SOT-32	Switching
MJE521		40	40	4.0	40	SOT-32	General Purpose
MJE802		80	80	4.0	40	SOT-32	General Purpose
	MJE2955T	60	70	10.0	75	TO-220	General Purpose
MJE3055T		60	70	10.0	75	TO-220	General Purpose
MJE3440		250	350	0.3	15	SOT-32	Switching
	MJE5852	400	450	8.0	80	TO-220	Switching
MJE13005		400	700	4.0	75	TO-220	Switching
MJE13007		400	700	8.0	80	TO-220	Switching
MJE13007A		400	850	8.0	80	TO-220	Switching
MJE13009		400	700	12.0	100	TO-220	Switching
S2000AFI		700	1500	8.0	50	ISOWATT218	Colour TVs & Monitors
SGSD100		80	80	25.0	130	TO-218	General Purpose
	SGSD200	80	80	25.0	130	TO-218	General Purpose
SGSF313		450	1000	5.0	70	TO-220	S.M.P.S.
SGSF324		600	1200	4.0	70	TO-220	S.M.P.S.
SGSF344		600	1200	7.0	85	TO-220	S.M.P.S.
SGSIF461		400	850	15.0	55	ISOWATT218	S.M.P.S.
ST901T		350	500	4.0	30	TO-220	Electronic Ignition
ST9312T		350	350	10.0	125	TO-220	Electronic Ignition
ST13003		400	700	1.5	40	SOT-32	Lighting / S.M.P.S.
ST13005		400	700	4.0	75	TO-220	Lighting / S.M.P.S.
ST13007		400	700	8.0	80	TO-220	Lighting / S.M.P.S.
ST13007FP		400	700	8.0	36	TO-220FP	Lighting / S.M.P.S.
ST13007N		400	700	8.0	80	TO-220	Lighting / S.M.P.S.
ST1802HI		600	1500	7.0	54	ISOWATT218	Colour TVs & Monitors
ST1803DHI		600	1500	7.0	54	ISOWATT218	Colour TVs
ST2001HI		600	1500	7.0	55	ISOWATT218	Colour TVs & Monitors
STB13005-1		400	700	4.0	75	IPAK	Lighting / S.M.P.S.
STBV32		400	700	1.5	1.1	TO-92	Lighting
STBV42		400	500	1.0	1	TO-92	Lighting
STD616A-1		450	1000	1.6	20	IPAK	S.M.P.S.
STPSA42		300	500	0.5	0.625	TO-92	Lighting
THD200FI		700	1500	10.0	57	ISOWATT218	Colour TVs & Monitors

DEVICE NPN	TYPE PNP	V <sub>CEO</sub> (V)	V <sub>CB0</sub> V <sub>CES</sub> V <sub>CEV</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	APPLICATIONS
<b>THD215HI</b>		700	1500	10.0	57	ISOWATT218	Colour TVs & Monitors
<b>THD218DHI</b>		700	1500	7.0	50	ISOWATT218	Colour TVs
<b>THD277HI</b>		700	1500	8.0	50	ISOWATT218	Colour TVs & Monitors
<b>TIP29A</b>		60	60	1.0	30	TO-220	General Purpose
<b>TIP29C</b>		100	100	1.0	30	TO-220	General Purpose
	<b>TIP30A</b>	60	60	1.0	30	TO-220	General Purpose
	<b>TIP30C</b>	100	100	1.0	30	TO-220	General Purpose
<b>TIP31A</b>		60	60	3.0	40	TO-220	General Purpose
<b>TIP31C</b>		100	100	3.0	40	TO-220	General Purpose
	<b>TIP32A</b>	60	60	3.0	40	TO-220	General Purpose
	<b>TIP32B</b>	80	80	3.0	40	TO-220	General Purpose
	<b>TIP32C</b>	100	100	3.0	40	TO-220	General Purpose
<b>TIP33A</b>		60	100	10.0	80	TO-218	General Purpose
<b>TIP33C</b>		100	140	10.0	80	TO-218	General Purpose
	<b>TIP34C</b>	100	140	10.0	80	TO-218	General Purpose
<b>TIP35C</b>		100	100	25.0	125	TO-218	General Purpose
	<b>TIP36B</b>	80	80	25.0	125	TO-218	General Purpose
	<b>TIP36C</b>	100	100	25.0	125	TO-218	General Purpose
<b>TIP41A</b>		60	60	6.0	65	TO-220	General Purpose
<b>TIP41B</b>		80	80	6.0	65	TO-220	General Purpose
<b>TIP41C</b>		100	100	6.0	65	TO-220	General Purpose
	<b>TIP42A</b>	60	60	6.0	65	TO-220	General Purpose
	<b>TIP42C</b>	100	100	6.0	65	TO-220	General Purpose
<b>TIP47</b>		250	350	1.0	40	TO-220	Switching
<b>TIP48</b>		300	400	1.0	40	TO-220	Switching
<b>TIP49</b>		350	450	1.0	40	TO-220	Switching
<b>TIP50</b>		400	500	1.0	40	TO-220	Switching
<b>TIP102</b>		100	100	8.0	80	TO-220	General Purpose
	<b>TIP105</b>	60	60	8.0	80	TO-220	General Purpose
	<b>TIP107</b>	100	100	8.0	80	TO-220	General Purpose
<b>TIP110</b>		60	60	2.0	50	TO-220	General Purpose
<b>TIP112</b>		100	100	2.0	50	TO-220	General Purpose
	<b>TIP115</b>	60	60	2.0	50	TO-220	General Purpose
	<b>TIP117</b>	100	100	2.0	50	TO-220	General Purpose
<b>TIP120</b>		60	60	5.0	65	TO-220	General Purpose
<b>TIP121</b>		80	80	5.0	65	TO-220	General Purpose
<b>TIP122</b>		100	100	5.0	65	TO-220	General Purpose
<b>TIP122FP</b>		100	100	5.0	29	TO-220FP	General Purpose
	<b>TIP125</b>	60	60	5.0	65	TO-220	General Purpose
	<b>TIP126</b>	80	80	5.0	65	TO-220	General Purpose
	<b>TIP127</b>	100	100	5.0	65	TO-220	General Purpose
	<b>TIP127FP</b>	100	100	5.0	29	TO-220FP	General Purpose
<b>TIP132</b>		100	100	8.0	70	TO-220	General Purpose
	<b>TIP135</b>	60	60	8.0	70	TO-220	General Purpose
	<b>TIP137</b>	100	100	8.0	70	TO-220	General Purpose
<b>TIP140</b>		60	60	10.0	125	TO-218	General Purpose
<b>TIP141</b>		80	80	10.0	125	TO-218	General Purpose
<b>TIP142</b>		100	100	10.0	125	TO-218	General Purpose
<b>TIP142T</b>		100	100	10.0	90	TO-220	General Purpose
	<b>TIP145</b>	60	60	10.0	125	TO-218	General Purpose
	<b>TIP146</b>	80	80	10.0	125	TO-218	General Purpose
	<b>TIP147</b>	100	100	10.0	125	TO-218	General Purpose
	<b>TIP147T</b>	100	100	10.0	90	TO-220	General Purpose
	<b>TIP2955</b>	60	70	15.0	90	TO-218	General Purpose
<b>TIP3055</b>		60	70	15.0	90	TO-218	General Purpose

ST preferred products in bold, shaded areas indicate Darlington's  
ISOTOP and ISOWATT218 are STMicroelectronics trademarks

# Electronic Ballast Design-in Guidelines

DEVICE	V <sub>CEO</sub> (V)	V <sub>CES</sub> V <sub>CEV</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	TYPICAL APPLICATION (220V mains)		
						Compact Fluorescent Lamps	Industrial Lamp Ballasts push pull    half bridge	Halogen Lamps Transformer
STPSA42	300	500	0.5	0.625	TO-92	up to 9 W		
STBV42	400	500	1	1	TO-92	up to 11 W		
STBV32	400	700	1.5	1.1	TO-92	up to 13 W		
ST13003	400	700	1.5	40	SOT-32	up to 13 W		
BULT118	400	700	2	45	SOT-32	up to 17 W		up to 20 W
BULD118D-1	400	700	2	20	IPAK	up to 17 W		up to 20 W
BULK128D-B	400	700	4	55	SOT-82	up to 23 W		up to 40 W
STB13005-1	400	700	4	75	i <sup>2</sup> PAK	up to 23 W		up to 30 W
BUL118	400	700	3	60	TO-220	up to 20 W		up to 20 W
BUL128	400	700	4	70	TO-220	up to 23 W		up to 40 W
BUL128D-B	400	700	4	70	TO-220	up to 23 W		up to 40 W
ST13005	400	700	4	75	TO-220	up to 23 W		up to 40 W
ST13007	400	700	8	80	TO-220		up to 140 W *	up to 140 W
BUL57	400	700	8	85	TO-220		up to 140 W *	up to 140 W
BUL67	400	700	10	100	TO-220			up to 150 W
BUL87	400	700	12	110	TO-220			up to 200 W
BUL382D	400	800	5	70	TO-220	> 23 W	up to 80 W *	up to 80 W
BUL381D	400	800	5	70	TO-220	> 23 W	up to 80 W *	up to 80 W
BUL138	400	800	5	80	TO-220		up to 80 W *	up to 80 W
BUL59	400	850	8	90	TO-220			up to 105 W
BUL903ED <sup>Δ</sup>	400	900	5	70	TO-220		up to 130 W *	
BUL38D	450	800	5	80	TO-220			up to 75 W
BUL58D	450	800	8	85	TO-220			up to 105 W
BUL39D	450	850	5	70	TO-220			up to 50 W
BUL49D	450	850	5	80	TO-220			up to 75 W
BUL510	450	1000	10	100	TO-220			up to 150 W
BUL310	500	1000	5	75	TO-220			up to 120 W
BUL213	600	1300	3	60	TO-220		up to 90 W	up to 90 W <sup>□</sup>
BUL1403ED <sup>Δ</sup>	650	1400	3	80	TO-220		up to 130 W <sup>□</sup>	
BUL216	800	1600	4	90	TO-220		up to 130 W <sup>□</sup>	
BUL416	800	1600	6	110	TO-220		up to 200 W <sup>□</sup>	
BUL310FP	500	1000	5	36	TO-220FP			up to 120 W
BUL810	450	1000	15	125	TO-218			up to 300 W

Suffix D = Integrated free-wheeling diode; \* = 120V AC mains; <sup>□</sup> = 277V AC mains;

<sup>Δ</sup> = New devices with integrated antisaturation and protection network, specifically designed for Electronic Lamp Ballast

## Horizontal Deflection Design-in Guidelines

DEVICE	V <sub>CEO</sub> (V)	V <sub>CBO</sub> (V)	I <sub>C</sub> (A)	P <sub>tot</sub> (W)	PACKAGE	TYPICAL APPLICATIONS	
						Colour Television (screen size)	Monitor (size/type/frequency)
ST1802HI	600	1500	8	50	ISOWATT218	up to 25"	14" / SVGA / <50kHz
ST1803DHI	600	1500	8	50	ISOWATT218	up to 21"	
ST2001HI	600	1500	10	55	ISOWATT218	> 25"	15" / Multisync / <64kHz
BU808DFI	700	1400	8	52	ISOWATT218	up to 21"	
BUH315	700	1500	6	44	ISOWATT218	up to 17"	
BUH315D	700	1500	6	44	ISOWATT218	up to 17"	
THD218DHI	700	1500	7	50	ISOWATT218	up to 25"	
BU508AFI	700	1500	8	50	ISOWATT218	up to 25"	
BU508DFI	700	1500	8	50	ISOWATT218	up to 25"	
BUH515	700	1500	8	50	ISOWATT218	up to 25"	14" / SVGA / <50kHz
BUH515D	700	1500	8	50	ISOWATT218	up to 25"	
S2000AFI	700	1500	8	50	ISOWATT218	up to 25"	
THD277HI	700	1500	8	50	ISOWATT218	up to 25"	14" / SVGA / <50kHz
BUH615D	700	1500	8	55	ISOWATT218	up to 25"	
THD215HI	700	1500	10	57	ISOWATT218	> 25"	14" / Multisync / <64kHz
THD200FI	700	1500	10	57	ISOWATT218	> 25"	15" / Multisync / >64kHz
BUH1015HI	700	1500	14	70	ISOWATT218	> 25"	17" / Multisync / >64kHz
BUH1015	700	1500	14	160	TO-218	> 25"	17" / Multisync / >64kHz
BUH1215	700	1500	16	200	TO-218	> 25"	21" / Multisync / >64kHz
BUH2M20AP	1200	2000	0.03	40	TO-220	Dynamic focus	Dynamic focus

Suffix D, DFI or DHI = Integrated free-wheeling diode; ST preferred products in bold, shaded areas indicate Darlington