SGS-THOMSON MICROELECTRONICS

POWER BIPOLAR

HORIZONTAL DEFLECTION

Device	V_{CEO} (V)	V_{CBO} (V)	I_C (A)	P_{tot} (W)	Package	TYPICAL APPLICATION	
						Colour Television screen size	Monitor size/type/frequency
BU808DFI	700	1400	8.0	52	ISOWATT218	up to 21"	
BUH315	700	1500	6.0	44	ISOWATT218	up to 17"	
BUH315D	700	1500	6.0	44	ISOWATT218	up to 17"	
THD218DHI	700	1500	7.0	50	ISOWATT218	up to 25"	
BU508AFI	700	1500	8.0	50	ISOWATT218	up to 25"	
BU508DFI	700	1500	8.0	50	ISOWATT218	up to 25"	
BUH515	700	1500	8.0	50	ISOWATT218	up to 25"	14" / SVGA / <50 KHz
BUH515D	700	1500	8.0	50	ISOWATT218	up to 25"	
S2000AFI	700	1500	8.0	50	ISOWATT218	up to 25"	
THD277HI	700	1500	8.0	50	ISOWATT218	up to 25"	14" / SVGA / <50KHz
BUH615D	700	1500	8.0	55	ISOWATT218	up to 25"	
THD215HI	700	1500	8.0	57	ISOWATT218		14" / Multisync / <64KHz
THD200FI	700	1500	10.0	57	ISOWATT218	> 25"	15" / Multisync / >64KHz
BUH1015HI	700	1500	10.0	70	ISOWATT218	> 25"	17" / Multisync / >64KHz
BUH1015	700	1500	14.0	160	TO-218	> 25"	17" / Multisync / >64KHz
BUH1215	700	1500	16.0	200	TO-218		21" / Multisync / >64KHz
BUH2M20AP	1200	2000	0.03	40	TO-220	DYNAMIC FOCUS	DYNAMIC FOCUS

Suffix D or DFI or DHI = integrated free-wheeling diode

SWITCH MODE POWER SUPPLIES

Type	V_{CEO} (V)	V_{CBO} V_{CES} (V)	I_C (A)	P_{tot} (W)	Package	$V_{CE(sat)}$ @ I_C / I_B			Resistive Switching	
						(V)	(A)	(A)	ts typ (µs)	tf typ (µs)
SGSIF461	400	850	15	57	ISOWATT218	1.5	10	2.0	1.0	0.15
BUF410	450	850	15	125	SOT-93	0.5 #	10	2.0	1.9 ♦	0.06 ♦
BUF420	450	850	30	200	SOT-93	0.5 #	20	4.0	1.1 ♦	0.05 ♦
BUF420M	450	850	30	200	TO-3	0.5 #	20	4.0	1.0 ♦	0.05 ♦
BUX87	450	1000	0.5	40	SOT-32	1.0	0.2	0.02	4.5	0.5
SGSF313PI	450	1000	5	35	ISOWATT220	0.75	2.5	0.5	1.1	0.13
BUF405AFI	450	1000	7.5	40	ISOWATT220	0.5	5	1	1.8	0.1
BUF405A	450	1000	7.5	80	TO-220	0.5 #	5.0	1.0	0.8 ♦	0.05
BUF410A	450	1000	15	125	SOT-93	0.5 #	10	2.0	1.9 ♦	0.06 ♦
BUF420A	450	1000	30	200	SOT-93	0.5 #	20	4.0	1.0 ♦	0.05 ♦
BUL310PI	500	1000	5	35	ISOWATT220	1.1	3.0	0.6	1.2 ♦	0.08 ♦
SGSF324	600	1200	4	70	TO-220	1.5	1.75	0.35	1.0	0.5
SGSIF344	600	1200	7	40	ISOWATT220	1.5	3.5	0.7	1.0	0.2
SGSIF444	600	1200	7	50	ISOWATT218	1.5	3.5	0.7	1.5	0.2
SGSF344	600	1200	7	85	TO-220	1.5	3.5	0.7	1.0	0.2
BUH315	700	1500	6	44	ISOWATT218	1.5	3.0	0.75	1.6	0.11
THD277HI	700	1500	8	50	ISOWATT218	0.9	4.0	1.0	2.1	0.14

Type

♦ Induct. load

POWER BIPOLAR

SGS-THOMSON MICROELECTRONICS

ELECTRONIC LIGHTING

Device	V_{CEO} (V)	VCES V_{CEV} (V)	IC (A)	P_{tot} (W)	Package	TYPICAL APPLICATION			
						Compact fluorescent Lamps	Industrial Lamp Ballasts		Halogen Lamp Transformers
							push pull	half bridge	
BULD118-1	400	700	2	20	IPAK	up to 13W		up to 20W	
BULD118D-1	400	700	2	20	IPAK	up to 13W		up to 20W	
BULD128D-1	400	700	4	35	IPAK	up to 23W		up to 40W	up to 30W
ST13003	400	700	1.5	40	SOT-32	up to 9W			
BULT118	400	700	2	45	SOT-32	up to 13W		up to 20W	
BULT118D	400	700	2	45	SOT-32	up to 13W		up to 20W	
BULK128D	400	700	4	55	SOT-82	up to 23W		up to 40W	up to 30W
BULK380D	400	750	5	60	SOT-82	> 23W	up to 80W*	up to 80W	
BULK381D	400	750	5	60	SOT-82	> 23W	up to 80W*	up to 80W	
BULK38D	450	800	5	60	SOT-82				up to 50W
BUL128	400	700	4	70	TO-220	up to 23W		up to 40W	
BUL128D	400	700	4	70	TO-220	up to 23W		up to 40W	up to 30W
ST13005	400	700	4	75	TO-220	up to 23W		up to 40W	
BUL57	400	700	8	85	TO-220		up to 140W*	up to 140W	
ST13007	400	700	8	80	TO-220		up to 140W*	up to 140W	
BUL67	400	700	10	100	TO-220				up to 150W
BUL87	400	700	12	110	TO-220				up to 200W
BUL138	400	800	5	80	TO-220		up to 80W*	up to 80W	
BUL381	400	800	5	70	TO-220	> 23W	up to 80W*	up to 80W	
BUL381D	400	800	5	70	TO-220	> 23W	up to 80W*	up to 80W	
BUL382	400	800	5	70	TO-220	> 23W	up to 80W*	up to 80W	
BUL382D	400	800	5	70	TO-220	> 23W	up to 80W*	up to 80W	
BUL38D	450	800	5	80	TO-220				up to 75W
BUL58D	450	800	8	85	TO-220				up to 105W
BUL510	450	1000	10	100	TO-220				up to 150W
BUL310	500	1000	5	75	TO-220			up to 120W	
BUL213	600	1300	3	60	TO-220		up to 90W	up to 90W**	
BUL216	800	1600	4	90	TO-220		up to 130W**		
BUL416	800	1600	6	110	TO-220		up to 200W**		
BUL57PI	400	700	8	35	ISOWATT220		up to 140W*	up to 140W	
BUL310PI	500	1000	5	35	ISOWATT220			up to 120W	
BUL810	450	1000	15	125	TO-218				up to 300W

Suffix D = Integrated free-wheeling diode; * = 120V AC mains; ** = 277V AC mains

ELECTRONIC IGNITION

Type	V_{CEO} (V)	V_{CBO} V_{CES} (V)	$I_{C(cont)}$ (A)	P_{tot} (W)	Package	h_{FE} min @ I_C / V_{CE}			$V_{CE(sat)}$ @ I_C / I_B		
							(A)	(V)	(V)	(A)	(A)
ST931ZT	350	350 / 450	10	125	TO-220	300	5	10	1.8	8	0.10
BUB941ZT	350	350 / 500	15	150	D2PAK	300	5	10	1.8	10	0.25
BU941ZTFI	350	350 / 500	15	55	ISOWATT220	300	5	10	1.8	10	0.25
BU941ZPFI	350	350 / 500	15	65	ISOWATT218	300	5	10	1.8	10	0.25
BU941ZT	350	350 / 500	15	150	TO-220	300	5	10	1.8	10	0.25
BU941ZP	350	350 / 500	15	155	SOT-93	300	5	10	1.8	10	0.25
BU941Z	350	350 / 500	15	180	TO-3	300	5	10	1.8	10	0.25
ST901T	350	500	4	30	TO-220	500	4	2	1.3	2	0.02
BU911	400	450	6	60	TO-220	20	4	1.8	1.8	2.5	0.05
BU931PFI	400	500	15	60	ISOWATT218	300	5	10	1.8	8	0.1
BU931T	400	500	10	125	TO-220	300	5	10	1.8	8	0.1
BUB931T	400	500	10	125	D2PAK	300	5	10	1.8	8	0.1
BU931P	400	500	15	135	SOT-93	300	5	10	1.8	8	0.1
BU931	400	500	15	175	TO-3	300	5	10	1.8	8	0.1
BU941PFI	400	500	15	65	ISOWATT218	300	5	10	1.8	10	0.25
BU941T	400	500	15	150	TO-220	300	5	10	1.8	10	0.25
BUB941T	400	500	15	150	TO-220	300	5	10	1.8	10	0.25
BU941P	400	500	15	155	SOT-93	300	5	10	1.8	10	0.25
BU941	400	500	15	180	TO-3	300	5	10	1.8	10	0.25

SGS-THOMSON MICROELECTRONICS

POWER BIPOLAR

"FASTSWITCH" SERIES (Hollow Emitter, Easy - To - Drive)

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package NPN	$V_{CE(sat)}$ @ I_C / I_B			t_s	t_f
	(V)	(V)	(A)	(W)		(V)	(A)	(A)	(μs)	(μs)
SGSIF444	600	1200	7	50	ISOWATT218	1.5	3.50	0.70	3.5	0.30
SGSIF344	600	1200	7	40	ISOWATT220	1.5	3.50	0.70	3.5	0.30
SGSF344	600	1200	7	85	TO-220	1.5	3.50	0.70	3.5	0.30
SGSF324	600	1200	4	70	TO-220	1.5	1.75	0.35	4.5	0.35
BUF420M	450	850	30	200	TO-3	0.5	20.00	4.00	2.0	0.1
BUF460AV	450	1000	80	270	ISOTOP	2.0	60.00	12.00	2.0	0.10
BUF420A	450	1000	30	200	TO-218	0.5	20.00	4.00	2.0	0.10
BUF410A	450	1000	15	125	TO-218	0.5	10.00	2.00	1.8	0.10
BUF405A	450	1000	7.5	80	TO-220	0.5	5.00	1.00	1.8	0.10
BUF405AFI	450	1000	7.5	40	ISOWATT220	0.5	5.00	1	1.8	0.10
BUX87	450	1000	0.5	40	SOT-32	1.0	0.2	0.02	4.5	0.5
SGSF313PI	450	1000	5	35	ISOWATT220	0.75	2.5	0.5	1.1	0.13
BUL310PI	500	1000	5	35	ISOWATT220	1.1	3.0	0.6	1.2	0.08
BUF420	450	850	30	200	TO-218	0.5	20.00	2.00	2.0	0.10
BUF410	450	850	15	125	TO-218	0.5	10.00	2.00	1.8	0.10
SGSIF461	400	850	15	65	ISOWATT218	1.5	10.00	2.00	2.3	0.50

POWER BIPOLAR

SGS-THOMSON MICROELECTRONICS

SWITCHING TRANSISTORS AND DARLINGTONS

Internal schematic diagrams

Bipolar transistors

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	$V_{CE(sat)}$ @ I_C / I_B			t_s	t_f
	(V)	(V)	(A)	(W)		(V)	(A)	(A)	(μs)	(μs)
BU505	700	1500	2.5	75	TO-220	5	2	0.9	2	0.35
BUX98C	700	1200	30	250	TO-3	1.5	12	3.00	6.0	0.60
BUV48CFI	700	1200	15	55	ISOWATT218	1.5	6	1.50	6.0	0.60
BUV48C	700	1200	15	125	TO-218	1.5	6	1.50	6.0	0.60
BUX48C	700	1200	15	175	TO-3	1.5	6	1.50	6.0	0.60
BUV48B	600	1200	15	125	TO-218	3.0	10	4.00	3.0	0.70
BUTW92	250	500	60	180	TO-247	1	60	15	1.4	0.3
ESM6045AV	450	1000	72	250	ISOTOP	2.0	60	2.40	6.0	0.60
BUV298AV	450	1000	50	250	ISOTOP	1.2	32	6.40	4.5	0.40
BUX98A	450	1000	30	250	TO-3	1.5	16	3.20	4.5	0.40
BUV98AV	450	1000	30	150	ISOTOP	1.5	16	3.20	5.0	0.40
BUX98AP	450	1000	24	200	TO-218	1.2	16	3.20	4.5	0.40
BUX48A	450	1000	15	175	TO-3	1.5	10	2.00	5.0	0.40
BUV48A	450	1000	15	125	TO-218	1.5	10	2.00	5.0	0.40
BUV48AFI	450	1000	15	55	ISOWATT218	1.5	8	1.60	5.0	0.40
BUT12AFI	450	1000	8	50	ISOWATT220	1.5	5	1.00	-	-
BUV46A	450	1000	5	70	TO-220	1.5	2	0.40	3.0	0.80
BUT11A	450	1000	5	83	TO-220	1.5	2.5	0.50	4.0	0.80
BUX87	450	1000	0.5	40	SOT-32	1.0	0.2	0.02	4.5	0.35
BUY69A	400	1000	10	100	TO-3	3.3	8	2.50	1.7	0.30
BU426A	400	900	6	114	TO-218	1.5	2.5	0.5	-	-
BUV298V	450	850	60	250	ISOTOP	1.2	32	6.4	4.5	0.40
BUX348	450	850	45	300	TO-3	0.9	30	6.00	4.5	0.40
BUX98P	450	850	30	200	TO-218	0.9	20	4.00	4.5	0.40
BUV98V	450	1000	30	150	ISOTOP	1.5	20	4.00	5.0	0.40
BUX98	400	850	30	250	TO-3	1.5	20	4.00	3.0	0.80
BUX48	400	850	15	175	TO-3	1.5	10	2.00	5.0	0.40
2N6547	400	850	15	175	TO-3	1.5	10	2.00	0.0	0.00
BUV48FI	400	850	15	55	ISOWATT218	1.5	10	2.00	5.0	0.40
MJE13007A	400	850	8	80	TO-220	1.5	5	1.00	3.0	0.70
BUV46FI	400	850	5	30	ISOWATT220	1.5	2.5	0.50	3.0	0.80
BUV46	400	850	5	70	TO-220	1.5	2.5	0.50	3.0	0.80
BUX80	400	800	10	100	TO-3	3.0	8	2.50	3.5	0.50
MJE13009	400	700	12	100	TO-220	1.5	8	1.60	3.0	0.70
ST13007	400	700	8	80	TO-220	1.5	5	1.00	3.0	0.70
ST13005	400	700	4	75	TO-220	1.0	4	1.00	3.5	0.90
ST13003	400	700	1.5	40	SOT-32	1.0	1	0.25	1.8	0.40
ESM6045DV	450	600	84	250	ISOTOP	2.0	70	4.00	5.5	0.50

*** PNP Products**

SWITCHING TRANSISTORS AND DARLINGTONS (cont'd)

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	$V_{CE(sat)}$ @ I_C / I_B			t_s	t_f
	(V)	(V)	(A)	(W)		(V)	(A)	(A)	(μs)	(μs)
ESM5045DV	450	600	60	175	ISOTOP	2.0	50	2.80	5.0	0.50
ESM4045DV	450	600	42	150	ISOTOP	2.0	35	2.00	4.5	0.50
ESM3045DV	450	600	24	125	ISOTOP	2.0	20	1.20	4.0	0.40
BU810	400	600	7	75	TO-220	2.5	4	0.20	-	-
TIP50	400	500	1	40	TO-220	1.0	1	0.20	-	-
MJE5852*	400	450	8	80	TO-220	2.0	4	1.00	-	-
TIP49	350	450	1	40	TO-220	1.0	1	0.20	-	-
2N3439	350	450	1	10	TO-39	0.5	0.05	4 mA	-	-
BUT232V	300	400	140	300	ISOTOP	1.9	70	7.00	5.0	0.40
ESM3030DV	300	400	100	225	ISOTOP	2.2	85	2.40	3.5	0.60
BUT32V	300	400	80	250	ISOTOP	0.9	40	4.00	3.0	0.40
ESM2030DV	300	400	67	150	ISOTOP	2.2	56	1.60	3.0	0.60
BUT92A	300	400	50	250	TO-3	0.9	30	3.00	3.0	0.40
TIP48	300	400	1	40	TO-220	1.0	1	0.20	-	-
BUV28	200	400	12	85	TO-220	1.5	6	0.60	1.5	0.25
BU806	200	400	8	60	TO-220	1.5	5	0.05	0.55	0.2
BU406	200	400	7	60	TO-220	1	5	0.5	-	-
2N5657	350	375	0.5	20	SOT-32	2.5	0.25	0.03	-	-
2N5416*	300	350	1	10	TO-39	2.5	0.05	0.005	-	-
BUR52	250	350	60	350	TO-3	1	25	2.00	2.0	0.60
TIP47	250	350	1	40	TO-220	1.0	1	0.20	-	-
MJE3440	250	350	0.3	15	SOT-32	0.5	0.05	4 mA	-	-
BU807	150	330	8	60	TO-220	1.5	5	0.05	0.55	0.2
BU407	150	330	7	60	TO-220	1	5	0.5	-	-
BU407D	150	330	7	60	TO-220	1	5	0.65	-	-
MJE350*	300	300	0.5	20	SOT-32	-	-	-	-	-
MJE340	300	300	0.5	20	SOT-32	-	-	-	-	-
BUX22	250	300	40	350	TO-3	1.5	20	2.50	2.0	0.50
BUX12	250	300	20	150	TO-3	1.0	5	0.50	2.0	0.50
2N3440	250	300	1	10	TO-39	0.5	0.05	4 mA	-	-
BUR51	200	300	60	350	TO-3	1.0	30	2.00	2.0	0.60
BUV61	200	300	50	250	TO-3	1.2	40	5.00	2.4	0.25
BUV21	200	250	40	250	TO-3	0.6	12	1.20	1.8	0.40
BUY49S	200	250	3	10	TO-39	0.2	0.5	0.05	-	-
BUW50	125	250	25	150	TO-218	0.9	20	2.00	1.7	0.30
BUW90	125	250	20	125	TO-218	0.9	11	1.10	1.7	0.30
BUV27	120	240	12	85	TO-220	0.7	4	0.40	2.0	0.15
2N5415*	200	200	1	10	TO-39	2.5	0.05	0.005	-	-
BUT30V	125	200	100	250	ISOTOP	1.5	100	10.00	2.0	0.20
BUR50S	125	200	70	350	TO-3	1.0	35	2.00	2.0	2.00
BUT90	125	200	50	250	TO-3	0.9	70	7.00	2.0	0.30
BUT100	125	200	50	300	TO-3	0.9	100	10.00	2.0	0.20
BUT70	125	200	40	200	TO-218	0.9	70	7.00	1.8	0.20
BUV26	90	180	14	85	TO-220	1.5	12	1.20	2.0	0.15
BUV20	125	160	50	250	TO-3	0.6	25	2.50	1.2	0.30
BUX10	125	160	25	150	TO-3	0.6	10	1.00	1.2	0.30
BUX40	125	160	20	120	TO-3	1.6	15	1.88	1.0	0.40
BUW89	90	160	25	125	TO-218	0.9	15	1.50	1.7	0.30
BUW49	80	160	30	150	TO-218	1.2	30	3.00	1.7	0.50
ESM2012DV	120	150	120	175	ISOTOP	2.0	100	1.00	2.0	0.30
2N5038	90	150	20	140	TO-3	2.5	20	5.00	1.5	0.50
2N5682	120	120	1	10	TO-39	1.0	0.5	0.05	-	-
2N5680*	120	120	1	10	TO-39	1.0	0.5	0.05	-	-
BDY90	100	120	10	60	TO-3	1.5	10	1.00	1.3	0.20

*** PNP Products**

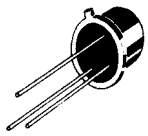
SWITCHING TRANSISTORS AND DARLINGTONS (cont'd)

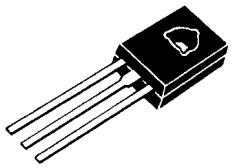
Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	$V_{CE(sat)}$ @ I_C / I_B			t_s	t_f
	(V)	(V)	(A)	(W)		(V)	(A)	(A)	(μs)	(μs)
BUV18	60	120	80	250	TO-3	1.5	80	8.00	1.1	0.25
BUW48	60	120	30	150	TO-218	1.4	40	4.00	1.7	0.50
BFX34	60	120	5	5	TO-39	1.0	5	0.50	-	-
2N5339	100	100	5	6	TO-39	1.2	5	0.50	2.0	0.20
2N5681	100	100	1	10	TO-39	1.0	0.5	0.05	-	-
2N5154	80	100	5	10	TO-39	1.5	5	0.50	-	-
2N6668*	80	80	8	65	TO-220	2	3			
BSS44*	60	65	5	5	TO-39	1.0	5	0.50	-	-

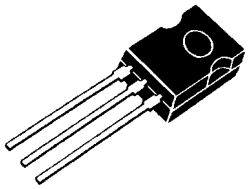
*** PNP Products**

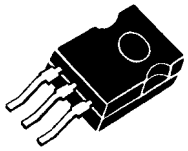
SGS-THOMSON MICROELECTRONICS

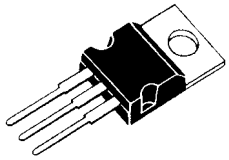
POWER BIPOLAR

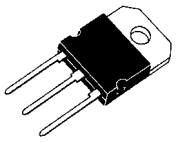

TO – 39

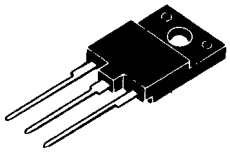

TO – 126/SOT – 32

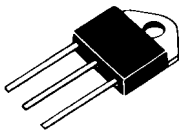

SOT – 82

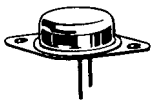

SOT – 194

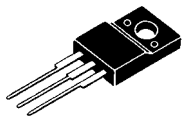

TO – 220


SOT – 93


ISOWATT218
(Fully Isolated)

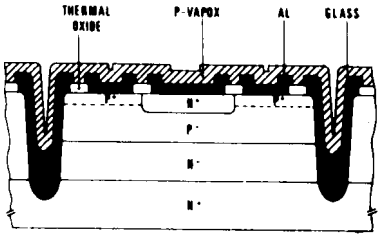

TO – 3I


TO – 3

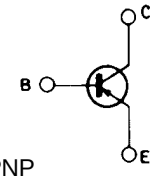

ISOWATT220
(Fully Isolated)

Epitaxial base – I_{CM} : 1 ⟶ 3 A, V_{CEO} : 22 ⟶ 100V

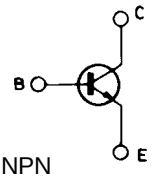
NPN and PNP types (perfect complementary pairs)
Medium V_{CEO} range (22 to 100 V)
Medium switching speed
Medium f_T (2 to 20 MHz)
High ruggedness



Internal schematic diagrams



PNP



NPN

GENERAL PURPOSE TRANSISTORS

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	h_{FE} I_C / $V_{CE(sat)}$			V_{CE} @ I_C / I_B		
	(V)	(V)	(A)	(W)			(A)	(V)	(V)	(A)	(mA)
TIP33C	100	140	10	80	TO-218	20	3.0	4	1.0	3.0	300
TIP34C*	100	140	10	80	TO-218	20	3.0	4	1.0	3.0	300
BD242C*	100	115	3	40	TO-220	25	1.0	4	1.2	3.0	600
BD241C	100	115	3	40	TO-220	25	1.0	4	1.2	3.0	600
BD239C	100	115	2	30	TO-220	15	1.0	4	0.7	1.0	200
BD240C*	100	115	2	30	TO-220	15	1.0	4	0.7	1.0	200
TIP35C	100	100	25	125	TO-218	25	1.5	4	1.8	15.0	1500
TIP36C*	100	100	25	125	TO-218	25	1.5	4	1.8	15.0	1500
BDW52C*	100	100	15	125	TO-3	20	5.0	4	1.0	5.0	500
BD912*	100	100	15	90	TO-220	15	5.0	4	1.0	5.0	500
BDW51C	100	100	15	125	TO-3	20	5.0	4	1.0	5.0	500
BD911	100	100	15	90	TO-220	15	5.0	4	1.0	5.0	500
BD711	100	100	12	75	TO-220	15	4.0	4	1.0	4.0	400
BD712*	100	100	12	75	TO-220	15	4.0	4	1.0	4.0	400
TIP42C*	100	100	6	65	TO-220	15	3.0	4	1.5	6.0	600
TIP41C	100	100	6	65	TO-220	15	3.0	4	1.5	6.0	600
BD243C	100	100	6	65	TO-220	15	3.0	4	1.5	6.0	1000
BD244C*	100	100	6	65	TO-220	15	3.0	4	1.5	6.0	1000
TIP31C	100	100	3	40	TO-220	25	1.0	4	1.2	3.0	375
TIP32C*	100	100	3	40	TO-220	25	1.0	4	1.2	3.0	375
TIP29C	100	100	1	30	TO-220	15	1.0	4	0.7	1.0	125
TIP30C*	100	100	1	30	TO-220	15	1.0	4	0.7	1.0	125

*** PNP Products**

GENERAL PURPOSE TRANSISTORS (cont'd)

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	h_{FE} I_C / $V_{CE(sat)}$			V_{CE} @ I_C / I_B		
	(V)	(V)	(A)	(W)			(A)	(V)	(V)	(A)	(mA)
MJ802	90	100	30	200	TO-3	25	7.5	2	0.8	7.5	750
MJ4502*	90	100	30	200	TO-3	25	7.5	2	0.8	7.5	750
BDY908	80	100	10	60	TO-220	50	5	5	0.5	5.0	500
MJE182	80	100	3	12.5	SOT-32	12	1.5	1	0.9	1.5	150
MJE172*	80	100	3	12.5	SOT-32	12	1.5	1	0.9	1.5	150
BD238*	80	100	2	25	SOT-32	25	1.0	2	0.6	1.0	100
BD237	80	100	2	25	SOT-32	25	1.0	2	0.6	1.0	100
MJ2955*	60	100	15	115	TO-3	20	4.0	4	1.1	4.0	400
2N3055	60	100	15	115	TO-3	20	4.0	4	1.1	4.0	400
2N6488	90	90	15	75	TO-220	20	5.0	4	1.3	5.0	500
BD241B	80	90	3	40	TO-220	25	1.0	4	1.2	3.0	600
BD242B*	80	90	3	40	TO-220	25	1.0	4	1.2	3.0	600
2N5884*	80	80	25	200	TO-3	35	3.0	4	1.0	15.0	1500
2N5886	80	80	25	200	TO-3	35	3.0	4	1.0	15.0	1500
TIP36B*	80	80	25	125	TO-218	25	1.5	4	1.8	15.0	1500
BD909	80	80	15	90	TO-220	15	5.0	4	1.0	5.0	500
BD910*	80	80	15	90	TO-220	15	5.0	4	1.0	5.0	500
BD710*	80	80	12	75	TO-220	15	4.0	4	1.0	4.0	400
BD709	80	80	12	75	TO-220	15	4.0	4	1.0	4.0	400
D45H11*	80	80	10	50	TO-220	40	4	1	1	8.0	400
D44H11	80	80	10	50	TO-220	40	4.0	1	1.0	8.0	400
BD537	80	80	8	50	TO-220	15	2.0	2	0.8	2.0	200
BD538*	80	80	8	50	TO-220	15	2.0	2	0.8	2.0	200
BD243B	80	80	6	65	TO-220	15	3.0	4	1.5	6.0	1000
TIP41B	80	80	6	65	TO-220	15	3.0	4	1.5	6.0	600
TIP42B*	80	80	6	65	TO-220	15	3.0	4	1.5	6.0	600
BD244B*	80	80	6	65	TO-220	15	3.0	4	1.5	6.0	1000
BD441	80	80	4	36	SOT-32	15	2.0	1	0.8	2.0	200
BD442*	80	80	4	36	SOT-32	15	2.0	1	0.8	2.0	200
2N5192	80	80	4	40	SOT-32	20	1.5	2	0.6	1.5	150
2N5195*	80	80	4	40	SOT-32	20	1.5	2	0.6	1.5	150
BD179	80	80	3	30	SOT-32	40	0.15	2	0.8	1.0	100
TIP32B*	80	80	3	40	TO-220	25	1.0	4	1.2	3.0	375
BD139	80	80	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
BD140*	80	80	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
BD140-10*	80	80	1.5	12.5	SOT-32	63	0.15	2	0.5	0.5	50
BD139-10	80	80	1.5	12.5	SOT-32	63	0.15	2	0.5	0.5	50
2N4920*	80	80	1	30	SOT-32	30	0.5	1	0.6	1.0	100
2N6107*	70	80	7	40	TO-220	30	3.0	4	1.0	3.0	300
2N6487	70	70	15	75	TO-220	20	5.0	4	1.3	5.0	500
2N6490*	70	70	15	75	TO-220	20	5.0	4	1.3	5.0	500
2N3772	60	100	10	150	TO-3	15	10.0	4	2.0	15.0	1500
TIP2955*	60	70	15	90	TO-218	20	4.0	4	1.1	4.0	400
TIP3055	60	70	15	90	TO-218	20	4.0	4	1.1	4.0	400
MJE2955T*	60	70	10	75	TO-220	20	4.0	4	1.1	4.0	400
MJE3055T	60	70	10	75	TO-220	20	4.0	4	1.1	4.0	400
BD241A	60	70	3	40	TO-220	25	1.0	4	1.2	3.0	600
BD242A*	60	70	3	40	TO-220	25	1.0	4	1.2	3.0	600
BD707	60	60	12	75	TO-220	15	4.0	4	1.0	4.0	400
BD708*	60	60	12	75	TO-220	15	4.0	4	1.0	4.0	400
D44H8	60	60	10	50	TO-220	40	4.0	1	1.0	8.0	400
D45H8*	60	60	10	50	TO-220	40	4.0	1	1.0	8.0	400
BD535	60	60	8	50	TO-220	25	2.0	2	0.8	2.0	200
BD536*	60	60	8	50	TO-220	25	2.0	2	0.8	2.0	200
TIP42A*	60	60	6	65	TO-220	15	3.0	4	1.5	6.0	600
TIP41A	60	60	6	65	TO-220	15	3.0	4	1.5	6.0	600
2N5191	60	60	4	40	SOT-32	25	1.5	2	0.6	1.5	150
BD440*	60	60	4	36	SOT-32	25	2.0	1	0.8	2.0	200
BD439	60	60	4	36	SOT-32	25	2.0	1	0.8	2.0	200

*** PNP Products**

SGS-THOMSON MICROELECTRONICS

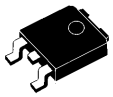
GENERAL PURPOSE TRANSISTORS (cont'd)

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	h_{FE} I_C / $V_{CE(sat)}$			V_{CE} @ I_C / I_B		
	(V)	(V)	(A)	(W)			(A)	(V)	(V)	(A)	(mA)
TIP31A	60	60	3	40	TO-220	25	1.0	4	1.2	3.0	375
TIP32A*	60	60	3	40	TO-220	25	1.0	4	1.2	3.0	375
BD236*	60	60	2	25	SOT-32	25	1.0	2	0.6	1.0	100
BD235	60	60	2	25	SOT-32	25	1.0	2	0.6	1.0	100
BD138*	60	60	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
BD137	60	60	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
TIP30A*	60	60	1	30	TO-220	15	1.0	4	0.7	1.0	125
TIP29A	60	60	1	30	TO-220	15	1.0	4	0.7	1.0	125
2N6489*	50	50	15	75	TO-220	20	5.0	4	1.3	5.0	500
2N3771	40	50	30	150	TO-3	15	15.0	4	2.0	15.0	1500
D45H5*	45	45	10	50	TO-220	40	4.0	1	1.0	8.0	400
BD534*	45	45	8	50	TO-220	25	2.0	2	0.8	2.0	200
BD437	45	45	4	36	SOT-32	40	2.0	1	0.6	2.0	200
BD438*	45	45	4	36	SOT-32	40	2.0	1	0.6	2.0	200
BD135	45	45	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
BD136*	45	45	1.5	12.5	SOT-32	40	0.15	2	0.5	0.5	50
BD234*	45	45	2	25	SOT-32	25	1.0	2	0.6	1.0	100
MJE521	40	40	4	40	SOT-32	40	1.0	1	-	-	-
2N6111*	30	40	7	40	TO-220	30	4.0	3	1.0	3.0	300
MJE210*	25	40	5	15	SOT-32	70	0.5	1	0.3	0.5	50
BD435	32	32	4	36	SOT-32	50	2.0	1	0.5	2.0	200
BD436*	32	32	4	36	SOT-32	50	2.0	1	0.5	2.0	200
BD433	22	22	4	36	SOT-32	50	2.0	1	0.5	2.0	200
BD434*	22	22	4	36	SOT-32	50	2.0	1	0.5	2.0	200

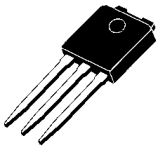
*** PNP Products**

POWER BIPOLAR

SGS-THOMSON MICROELECTRONICS



DPAK



IPAK

DPAK/IPAK

Type	V_{CEO}	V_{CBO} V_{CES}	$I_{C(cont)}$	P_{tot}	h_{FE} min @ I_C / V_{CE}			$V_{CE(sat)}$ @ I_C / I_B			Application
NPN	(V)	(V)	(A)	(W)		(A)	(V)	(V)	(A)	(A)	
MJD200T4	25	40	5	12.5	45	2	1	0.75	2	0.2	GEN.PURP.TRAN
MJD210T4*	25	40	5	12.5	45	2	1	0.75	2	0.2	GEN.PURP.TRAN
MJD3055T4	60	70	10.0	20	20	4	4	1.1	4.0	0.4	GEN. PURP. TRAN
MJD31BT4	80	80	3.0	15	10	3	4	1.2	3.0	0.375	GEN. PURP. TRAN
STD909T4	80	80	15.0	20	15	5	4	1.0	5.0	0.5	GEN. PURP. TRAN
MJD44H11	80	80	10	20	40	4	1	1	8	0.4	GEN.PURP.TRAN
MJD45H11*	80	80	10	20	40	4	1	1	8	0.4	GEN.PURP.TRAN
MJD112T4	100	100	2.0	20	1000	2	3	2.0	2.0	0.008	GEN. PURP. TRAN
MJD31CT4	100	100	3.0	15	10	3	4	1.2	3.0	0.375	GEN. PURP. TRAN
MJD122T4	100	100	5.0	20	1000	4	4	2.0	4.0	0.016	GEN. PURP. TRAN
MJD47T4	250	350	1.0	15	10	1	10	1.0	1.0	0.2	SWITCHING
MJD340T4	300	300	0.5	15	30	0.05	10	-	-	-	SWITCHING
MJD50T4	400	500	1	15	30	0.3	10	1	1	0.2	SMPS
MJD2955T4*	60	70	10.0	20	20	4	4	1.1	4.0	0.4	GEN. PURP. TRAN
MJD32BT4*	80	80	3.0	15	10	3	4	1.2	3.0	0.375	GEN. PURP. TRAN
STD910T4*	80	80	15.0	20	15	5	4	1.0	5.0	0.5	GEN. PURP. TRAN
MJD117T4*	100	100	2.0	20	1000	2	3	2.0	2.0	0.008	GEN. PURP. TRAN
MJD32CT4*	100	100	3.0	15	10	3	4	1.2	3.0	0.375	GEN. PURP. TRAN
MJD127T4*	100	100	5.0	20	1000	4	4	2.0	4.0	0.016	GEN. PURP. TRAN
MJD350T4*	300	300	0.5	15	30	0.05	10	-	-	-	SWITCHING
BULD118D-1	400	700	2	20	10	0.5	5	1	1	0.2	LIGHTING
BULD128D-1	400	700	4	35	8	2	5	1.5	2.5	0.5	LIGHTING

Suffix : T4 = DPAK in tape & real

Suffix: -1 = IPAK in tubes

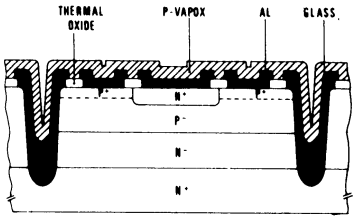
* PNP Products

SGS-THOMSON MICROELECTRONICS

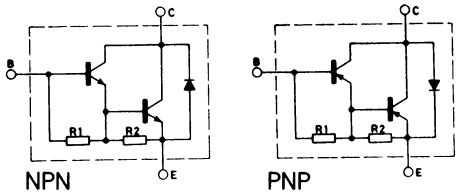
POWER BIPOLAR

Epitaxial base – I_{CM} : 2 ⟶ 3 A, V_{CEO} : 45 ⟶ 180V

NPN and PNP types
Medium V_{CEO} range (45 to 180 V)
Medium switching speed
Medium f_T (2 to 20 MHz)
High ruggedness
Monolithic Darlingtons



Internal schematic diagrams



GENERAL PURPOSE DARLINGTONS

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	h_{FE} I_C / $V_{CE(sat)}$			V_{CE} @ I_C / I_B		
	(V)	(V)	(A)	(W)			(A)	(V)	(V)	(V)	(mA)
BDX53F	160	160	8	60	TO-220	500	2	5	2.0	2	10
BDX54F*	160	160	8	60	TO-220	500	2	5	2.0	2	10
MJ11016	120	120	30	200	TO-3	1000	20	5	4.0	30	300
2N6284	100	100	20	160	TO-3	750	10	3	3.0	20	200
2N6287*	100	100	20	160	TO-3	750	10	3	3.0	20	200
MJ4032*	100	100	16	150	TO-3	1000	10	3	4.0	16	80
MJ4035	100	100	16	150	TO-3	1000	10	3	4.0	16	80
BDW83C	100	100	15	130	TO-218	750	6	3	4.0	15	150
2N6059	100	100	12	150	TO-3	750	6	3	3.0	12	120
BDW93C	100	100	12	80	TO-220	750	5	3	2.0	5	20
BDW93CFI	100	100	12	40	ISOWATT220	750	5	3	2.0	5	20
BDW94C*	100	100	12	80	TO-220	750	5	3	2.0	5	20
BDW94CFI*	100	100	12	40	ISOWATT220	750	5	3	2.0	5	20
BDX87C	100	100	12	120	TO-3	1000	5	3	2.0	6	24
BDX88C*	100	100	12	120	TO-3	1000	5	3	2.0	6	24
BDX33C	100	100	10	70	TO-220	750	3	3	2.5	3	6
BDX34C*	100	100	10	70	TO-220	750	3	3	2.5	3	6
TIP142	100	100	10	125	TO-218	1000	5	4	3.0	10	40
TIP142T	100	100	10	90	TO-220	500	10	4	3.0	10	40
TIP147*	100	100	10	125	TO-218	1000	5	4	3.0	10	40
TIP147T*	100	100	10	90	TO-220	1000	5	4	3.0	10	40
BDX53C	100	100	8	60	TO-220	750	3	3	2.0	3	12
BDX54C*	100	100	8	60	TO-220	750	3	3	2.0	3	12
TIP102	100	100	8	80	TO-220	1000	3	4	2.0	3	6
TIP107*	100	100	8	80	TO-220	1000	3	4	2.0	3	6
TIP132	100	100	8	70	TO-220	1000	4	4	2.0	4	16
TIP137*	100	100	8	70	TO-220	1000	4	4	2.0	4	16
BD336*	100	100	6	60	SOT-82	750	3	3	2.0	3	12
TIP122	100	100	5	65	TO-220	1000	3	3	2.0	3	12
TIP127*	100	100	5	65	TO-220	1000	3	3	2.0	3	12
BD681	100	100	4	40	SOT-32	750	1.5	3	2.5	1.5	30
BD682*	100	100	4	40	SOT-32	750	1.5	3	2.5	1.5	30
TIP112	100	100	2	50	TO-220	1000	1	4	2.5	2	8
TIP117*	100	100	2	50	TO-220	1000	1	4	2.5	2	8
MJ11013*	90	90	30	200	TO-3	1000	20	5	4.0	30	300
MJ11014	90	90	30	200	TO-3	1000	20	5	4.0	30	300

*** PNP Products**

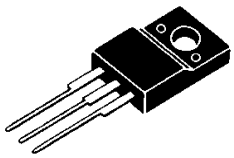
GENERAL PURPOSE DARLINGTONS (cont'd)

Device	V_{CEO}	V_{CBO} V_{CES}	I_C	P_{tot}	Package	h_{FE} I_C / $V_{CE(sat)}$			V_{CE} @ I_C / I_B		
	(V)	(V)	(A)	(W)			(A)	(V)	(V)	(V)	(mA)
SGSD100	80	80	25	130	TO-218	300	20	3	1.8	10	40
SGSD200*	80	80	25	130	TO-218	300	20	3	1.8	10	40
BDW93B	80	80	12	80	TO-220	750	5	3	2.0	5	20
BDW94B*	80	80	12	80	TO-220	750	5	3	2.0	5	20
2N6388	80	80	10	65	TO-220	1000	5	3	2.0	5	10
BDX33B	80	80	10	70	TO-220	750	3	3	2.5	3	6
BDX34B*	80	80	10	70	TO-220	750	3	3	2.5	3	6
MJ2501*	80	80	10	150	TO-3	1000	5	3	2.0	5	20
MJ3001	80	80	10	150	TO-3	1000	5	3	2.0	5	20
TIP141	80	80	10	125	TO-218	1000	5	4	3.0	10	40
TIP146*	80	80	10	125	TO-218	1000	5	4	3.0	10	40
BDX53B	80	80	8	60	TO-220	750	3	3	2.0	3	12
BDX54B*	80	80	8	60	TO-220	750	3	3	2.0	3	12
TIP106*	80	80	8	80	TO-220	1000	3	4	2.0	3	6
TIP131	80	80	8	70	TO-220	1000	4	4	2.0	4	16
TIP121	80	80	5	65	TO-220	1000	3	3	2.0	3	12
TIP126*	80	80	5	65	TO-220	1000	3	3	2.0	3	12
2N6036*	80	80	4	40	SOT-32	500	0.5	3	2.0	2	8
BD679	80	80	4	40	SOT-32	750	1.5	3	2.5	1.5	30
BD679A	80	80	4	40	SOT-32	750	2	3	2.8	2	40
BD680*	80	80	4	40	SOT-32	750	1.5	3	2.5	1.5	30
BD680A*	80	80	4	40	SOT-32	750	2	3	2.8	2	40
MJE802	80	80	4	40	SOT-32	100	4	3	3.0	4	40
TIP145*	60	60	10	125	TO-218	1000	5	4	3.0	10	40
2N6050*	60	60	12	150	TO-3	750	6	3	3.0	12	120
TIP100	60	60	8	80	TO-220	1000	3	4	2.0	3	6
TIP105*	60	60	8	80	TO-220	1000	3	4	2.0	3	6
TIP135*	60	60	8	70	TO-220	1000	4	4	2.0	4	16
SGS125*	60	60	5	65	SOT-82	1000	3	3	2.0	3	12
TIP120	60	60	5	65	TO-220	1000	3	3	2.0	3	12
TIP125*	60	60	5	65	TO-220	1000	3	3	2.0	3	12
BD677	60	60	4	40	SOT-32	750	1.5	3	2.5	1.5	30
BD677A	60	60	4	40	SOT-32	750	2	3	2.8	2	40
BD678*	60	60	4	40	SOT-32	750	1.5	3	2.5	1.5	30
BD678A*	60	60	4	40	SOT-32	750	2	3	2.8	2	40
TIP110	60	60	2	50	TO-220	1000	1	4	2.5	2	8
TIP115*	60	60	2	50	TO-220	1000	1	4	2.5	2	8

*** PNP Products**

SGS-THOMSON MICROELECTRONICS

POWER BIPOLAR



TO – 220FP

TO-220FP

Type	V_{CEO}	V_{CBO} V_{CES}	$I_{C(cont)}$	P_{tot}	h_{FE} @ I_C / V_{CE}			$V_{CE(sat)}$ @ I_C / I_B		
	(V)	(V)	(A)	(W)		(A)	(V)	(V)	(A)	(A)
BDX53BFP	80	80	8	25	750	3	3	2	3	0.012
BDW93CFP	100	100	12	30	750	5	3	2	5	0.020
BDW94CFP*	100	100	12	30	750	5	3	2	5	0.020
BD241BFP	80	90	3	15	25	1	4	1.2	3	0.6
BD242BFP*	80	90	3	15	25	1	4	1.2	3	0.6
BD533FP	45	45	8	15	25	2	2	0.8	2	0.2
BD534FP*	45	45	8	15	25	2	2	0.8	2	0.2
TIP122FP	100	100	5	25	1000	3	3	2	3	0.012
TIP127FP*	100	100	5	25	1000	3	3	2	3	0.012
BUH515FP	700	1500	8	30	6	5	5	1.5	5	1.25
BUL310FP	500	1000	5	28	10	0.01	5	1.1	3	0.6t

*** PNP Products**