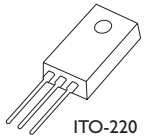
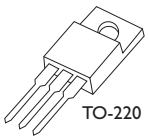
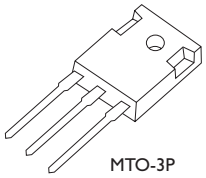
HIGH VOLTAGE • HIGH SPEED SWITCHING TRANSISTORS


ITO-220

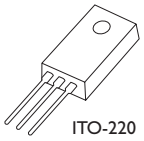

TO-220

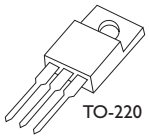

MTO-3P

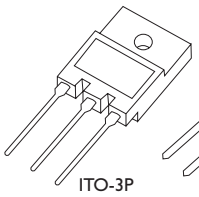
HDT series

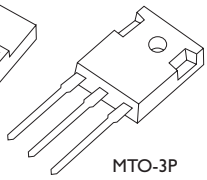
Bipolar transistors (NPN)

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{RM} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θ_{jc} (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SC4310	900	800	7	6	3	50	–55 ~ 150	150	800	7	1.5	2.5	2.5	7	0.5	3	0.5	TO-220	80-3
4311						40							3.1					ITO-220	82-4
4312						80							1.56					MTO-3P	86-2
4313				10	4	100							1.25						
4314				15	6	130							0.96						


ITO-220


TO-220

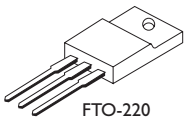

ITO-3P

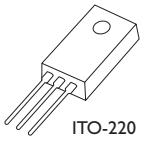

MTO-3P

HFX series

Bipolar transistors (NPN)

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{RM} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θ_{jc} (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SC4230	1200	800	7	2	1	50	–55 ~ 150	150	800	8	1	1.5	2.5	8	0.5	3.5	0.3	TO-220	80-3
4231						30							4.16					ITO-220	82-4
4232						70							1.7					MTO-3P	86-2
4233				3		60							2.08					TO-220	80-3
4234						45							2.77					ITO-220	82-4
4235						80							1.56					MTO-3P	86-2
4236				6	3	100							1.25						
4237				10	4	150							0.83						
4583				3	1	50							2.5					ITO-3P	88-3
4584				6	3	65							1.92						
4585				10	4	85							1.47						


FTO-220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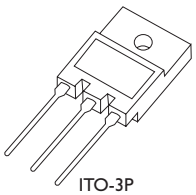
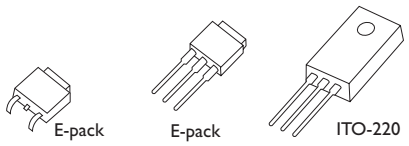

ITO-3P

Switching Transistors for Lighting Equipment

Bipolar transistors (NPN)

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{RM} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θ_{jc} (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SC4940	1200	550	7	4	2	30	–55 ~ 150	150	550	10	1	1.5	4.16	10	0.8	3.0	0.3	ITO-220	82-4
4941	1500	800		6	3	65			800	15	0.5		1.92	8	0.5	3.5		ITO-3P	88-3
5382	1200	550	9			40			550	10	1		3.13	—	1.3	4.0		FTO-220	84-3

LOW SATURATION VOLTAGE SWITCHING TRANSISTORS

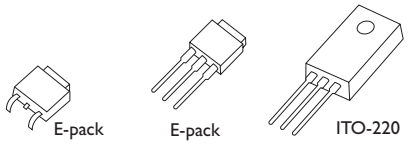


LSV series

Bipolar transistors

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{CBO} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θjc (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SA1795	–60	–40	–7	–5	–1.5	10	–55 ~ 150	150	–40	70	–0.3	–1.2	12.5	50	0.3	1.5	0.5	E-pack	*1
1796				–7									12.5						
1679				–5		25							5					ITO-220	82-4
1598				–7									5						
1599				–10									5						
1600				–12	–2	30							4.16						
1601				–15		45							2.77						
2SC4668	60	40	7	7	1.5	10	–55 ~ 150	150	40	70	0.3	1.2	12.5	50	0.3	1.5	0.5	E-pack	*1
4669				10									12.5						
4148				7		25							5					ITO-220	82-4
4149				10									5						
4150				12	2								5						
4151				15		30							4.16						
4876				30	4	45				100			2.78						

*1: Leaded package - Fig. 78-3; SMD package - Fig. 77-3



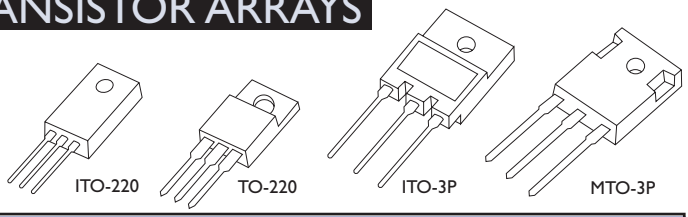
HSV series

Bipolar transistors

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{CBO} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θjc (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SA1876	–80	–80	–7	–3	–1	10	–55 ~ 150	150	–80	70	–0.3	–1.2	12.5	50	0.3	1.5	0.2	E-pack	*1
1877				–5	–1.5														
1878						25							5					ITO-220	82-4
1879				–7															
1880				–10															
2SC4978	100	80	7	3	1	10	–55 ~ 150	150	80	70	0.3	1.2	12.5	50	0.3	1.5	0.2	E-pack	*1
4979				5	1.5														
4980						25							5					ITO-220	82-4
4981				7															
4982				10															

*1: Leaded package - Fig. 78-3; SMD package - Fig. 77-3

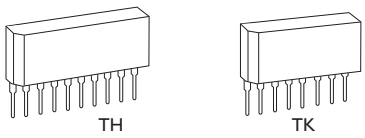
DARLINGTON TRANSISTORS & TRANSISTOR ARRAYS



Darlington Power Transistors

Bipolar transistors

Type No.	Absolute Maximum Ratings								Electrical Characteristics									Outline	
	V_{CBO} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	V_{CEO} (sus) (min) [V]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θ_{jc} (max) [°C/W]	f_T (typ) [MHz]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]	Package	Figure
2SD1022	100	100	7	5	0.5	30	–55 ~ 150	150	—	1500	1.5	2	4.17	20	2	5	3	TO-220	80-3
1023	200	200														8	5		
1024	100	100	7	8	0.5	50		150	—	1500	1.5	2	2.5	20	2	5	3		
1025	200	200														8	5		
1026	100	100	7	15	1	100		150	—	1500	1.5	2	1.25	20	2	5	3	MTO-3P	86-2
1027	200	200														8	5		
2196						65							1.92			12		ITO-3P	88-3
1788	100	100	7	±4	0.3	25	–55 ~ 150	150	—	1500	1.5	2	5.0	20	2	12	5	ITO-220	82-4
1789	200	200																	
1790	$60^{\pm10}$	$60^{\pm10}$																	
1791	100	100	7	7	0.5	30		150	—	1500	1.5	2	4.17	20	2	12	5		
1792	200	200																	
1793	100	100	7	10	0.5	50		150	—	1500	1.5	2	2.5	20	2	12	5		
1794	200	200																	
1795	500	400	12	10	0.5	50		150	400	150	1.5	2	2.5	10	2	15	15		
2SB1282	–100	–100	–7	±4	–0.3	25	–55 ~ 150	150	—	1500	–1.5	–2	5	20	1	4	2	ITO-220	82-4
1283				–7	–0.5	30							4.16						
1284				–10	–0.8	35							3.57						
1285				–15	–1	100							1.25					MTO-3P	86-2
1448						65							1.92					ITO-3P	88-3



Transistor Arrays

Bipolar transistors Arrays

Type No.	Absolute Maximum Ratings								Electrical Characteristics							Remarks	Outline	
	V_{CBO} [V]	V_{CEO} [V]	V_{EBO} [V]	I_C [A]	I_B [A]	P_T [W]	Tstg [°C]	T_J [°C]	h_{FE} (min)	V_{CE} (sat) (max) [V]	V_{BE} (sat) (max) [V]	θ_{ja} (max) [°C/W]	ton (max) [μs]	ts (max) [μs]	tf (max) [μs]		Package	Figure
TH3L10	100	100	7	±3	0.3	3.5	–55~150	150	1500	1.5	2	35	2	8	3	NPNX4	TH	65
3L20	200	200																
3C10	±100	±100	±7		±0.3					±1.5	±2					NPNX2, PNPX2		
3J10	–100	–100	–7		–0.3					–1.5	–2					PNPX4		
3L10Z*	$60^{\pm10}$	$60^{\pm10}$	7		0.3					1.5	2					NPNX4		
5L10	100	100		5	0.5													
5L20	200	200													5			
TK3L10	100	100	7	±3	0.3	2.5	–55~150	150	1500	1.5	2	50	2	8	3	NPNX3	TK	66
3L20	200	200																
3J10	–100	–100	–7		–0.3					–1.5	–2					PNPX3		
3L10Z*	$60^{\pm10}$	$60^{\pm10}$	7		0.3					1.5	2					NPNX3		
5L10	100	100		5	0.5													
5L20	200	200													5			
TH5P4	±60	±40	±7	±5	±1.5	3.5			70	±0.3	±1.2	35.7	0.3	2	0.5	NPNX2, PNPX2	TH	65

*: With zener diode between collector and base