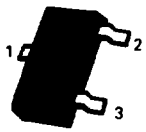
The SuperSOT Series



A:1) HIGH CURRENT SuperSOT TRANSISTORS (P_D=625mW)

Pinout : 1-Collector, 2-Emitter, 3-Base

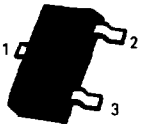
Type	V_{CBO} V	V_{CEO} V	I_C mA	P_{tot} mW	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz
NPN									
FMMT617	15	15	**3000**	**625**	200 / -	3000 / 2	0.10	1000 / 10	120
					150 / -	5000 / 2	0.20	3000 / 50	
PNP									
FMMT717	-12	-12	**-2500**	**625**	180 / -	-2500/ -2	-0.17	-1500 / -50	110
					60 / -	-8000 / -2	-0.22	-2500 / -50	

A:2a) SuperSOT TRANSISTORS NPN (P_D=625mW)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	I_C mA	P_{tot} mW	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz
FMMT625	150	150	1000	**625**	300 / -	200 / 10	0.20	100 / 1	135
					30 / -	1000/ 10	0.30	1000 / 50	
FMMT624	125	125	1000	**625**	300 / -	200 / 10	0.22	500 / 10	155
					100 / -	1000 / 10	0.25	1000 / 50	
FMMT619	50	50	2000	**625**	200 / -	1000 / 2	0.20	1000 / 10	165
					100 / -	2000 / 2	0.22	2000 / 50	
FMMT618	20	20	2500	**625**	200 / -	2000 / 2	0.15	1000 / 10	140
					100 / -	6000 / 2	0.20	2500 / 50	

The SuperSOT Series

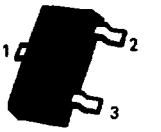


A:2b) SuperSOT TRANSISTORS PNP (P_D=625mW)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	I_C mA	P_{tot} mW	h_{FE} Min/ Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz
FMMT723	-100	-100	-1000	625	300 / -	-100 / -10	-0.20	-500 / -50	200
					250 / -	-500 /- 10	-0.33	-1000 / -150	
FMMT722	-70	-70	-1500	625	175 / -	-1000 / -5	-0.22	-1000 / -100	200
					40 / -	-1500 / -5	-0.26	-1500 / -200	
FMMT720	-40	-40	-1500	625	180 / -	-1000 / -2	-0.22	-1000 / -50	190
					60 / -	-1500 / -2	-0.33	-1500 / -100	
FMMT718	-20	-20	-1500	625	150 / -	-2000 / -2	-0.20	-1000 / -20	180
					35 / -	-4000 / -2	-0.22	-1500 / -50	

SOT23



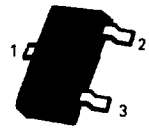
A:3) HIGH PERFORMANCE LOW VOLTAGE TRANSISTORS (P_D=500mW)

The transistors included in this range exhibit excellent performance features of high h_{FE}, high current and very low saturation voltage. This combination ensures their suitability for a wide range of applications including portable products, battery operated equipment, power management, DC-DC conversion, small DC motors and general load driving functions.

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	I_C(cont) mA	h_{FE} Min/Max	h_{FE} at I_C/V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Min MHz	P_{tot} mW
NPN									
FMMT451	80	60	1000	50/150	150/10	0.35	150/15	150	500
FMMT491	80	60	1000	100/300	500/5	0.25	500/50	150	500
FMMT491A	40	40	1000	300/900	500/5	0.30	500/50	150	500
FMMT489	50	30	1000	100/300	1000/2	0.30	1000/100	150	500
FMMT449	50	30	1000	100/300	500/2	0.50	1000/100	150	500
PNP									
FMMT591	-80	-60	-1000	100/300	-500/-5	-0.30	-500/-50	150	500
FMMT551	-80	-60	-1000	50/150	-150/-10	-0.35	-150/-15	150	500
FMMT591A	-40	-40	-1000	300/800	-100/-5	-0.35	-500/-20	150	500
FMMT589	-50	-30	-1000	80/-	-1000/-2	-0.35	-1000/-100	100	500
FMMT549	-35	-30	-1000	100/300	-500/-2	-0.50	-1000/-100	100	500
FMMT549A	-35	-30	-1000	150/500	-500/-2	-0.30	-100/-1	100	500

SOT23



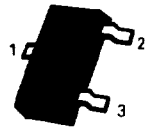
A:4) HIGH PERFORMANCE HIGH VOLTAGE TRANSISTORS (P_D=500mW)

This table includes NPN & PNP SOT23 transistors with excellent specification combinations of high H_{FE}, high current and low saturation voltage. These features ensure their suitability for a wide range of applications including lighting, automotive, signal conditioning, audio, telecoms and metering equipment.

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ mA	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Min MHz	P_{tot} mW
NPN									
FMMT458	400	400	225	100/300	50/10	0.20	20/2	50	500
FMMT497	300	300	500	80/300	100/10	0.20	100/10	75	500
FMMT495	170	150	1000	100/300	250/10	0.20	250/25	100	500
FMMT455	160	140	1000	100/300	150/10	0.70	150/15	100	500
FMMT494	140	120	1000	100/300	250/10	0.20	250/25	100	500
FMMT493	120	100	1000	100/300	250/10	0.30	500/50	150	500
PNP									
FMMT558	-400	-400	-150	100/300	-50/-10	-0.20	-20/-2	50	500
FMMT597	-300	-300	-200	100/-	-100/-10	-0.25	-100/-10	75	500
FMMT596	-220	-200	-300	100/300	-250/-10	-0.35	-250/-25	150	500
FMMT576	-200	-200	-1000	50/300	-300/-10	-0.30	-100/-10	100	500
FMMT555	-160	-150	-1000	50/300	-300/-10	-0.30	-100/-10	100	500
FMMT593	-120	-100	-1000	100/300	-500/-5	-0.30	-500/-50	150	500

SOT23



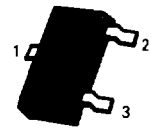
A:5) DARLINGTON TRANSISTORS

This range of Darlingtons are suitable for general load driver applications such as motors, lamps and small relays.

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ mA	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz	P_{tot} mW
NPN									
FMMT614	120	100	500	5K/-	500/5	1.0	500/5	100	330
FMMT38A	80	60	300	1K/-	500/5	1.25	800/8	100	330
FMMT38B	80	60	300	4K/-	500/5	1.25	800/8	100	330
FMMT38C	80	60	300	10K/-	500/5	1.25	800/8	100	330
BCV47	80	60	500	2K/-	500/5	1.0	100/0.1	170	330
BCV27	40	30	500	4K/-	500/5	1.0	100/0.1	170	330
FMMTA14	30	30	300	20K/-	100/5	1.5	100/0.1	100	330
FMMTA13	30	30	300	10K/-	100/5	1.5	100/0.1	100	330
FMMTA12	20	20	300	20K/-	10/5	1.0	10/0.01	100	330
PNP									
BCV46	-80	-60	-500	2K/-	-500/-5	-1.0	-100/-0.1	200	330
BCV26	-40	-30	-500	4k/-	-500/-5	-1.0	-100/-0.1	200	330
FMMTA63	-30	-30	-500	10K/-	-100/-5	-1.5	-100/-0.1	125	330
FMMTA64	-30	-30	-500	20K/-	-100/-5	-1.5	-100/-0.1	125	330

SOT23



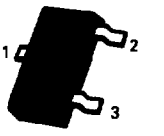
A:6) RF TRANSISTORS (NPN)

The NPN transistors presented in this table are ideally suited for use in application areas such as RF security systems (Automotive and Domestic), crystal oscillators, FM Tuners and IF amplification.

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ mA	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	N Typ at f dB	N Typ at f MHz	f_T Min MHz	P_{tot} mW
FMMTH10	30	25	25	60/-	4/10	3.0	500	650	330
FMMT918	30	15	100	20/-	3/1	6.0	60	600	330
BFQ31A	30	15	100	100/-	3/1	6.0	60	600	330
BFQ31	30	15	100	20/-	3/1	6.0	60	600	330
BFS17	25	15	25	25/150	2/1	4.5	500	1300	330
BFS17H	25	15	25	70/200	2/1	4.5	500	1300	330
BFS17L	25	15	25	25/100	2/1	4.5	500	1300	330
BFS20	30	20	25	40/85	7/10	–	–	450	330
FMMT5179	20	12	50	25/250	3/1	4.5	200	900	330

SOT23



The unique characteristics of these avalanche transistors make them ideally suited for use with pulsing laser diodes in range measurement equipment and collision avoidance systems. Other uses include pulse generators, enabling optical switches and applications requiring very fast edges.

A:7a) AVALANCHE TRANSISTORS (NPN)

Pinout :1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	h_{FE} at Min	h_{FE} at I_C mA	Peak Collector Current I_{CM} A	I_{SB}* at A	I_{SB}* at V_C V	f_T at MHz	f_T at I_C mA	P_{tot} mW
FMMT417	320	100	25	10	60	25	250	40	10	330
FMMT415	260	100	25	10	60	25	250	40	10	330

* Current in secondary breakdown. Specifically designed to operate in the avalanche mode.

A:7b) LOW VOLTAGE AVALANCHE TRANSISTOR (NPN)

Pinout :1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	h_{FE} at Min	h_{FE} at I_C mA	Peak Collector Current I_{CM} A	I_{SB}* at A	I_{SB}* at V_C V	f_T at MHz	f_T at I_C mA	P_{tot} mW
FMMT413 †	150	50	50	10	50	31	130	150	10	330

* Current in secondary breakdown. Specifically designed to operate in the avalanche mode.

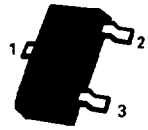
† This device is currently in development.
Samples and production volumes are scheduled for availability JUNE 1996

A:8) HIGH VOLTAGE TRANSISTORS

Pinout :1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ mA	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C / I_B mA	f_T Typ MHz	P_{tot} mW
NPN									
FMMT6517	350	350	500	30/200	30/10	0.35	20/2	50	330
FMMTA42	300	300	200	40/-	30/10	0.5	20/2	50	330
FMMTA43	200	200	200	50/200	30/10	0.4	20/2	50	330
PNP									
FMMT6520	-350	-350	-500	30/200	-30/-10	-0.35	-20/-2	50	330
FMMTA92	-300	-300	-200	25/-	-30/-10	-0.5	-20/-2	50	330
FMMTA93	-200	-200	-200	30/150	-30/-10	-0.4	-20/-2	50	330

SOT23

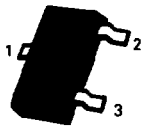


A:9) MEDIUM POWER TRANSISTORS (NPN)

Pinout :1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ mA	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} mA / Volts	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz	P_{tot} mW
BCX41	125	125	800	63/-	100/1	0.90	300/30	100	330
FMMTA06	80	80	500	50/-	100/1	0.25	100/10	100	330
FMMTA05	60	60	500	50/-	100/1	0.25	100/10	100	330
BCW66F	75	45	800	100/250	100/1	0.30	100/10	100	330
BCW66G	75	45	800	160/400	100/1	0.30	100/10	100	330
BCW66H	75	45	800	250/630	100/1	0.30	100/10	100	330
BCX19	50	45	500	100/600	100/1	0.62	500/50	200	330
BC817	50	45	500	100/600	100/1	0.70	500/50	200	330
BC817-16	50	45	500	100/250	100/1	0.70	500/50	200	330
BC817-25	50	45	500	160/400	100/1	0.70	500/50	200	330
BC817-40	50	45	500	250/600	100/1	0.70	500/50	200	330
BCW65A	60	32	800	100/250	100/1	0.30	100/10	100	330
BCW65B	60	32	800	160/400	100/1	0.30	100/10	100	330
BCW65C	60	32	800	250/630	100/1	0.30	100/10	100	330
BC818	30	25	500	100/600	100/1	0.70	500/50	200	330
BC818-16	30	25	500	100/250	100/1	0.70	500/50	200	330
BC818-25	30	25	500	160/400	100/1	0.70	500/50	200	330
BC818-40	30	25	500	250/600	100/1	0.70	500/50	200	330
BCX20	30	25	500	100/600	100/1	0.62	500/50	200	330

SOT23

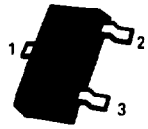


A:10) MEDIUM POWER TRANSISTORS (PNP)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V	I_C mA	h_{FE} Min/Max	h_{FE} at I_C/V_{CE} mA/V	$V_{CE(sat)}$ Max V	$V_{CE(sat)}$ at I_C/I_B mA	f_t Typ MHz	P_{tot} mW
FMMTA56	-80	-80	-500	50/-	-100/-1	-0.25	-100/-10	100	330
FMMTA55	-60	-60	-500	50/-	-100/-1	-0.25	-100/-10	100	330
BCW68F	-60	-45	-800	100/250	-100/-1	-0.3	-100/-10	100	330
BCW68G	-60	-45	-800	160/400	-100/-1	-0.3	-100/-10	100	330
BCW68H	-60	-45	-800	250/630	-100/-1	-0.3	-100/-10	100	330
BCX17	-50	-45	-500	100/600	-100/-1	-0.62	-500/-50	100	330
BC807	-50	-45	-500	100/600	-100/-1	-0.7	-500/-50	100	330
BC807-16	-50	-45	-500	100/250	-100/-1	-0.7	-500/-50	100	330
BC807-25	-50	-45	-500	160/400	-100/-1	-0.7	-500/-50	100	330
BC807-40	-50	-45	-500	250/600	-100/-1	-0.7	-500/-50	100	330
BCW67A	-45	-32	-800	100/250	-100/-1	-0.3	-100/-10	100	330
BCW67B	-45	-32	-800	160/400	-100/-1	-0.3	-100/-10	100	330
BCW67C	-45	-32	-800	250/630	-100/-1	-0.3	-100/-10	100	330
BCX18	-30	-25	-500	100/600	-100/-1	-0.62	-500/-50	100	330
BC808	-30	-25	-500	100/600	-100/-1	-0.7	-500/-50	100	330
BC808-16	-30	-25	-500	100/250	-100/-1	-0.7	-500/-50	100	330
BC808-25	-30	-25	-500	160/400	-100/-1	-0.7	-500/-50	100	330
BC808-40	-30	-25	-500	250/600	-100/-1	-0.7	-500/-50	100	330

SOT23



OTHER SMALL SIGNAL DEVICES SUPPLIED (LISTING ONLY)

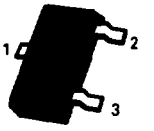
A:11a) GENERAL PURPOSE TRANSISTORS (Datasheets Available on Request)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V
NPN		
BC846A	80	65
BC846B	80	65
BCV71	80	60
BCV72	80	60
FMMT2484	60	60
FMMT5209	50	50
FMMT5210	50	50
BC850B	50	45
BC850C	50	45
BC847A	50	45
BC847B	50	45
BC847C	50	45
BCW71	50	45
BCW72	50	45
BCX70G	45	45
BCX70H	45	45
BCX70J	45	45
BCX70K	45	45
FMMTA20	40	40
BCW60A	32	32
BCW60B	32	32
BCW60C	32	32
BCW60D	32	32
FMMT5088	35	30
BC848A	30	30
BC848B	30	30
BC848C	30	30
BC849B	30	30
BC849C	30	30

Type	V_{CBO} V	V_{CEO} V
NPN		
FMMT5089	30	25
BCW31	30	20
BCW32	30	20
BCW33	30	20

Type	V_{CBO} V	V_{CEO} V
PNP		
BC856A	-80	-65
BC856B	-80	-65
BCW89	-80	-60
FMMTA70	-50	-50
FMMT5087	-50	-50
BCW69	-50	-45
BCW70	-50	-45
BC857A	-50	-45
BC857B	-50	-45
BC857C	-50	-45
BC860A	-50	-45
BC860B	-50	-45
BC860C	-50	-45
BCX71G	-45	-45
BCX71H	-45	-45
BCX71J	-45	-45
BCX71K	-45	-45
BCW61A	-32	-32
BCW61B	-32	-32
BCW61C	-32	-32
BCW61D	-32	-32
BC858A	-30	-30
BC858B	-30	-30
BC858C	-30	-30
BC859A	-30	-30
BC859B	-30	-30
BC859C	-30	-30
BCW29	-30	-20
BCW30	-30	-20



OTHER SMALL SIGNAL DEVICES SUPPLIED (LISTING ONLY)

A:11b) SWITCHING TRANSISTORS (Datasheets Available on Request)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V
NPN		
BSS79B	75	40
BSS79C	75	40
FMMT2222A	75	40
FMMT4400	60	40
FMMT4401	60	40
BSS66	60	40
BSS67	60	40
FMMT3903	60	40
FMMT3904	60	40
FMMT2222	60	30
FMMT4123	40	30
FMMT4124	30	25
FMMT2369A	40	15
FMMT2369	40	15
BSV52	20	12

Type	V_{CBO} V	V_{CEO} V
PNP		
BSS82B	-60	-60
BSS82C	-60	-60
FMMT2907A	-60	-60
FMMT2907	-60	-40
BSS80B	-60	-40
BSS80C	-60	-40
FMMT3905	-60	-40
FMMT3906	-60	-40
FMMT4402	-40	-40
FMMT4403	-40	-40
BSS69	-40	-40
BSS70	-40	-40
FMMT4125	-30	-30
FMMT4126	-25	-25
BSS65	-12	-12

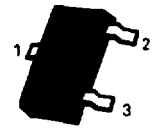
A11c) HIGH VOLTAGE TRANSISTORS (Datasheets Available on Request)

Pinout : 1-Collector, 2-Emitter, 3-Base

Type	V_{CBO} V	V_{CEO} V
NPN		
FMMT5551	180	160
FMMT5550	160	140
BSS64	120	80
HT2	90	80

Type	V_{CBO} V	V_{CEO} V
PNP		
FMMT5401	-160	-150
FMMT5400	-130	-120
BSS63	-110	-100
HT3	-90	-80

SOT23



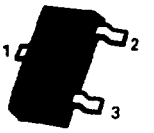
B:1a) SMALL SIGNAL MOSFETS (SOTFETs ™)

The MOSFET transistors listed in this table are suited for use in wide ranging applications including, telecoms, LCD panel, power management, DC-DC conversion, automotive and general switching equipment.

Pinout : 1-Drain, 2-Source, 3-Gate

Type	BV_{DSS}	I_D	I_{DM}	$V_{GS(th)}$		$R_{DS(on)}$ @			P_D
	V	mA	A	Min/Max V	at I_D mA	Max Ω	I_D mA	V_{GS} V	mW
N-CHANNEL									
ZVN3320F	200	60	1.0	1.0/3.0	1.0	25.0	100	10	330
BSS123	100	170	0.68	0.8/2.8	1.0	6.0	100	10	360
BSS123A	100	170	0.68	0.8/2.0	1.0	6.0	170	10	360
ZVN3310F	100	100	2.0	0.8/2.4	1.0	10.0	500	10	330
BST82	80	175	0.6	1.5/3.5	1.0	10.0	150	5	330
ZVN4106F	60	200	3.0	1.3/3.0	1.0	2.5	500	10	330
ZVN3306F	60	150	3.0	0.8/2.4	1.0	5.0	500	10	330
2N7002	60	115	0.8	1.0/2.5	0.25	7.5	50	5	330
VN10LF	60	150	3.0	0.8/2.5	1.0	7.5	200	5	330
BSS170F	60	150	3.0	0.8/3.0	1.0	5.0	200	10	330
BSS138	50	200	0.8	0.5/1.5	1.0	3.5	200	5	360
P-CHANNEL									
ZVP1320F	-200	-35	-0.4	-1.5/-3.5	-1.0	80.0	-50	-10	330
ZVP3310F	-100	-75	-1.2	-1.5/-3.5	-1.0	20.0	-150	-10	330
ZVP3306F	-60	-90	-1.6	-1.5/-3.5	-1.0	14.0	-200	-10	330
BSS84	-50	-130	-0.52	-0.8/-2.0	-1.0	10.0	-100	-5	360
BS250F	-45	-90	-1.6	-1.0/-3.5	-1.0	14.0	-200	-10	330

SOT23



C:1) HYPERABRUPT TUNER DIODES

The high performance hyper-abrupt tuning diodes listed in this table feature closely controlled C-V characteristics and high Q

Pinout : 1-Cathode, 3-Anode

Type	Reverse Breakdown Voltage	Nominal Capacitance at V_R=2V, f=1MHz C_{tot}			Capacitance Ratio at f=1MHz C_2/C_{20}		Q at V_R=3V f=50MHz	P_{tot}
	V_R V	Min pF	Typ pF	Max pF	Min	Max	Typ	mW
ZC830A	25	9.0	10.0	11.0	4.5	6.0	300	330
ZC831A	25	13.5	15.0	16.5	4.5	6.0	300	330
ZC832A	25	19.8	22.0	24.2	5.0	6.5	200	330
ZC833A	25	29.7	33.0	36.3	5.0	6.5	200	330
ZC834A	25	42.3	47.0	51.7	5.0	6.5	200	330
ZC835A	25	61.2	68.0	74.8	5.0	6.5	100	330
ZC836A	25	90.0	100.0	110.0	5.0	6.5	100	330

Devices are also available with 5% and 20% tolerances. No suffix = ± 20% (eg. ZC830)
Suffix B = ± 5% (eg. ZC830B)

LATE ADDITION

(Not fully referenced within this databook)

HYPERABRUPT TUNER DIODES (DUAL)

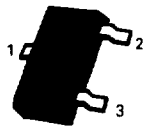
This high performance Dual hyper-abrupt tuning diode listed in the table below features closely controlled C-V characteristics and high Q

Pinout : Common Cathode

Part mark Detail: C2A

Type	Reverse Breakdown Voltage	Nominal Capacitance at V_R=2V, f=1MHz C_{tot}			Capacitance Ratio at f=1MHz C_2/C_{20}		Q at V_R=3V f=50MHz	P_{tot}
	V_R V	Min pF	Typ pF	Max pF	Min	Max	Typ	mW
ZDC833A	25	29.7	33	36.3	5.0	6.5	200	330

SOT23



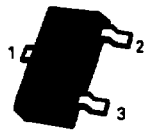
C:2) HYPERABRUPT TUNER DIODES

This series of low voltage octave tuning or hyperabrupt diodes are particularly suited to applications where the bias voltage range is limited, as in battery powered systems.

Pinout : 1-Cathode, 3-Anode

Type	Breakdown Voltage	Capacitance @V_R=1Volts	Capacitance @V_R=2.5 Volts		Capacitance @V_R=4 Volts	Figure of merit minimum Q V_R=4 Volts, f=50MHz	P_{tot}
	V	Min. pF	Min. pF	Max. pF	Max. pF		mW
ZC930	12	8.70	4.30	5.50	2.90	350	330
ZC931	12	14.50	6.50	7.80	4.00	300	330
ZC932	12	17.00	8.50	10.50	5.50	200	330
ZC933	12	42.00	18.00	27.00	12.00	150	330
ZC933A	12	42.00	20.25	24.75	12.00	150	330
ZC934	12	95.00	40.00	65.00	25.00	80	330
ZC934A	12	95.00	47.25	57.75	25.00	80	330

SOT23



C:3) ABRUPT TUNER DIODES

The key features of the diodes listed in this table are achieved by the use of an efficient high concentration single diffusion which produces an abrupt C-V characteristics and very high Q

Pinout : 1-Cathode, 3-Anode

Type	Reverse breakdown voltage V_R	Nom. capacitance at V_R=4V, f=1MHz C_{tot} pF			Capacitance ratio f=1MHz C_2/C_{30}	Q at V_R=4V f=50MHz	P_{tot}
	Max V	min	typ	max	min	min	mW
FMMV2101	30	6.12	6.8	7.48	2.5	450	330
FMMV2103	30	9.0	10.0	11.0	2.6	400	330
FMMV2104	30	10.8	12.0	13.2	2.6	400	330
FMMV2105	30	13.5	15.0	16.5	2.6	400	330
FMMV2107	30	19.8	22.0	24.2	2.7	350	330
FMMV2108	30	24.3	27.0	29.7	2.7	300	330
FMMV2109	30	29.7	33.0	36.3	2.7	280	330

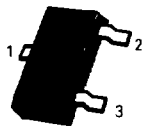
* selected device range offered, only

C:4) TUNER DIODES

Pinout : 1-Cathode, 3-Anode

Type	Reverse Breakdown Voltage	Nominal Capacitance at f=1MHz C_{tot}			Capacitance Ratio at f=1MHz C_3/C_{25}	Q at V_R=3V f=50MHz	P_{tot}
	V_R V	Min pF	Max pF	at V_R V	Min/Typ/Max	Typ	mW
BBY31	28	1.8	2.8	25	–/5.0/-	–	330
BBY40	28	26.0 4.3	32.0 6.0	3 25	5.0/-/6.5	–	330
FMMV105G	30	1.8	2.8	25	4.0/-/6.0	350	330
FMMV109	30	26.0	32.0	3	5.0/-/6.5	250	330
FMMV3102	30	20.0	25.0	3	4.5/-/-	300	330

SOT23



The tables C:5) and C:6) contain the available range of Schottky diodes both dual and single pin configurations. These diodes have varied application uses including signal switching and conditioning, RF mixers, SCSI terminations, DC-DC conversion and Smps.

C:5) DUAL SCHOTTKY BARRIER DIODES

Type	V_{BR} at I_R=10µA Min V	V_F at I_F=1mA Max mV	I_R Max nA	I_R V_R V	I_F at V_F=1V Min mA	C_T at V_R=0V f=1MHz Max pF	Pin Out Details	P_{tot} mW
BAS70-04	70	410	200	50	15	2.0	Series	330
BAS70-05	70	410	200	50	15	2.0	Com.Cathode	330
BAS70-06	70	410	200	50	15	2.0	Com. Anode	330
BAT54A	30	320	4000	25	200	10	Com. Anode	330
BAT54C	30	320	4000	25	200	10	Com.Cathode	330
BAT54S	30	320	4000	25	200	10	Series	330
ZC2812E	15	410	100	10	20	1.2	Series	330
ZC2813E	15	410	100	10	20	1.2	Com. Anode	330

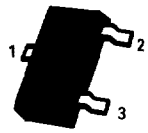
Refer to specific datasheet to confirm Pin configuration Details

C:6) SCHOTTKY BARRIER DIODES

Pinout : 1-Cathode, 3-Anode

Type	V_{BR} at I_R=10µA Min V	V_F at I_F=1mA Max mV	I_R Max nA	I_R V_R V	I_F at V_F=1V Min mA	C_T at V_R=0V f=1MHz max pF	P_{tot} mW
ZC2800E	70	410	200	50	15	2.0	330
ZC5800E	50	410	200	35	15	2.0	330
BAT54	30	320	4000	25	200	10	330
ZC2811E	15	410	100	10	20	1.2	330

SOT23



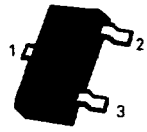
C:7) LOW LEAKAGE DUAL DIODES

Exhibiting reverse leakage levels of pico Amps these diodes are ideally suited for use with precision level clamping and rectification products, peak detectors, logarithmic feedback elements and analogue switching networks.

Type	V_{RRM} Max V	$I_{F(AV)}$ Max mA	I_{FSM} Max A	V_F at I_F=200mA Max V	t_{rr} Max ns	t_{fr} Max ns	I_R at V_{RRM} Typ pA	P_{tot} mW	Pin Out Details
FLLD258	100	250	3	1.4	400	10	25	330	Common Cathode
FLLD261	100	250	3	1.4	400	10	25	330	Series
FLLD263	100	250	3	1.4	400	10	25	330	Common Anode

Refer to specific datasheet to confirm Pin configuration Details

SOT23



OTHER SMALL SIGNAL DEVICES SUPPLIED (LISTING ONLY)

C:8a) SWITCHING DIODES

Pinout : See table below

DUAL		
Type	Pin Out Details	Ratings V_R V
HD2A	Common Cathode	75
FMMD2838	Common Cathode	75
FMMD6100	Common Cathode	70
BAV70	Common Cathode	70
BAV74	Common Cathode	50
FMMD2837	Common Cathode	35
BAV99	Series Connection	70
FMMD7000	Series Connection	70
HD4A	Common Anode	75
FMMD2836	Common Anode	75
BAW56	Common Anode	70
BAW74	Common Anode	50
FMMD2835	Common Anode	35

C:8b) SWITCHING DIODES

Pinout : 1- Cathode, 3 - Anode

SINGLE	
Type	Ratings V_R V
BAS21	200
BAS20	150
BAS19	100
BAS16	75
FMMD914	75
HD3A	75
BAL99	70
BAR99	70
BAL74	50
BAR74	50
FMMD6050	70

C:8c) ZENER DIODES

Pinout : 1- Cathode, 3 - Anode

Type	Description	Voltage Rating
BZX84 SERIES	Single Diode	2V7 to 47V
FMMZ5232-5257	Single Diode	5V6 to 33V

Datasheets are available upon request for device types appearing in tables C:8a), C:8b) and C:8c)

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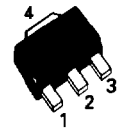
The range of 1 watt rated transistors listed in tables D:1) and D:2) include many types featuring specification combinations of high current, high h_{FE} and low saturation voltage. These features ensure suitability for wide ranging applications including lighting, telecoms, metering equipment, DC motors and general load driving functions.

D:1) NPN HIGH PERFORMANCE MEDIUM POWER TRANSISTORS (P_D=1W)

Pinout : 1-Base, 2 & 4 - Collector, 3- Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	h_{FE}		$V_{CE(sat)}$		f_T
	V	V	mA	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz
FCX458	400	400	225	100/300	50/10	0.5	50/6	50
BST 39	400	350	500	40/-	20/10	0.5	50/4	70
SXTA42	300	300	500	40/-	30/10	0.5	20/2	50
BF620	300	300	50	50/-	25/20	0.6	30/5	100
BFN18	300	300	200	30/-	30/10	0.5	20/2	70
BST40	300	250	500	40/-	20/10	0.5	50/4	70
BF622	250	250	50	50/-	25/20	0.6	30/5	60
BFN16	250	250	200	40/-	30/10	0.4	20/2	70
FCX495	170	150	1000	100/300	250/10	0.3	500/50	100
FCX493	120	100	1000	100/300	250/10	0.3	500/50	150
BCX56	100	80	1000	40/250	150/2	0.5	500/50	150
BSR43	90	80	1000	100/300	100/5	0.5	500/50	100
BSR42	90	80	1000	40/120	100/5	0.5	500/50	100
FCX491	80	60	1000	100/300	500/5	0.5	1000/100	150
BSR41	70	60	1000	100/300	100/5	0.5	500/50	100
BSR40	70	60	1000	40/120	100/5	0.5	500/50	100
BCX55	60	60	1000	40/250	150/2	0.5	500/50	150
BCX54	45	45	1000	40/250	150/2	0.5	500/50	150
FCX491A	40	40	1000	300/900	500/5	0.5	1000/100	150
BC868	25	20	1000	85/375	500/1	0.5	1000/100	60
BCX68	25	20	1000	85/375	500/1	0.5	1000/100	100

SOT89



D:2) PNP HIGH PERFORMANCE MEDIUM POWER TRANSISTORS (P_D=1W)

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	h_{FE}		$V_{CE(sat)}$		f_T
	V	V	mA	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz
FCX558	-400	-400	-200	100/300	-50/-10	-0.5	-50/-6	50
BST16	-350	-300	-500	30/150	-50/-10	-2.0	-50/-5	15
SXTA92	-300	-300	-500	25/-	-30/-10	-0.5	-20/-2	50
BF621	-300	-300	-50	50/-	-25/-20	-0.6	-30/-5	100
BFN19	-300	-300	-200	30/-	-30/-10	-0.5	-20/-2	100
BFN17	-250	-250	-200	40/-	-30/-10	-0.4	-20/-2	100
BF623	-250	-250	-50	50/-	-25/-20	-0.6	-30/-5	100
FCX596	-220	-200	-300	85/300	-250/-10	-0.35	-250/-25	150
BST15	-200	-200	-500	30/150	-50/-10	-2.0	-50/-5	15
FCX593	-120	-100	-1000	100/300	-500/-5	-0.3	-500/-50	50
BCX53	-100	-80	-1000	40/250	-150/-2	-0.5	-500/-50	150
BSR33	-90	-80	-1000	100/300	-100/-5	-0.5	-500/-50	100
FCX591	-80	-60	-1000	100/300	-500/-5	-0.6	-1000/-100	150
BSR31	-70	-60	-1000	100/300	-100/-5	-0.5	-500/-50	100
BSR30	-70	-60	-1000	40/120	-100/-5	-0.5	-500/-50	100
BCX52	-60	-60	-1000	40/250	-150/-2	-0.5	-500/-50	150
BCX51	-45	-45	-1000	40/250	-150/-2	-0.5	-500/-50	150
FCX591A	-40	-40	-1000	250/-	-500/-5	-0.5	-1000/-100	150
FCX589	-50	-30	-1000	100/300	-500/-2	-0.35	-1000/-100	100
BC869	-25	-20	-1000	85/375	-500/-1	-0.5	-1000/-100	60
BCX69	-25	-20	-1000	85/375	-500/-1	-0.5	-1000/-100	100

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D:3) DARLINGTONS (P_D=1W)

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	h_{FE}		$V_{CE(sat)}$		f_T
	V	V	mA	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz
NPN								
BST 52	90	80	500	2,000	500/10	1.3	500/0.5	150
BST 51	80	60	500	2,000	500/10	1.3	500/0.5	150
BCV49	80	60	500	10,000	100/5	1.0	100/0.1	150
BCV29	40	30	500	20,000	100/5	1.0	100/0.1	150
PNP								
BST 62-70	-85	-72	-500	2,000	-500/-10	-1.3	-500/-0.5	200
BST 61	-80	-60	-500	2,000	-500/-10	-1.3	-500/-0.5	200
BCV48	-80	-60	-500	10,000	-100/-5	-1.0	-100/-0.1	200
BCV28	-40	-30	-500	20,000	-100/-5	-1.0	-100/-0.1	200

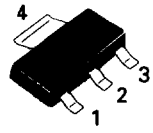
E:1) ZENER DIODES (P_D=1W)

Pinout: 1 & 3-Anode, 2&4-cathode

Type	RANGE	Voltage Tolerance	I_{FRM}
	V	%	mA
BZV49C	3V9 to 43V	5	200

Selected range only, offered.

SOT223



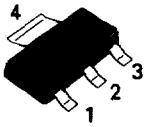
F:1) HIGH CURRENT (HIGH PERFORMANCE) TRANSISTORS (P_{tot}=3W)

This series of SOT223 packaged devices offer designers the lowest onstate losses $V_{CE(sat)}$ and continuous pulsed current capability available from Bipolar transistors. This performance is achieved by utilising the large die size, double emitter bonded matrix transistor technology. Typical applications to benefit are, inverters for lighting, LCD backlighting, automotive and flashgun converters.

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT857	350	300	**3.5**	**3.0**	100/300	500/10	0.23	2000/200	80	FZT957
FZT855	250	150	**5.0**	**3.0**	100/300	1000/5	0.11	1000/100	90	FZT955
FZT853	200	100	**6.0**	**3.0**	100/300	2000/2	0.15	2000/100	130	FZT953
FZT851	150	60	**6.0**	**3.0**	100/300	2000/1	0.17	2000/50	130	FZT951
FZT869	80	25	**6.5**	**3.0**	300/-	1000/1	0.215	2000/10	100	-
FZT849	80	30	**7.0**	**3.0**	100/300	1000/1	0.215	2000/20	100	FZT949
PNP										
FZT958	-400	-400	**-0.5**	**3.0**	100/300	-500/-10	-0.45	-500/-100	85	-
FZT957	-300	-300	**-1.0**	**3.0**	100/300	-500/-10	-0.24	-1000/-300	85	FZT857
FZT956	-220	-200	**-2.0**	**3.0**	100/300	-1000/-5	-0.165	-1000/-100	110	-
FZT955	-180	-140	**-4.0**	**3.0**	100/300	-1000/-5	-0.15	-1000/-100	110	FZT855
FZT953	-140	-100	**-5.0**	**3.0**	100/300	-1000/-1	-0.22	-2000/-200	125	FZT853
FZT951	-100	-60	**-5.0**	**3.0**	100/300	-2000/-1	-0.21	-2000/-200	120	FZT851
FZT949	-50	-30	**-5.5**	**3.0**	100/300	-1000/-1	-0.27	-2000/-200	100	FZT849
FZT948	-40	-20	**-6.0**	**3.0**	100/300	-1000/-1	-0.18	-2000/-200	80	-
FZT968	-15	-12	**-6.0**	**3.0**	300/1000	-500/-1	-0.17	-2000/-50	80	-

SOT223



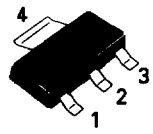
F:2) HIGH GAIN (HIGH PERFORMANCE) TRANSISTORS (P_{tot}=2W)

Utilising an enhanced emitter process has yielded a super-B (high gain) technology represented by the devices listed in table F:2) which enable cost effective replacement of MOSFETs. Applications where these types can be most beneficially used include, emergency lighting, siren drivers, lamp matrix and small DC motor drivers.

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT696B	180	180	0.5	2.0	**500/-**	100/5	0.25	200/5	70	FZT796A
FZT694B	120	120	1.0	2.0	**400/-**	200/2	0.5	400/0.5	130	FZT795A
FZT692B	70	70	2.0	2.0	**400/-**	500/2	0.5	2000/200	150	FZT792A
FZT690B	45	45	3.0	2.0	**400/-**	1000/2	0.5	1000/5	150	FZT790A
FZT689B	20	20	3.0	2.0	**400/-**	2000/2	0.45	3000/20	150	FZT789A
FZT688B	12	12	4.0	2.0	**400/-**	3000/2	0.35	3000/20	150	FZT788B
PNP										
FZT796A	-200	-200	-0.5	2.0	**250/-**	-300/-10	-0.3	-100/-5	100	FZT696B
FZT795A	-140	-140	-0.5	2.0	**250/-**	-200/-2	-0.3	-200/-5	100	FZT694B
FZT792A	-75	-70	-2.0	2.0	**250/-**	-500/-2	-0.5	-1000/-25	100	FZT692B
FZT790A	-50	-40	-3.0	2.0	**250/-**	-500/-2	-0.45	-1000/-10	100	FZT690B
FZT789A	-25	-25	-3.0	2.0	**250/-**	-1000/-2	-0.45	-2000/-20	100	FZT689B
FZT788B	-15	-15	-3.0	2.0	**300/-**	-2000/-2	-0.45	-2000/-10	100	FZT688B

SOT223



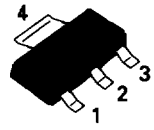
F:3) HIGH PERFORMANCE TRANSISTORS (P_{tot}=2W)

This range of high performance transistors can benefit many circuit functions such as DC-DC conversion, general load drive applications and audio amplification pre-driver stages.

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT653	120	100	2.0	2.0	100/300	500/2	0.3	1000/100	175	FZT753
					25/-	2000/2	0.5	2000/200		
FZT651	80	60	3.0	2.0	100/300	500/2	0.3	1000/100	175	FZT751
					40/-	2000/2	0.6	3000/300		
FZT649	35	25	3.0	2.0	100/300	1000/2	0.3	1000/100	240	FZT749
					15/-	6000/2	0.6	3000/300		
PNP										
FZT753	-120	-100	-2.0	2.0	100/300	-500/-2	-0.3	-1000/-100	140	FZT653
					25/-	-2000/-2	-0.5	-2000/-200		
FZT751	-80	-60	-3.0	2.0	80/-	-1000/-2	-0.3	-1000/-100	140	FZT651
					40/-	-2000/-2	-0.6	-3000/-300		
FZT749	-35	-25	-3.0	2.0	100/300	-1000/-2	-0.3	-1000/-100	160	FZT649
					15/-	-6000/-2	-0.6	-3000/-300		

SOT223



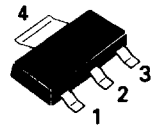
F:4) HIGH VOLTAGE TRANSISTORS (P_{tot}=2W)

The transistors listed in this table benefit applications including, lighting, telecoms, automotive signal conditioning, metering and audio equipment.

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
					Min/Max	at I_C/V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
	V	V	A	W						
NPN										
FZT658	400	400	0.5	2.0	50/-	100/5	0.5	100/10	50	FZT758
FZT458	400	400	0.3	2.0	100/300	50/10	0.5	50/6	50	FZT558
BSP19	400	350	0.5	2.0	50/-	100/5	0.5	50/4	70	BSP16
FZT657	300	300	0.5	2.0	50/-	100/5	0.5	100/10	30	FZT757
BFN38	300	300	0.5	2.0	30/-	30/10	0.5	20/2	70	BFN39
FZTA42	300	300	0.5	2.0	40/-	30/10	0.5	20/2	50	FZTA92
BSP20	300	250	0.5	2.0	30/200	30/10	0.5	50/4	40	BSP15
BF720	300	300	0.05	2.0	50/-	25/20	0.6	30/5	100	BF721
BF722	250	250	0.05	2.0	50/-	25/20	0.6	30/5	100	BF723
BFN36	250	250	0.5	2.0	40/-	30/10	0.4	20/2	70	BFN37
FZT696B	180	180	0.5	2.0	500/-	100/5	0.25	200/5	70	FZT796A
FZT655	150	150	1.0	2.0	50/-	500/5	0.5	500/50	30	FZT755
FZT694B	120	120	1.0	2.0	400/-	200/2	0.25	100/0.5	130	FZT795A
PNP										
FZT758	-400	-400	-0.5	2.0	50/-	-100/-5	-0.5	-100/-10	50	FZT658
FZT558	-400	-400	-0.2	2.0	100/300	-50/-10	-0.5	-50/-6	50	FZT458
BSP16	-350	-300	-0.5	2.0	30/120	-50/-10	-0.5	-30/-3	15	BSP19
FZT757	-300	-300	-0.5	2.0	50/-	-100/-5	-0.5	-100/-10	30	FZT657
BFN39	-300	-300	-0.5	2.0	30/-	-30/-10	-0.5	-20/-2	100	BFN38
FZTA92	-300	-300	-0.5	2.0	25/-	-30/-10	-0.5	-20/-2	50	FZTA42
BF721	-300	-300	-0.05	2.0	50/-	-25/-20	-0.6	-30/-5	100	BF720
BFN37	-250	-250	-0.5	2.0	40/-	-30/-10	-0.4	-20/-2	100	BFN36
BF723	-250	-250	-0.05	2.0	50/-	25/20	-0.6	-30/-5	100	BF722
FZT796A	-200	-200	-0.5	2.0	250/-	-300/-10	-0.3	-200/-20	100	FZT696B
BSP15	-200	-200	-0.5	2.0	30/150	-50/-10	-0.5	-30/-3	15	BSP20
FZT755	-150	-150	-1.0	2.0	50/-	-500/-5	-0.5	-500/-50	30	FZT655
FZT795A	-140	-140	-0.5	2.0	250/-	-200/-2	-0.3	-200/-5	100	FZT694B

SOT223



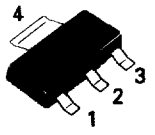
F:5) HIGH PERFORMANCE DARLINGTON TRANSISTORS (P_{tot}=2W)

This range of high performance Darlingtons offer larger package replacement and are typically used with logic to load interface circuits, relays, solenoids lamp and motor drivers.

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT600	160	140	2.0	2.0	1K/-	1000/10	1.2	1000/10	250 -	-
					2K/100K	500/10				
FZT605	140	120	2.0	2.0	5K/-	500/5	1.0	250/0.25	150	FZT705
					2K/100K	1000/5	1.5	1000/1.0		
FZT604	120	100	2.0	2.0	5K/-	500/5	1.0	250/0.25	150	FZT704
					2K/100K	1000/5	1.5	1000/1.0		
FZT603	100	80	2.0	2.0	5K/100K	500/5	1.0	1000/1.0	150	-
					2K/10K	2000/5	0.9	400/0.4		
FZTA14	30	30	1.0	2.0	20K/ -	100/5	1.5	100/0.1	170	FZTA64
					5K/-	1000/5	1.6	1000/1.0		
PNP										
FZT705	-140	-120	-2.0	2.0	3K/30K	-1000/-5	-1.3	-1000/-1.0	100	FZT605
					2K/-	-2000/-5	-2.5	-2000/-2.0		
FZT704	-120	-100	-2.0	2.0	3K/30K	-1000/-5	-1.3	-1000/-1.0	160	FZT604
					2K/-	-2000/-5	-2.5	-2000/-2.0		
FZTA63	-30	-30	-0.5	2.0	5K/-	-10/-5	-1.5	-100/-0.1	125	-
					10K/-	-100/-5				
FZTA64	-30	-30	-0.5	2.0	10K/-	-10/-5	-1.5	-100/-0.1	125	FZTA14
					20K/-	-100/-5				

SOT223

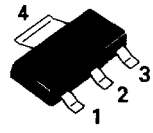


F:6) MEDIUM POWER TRANSISTORS (P_{tot} =2W)

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT493	120	100	1.0	2.0	100/300	250/10	0.3	500/50	150	FZT593
BCP56	100	80	1.0	2.0	40/250	150/2	0.5	500/50	100	BCP53
BSP43	90	80	1.0	2.0	100/300	100/5	0.25	150/15	100	BSP33
BSP42	90	80	1.0	2.0	40/120	100/5	0.25	150/15	100	-
FZT491	80	60	1.0	2.0	100/300	500/5	0.25	500/50	150	FZT591
BSP41	70	60	1.0	2.0	100/300	100/5	0.25	150/15	100	BSP31
BSP40	70	60	1.0	2.0	40/120	100/5	0.25	150/15	100	-
BCP55	60	60	1.0	2.0	40/250	150/2	0.5	500/50	100	BCP52
BCP54	45	45	1.0	2.0	40/250	150/2	0.5	500/50	100	BCP51
FZT489	50	30	1.0	2.0	100/300	1000/2	0.3	1000/100	150	FZT589
BCP68	25	20	1.0	2.0	63/400	500/1	0.5	1000/100	100	BCP69
PNP										
FZT593	-120	-100	-1.0	2.0	100/300	-500/-5	-0.3	-500/-50	50	FZT493
BCP53	-100	-80	-1.0	2.0	40/250	-150/-2	-0.5	-500/-50	125	BCP56
BSP33	-90	-80	-1.0	2.0	100/300	-100/-10	-0.25	-150/-15	100	BSP43
FZT591	-80	-60	-1.0	2.0	100/300	-500/-5	-0.3	-500/-50	150	FZT491
BSP31	-70	-60	-1.0	2.0	100/300	-100/-10	-0.25	-150/-15	100	BSP41
BCP52	-60	-60	-1.0	2.0	40/250	-150/-2	-0.5	-500/-50	125	BCP55
BCP51	-45	-45	-1.0	2.0	40/250	-150/-2	-0.5	-500/-50	125	BCP54
FZT589	-50	-30	-1.0	2.0	100/300	-500/-2	-0.35	-1000/-100	100	FZT489
FZT549	-35	-30	-1.0	2.0	100/300	-500/-2	-0.5	-1000/-100	100	–
BCP69	-25	-20	-1.0	2.0	63/400	-500/-1	-0.5	-1000/-100	100	BCP68

SOT223

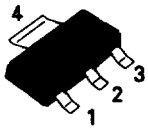


F:7) SWITCHING TRANSISTORS

Pinout : 1-Base, 2 & 4 - Collector, 3-Emitter

Type	V_{CBO}	V_{CEO}	$I_{C(cont)}$	P_{tot}	h_{FE}		$V_{CE(sat)}$		f_T	
	V	V	A	W	Min/Max	at I_C / V_{CE} mA / V	Max V	at I_C / I_B mA	Typ MHz	Compl-ement
NPN										
FZT2222A	75	40	0.6	1.5	100/300	150/10	0.4	150/15	250	FZT2907A
PNP										
FZT2907A	-60	-60	-0.6	1.5	100/300	-150/-10	-0.4	-150/-15	200	FZT2222A
FZT4403	-40	-40	-0.6	1.5	100/300	-150/-2	-0.4	-150/-15	200	–

SOT223



G:1) MOSFET TRANSISTORS (LOW $R_{DS(ON)}$)

These Mosfets are suitable for many load drive applications proving particularly benificial in automotive and DC-DC conversion circuits.

Pinout : 1-Gate, 2&4-Drain, 3-Source

Type	BV_{DSS}	I_D	I_{DM}	P_{tot}	$V_{GS(th)}$			$R_{DS(ON)}$		
					Min	Max	at I_D	Max	I_D	V_{GS}
	V	A	A	W	V	V	mA	Ω	A	V
ZVN4306G	60	2.1	15	**3.0**	1.3	3.0	1.0	**0.33**	3.0	10
ZVN4310G	100	1.7	12	**3.0**	1.0	3.0	1.0	**0.54**	3.3	10

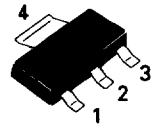
G:2) AVALANCHE MOSFET

The ZVN4206GV Mosfet is processed and characterised specifically to allow it to absorb energy in the breakdown/avalanche region. This feature allows it to drive relays and similar inductive loads without the usual additional diode transient protection.

Pinout : 1-Gate, 2&4-Drain, 3-Source

Type	BV_{DSS}	I_D	I_{DM}	P_{tot}	$V_{GS(th)}$			$R_{DS(ON)}$			I_{AR}	E_{AR}
					Min	Max	at I_D	Max	I_D	V_{GS}		
	V	A	A	W	V	V	mA	Ω	A	V	mA	mJ
ZVN4206GV	60	1.0	8	**2.0**	1.3	3.0	1.0	**1.0**	1.5	10	600	5

SOT223



G:3a) MOSFET TRANSISTORS (N-Channel)

Pinout : 1-Gate, 2&4-Drain, 3-Source

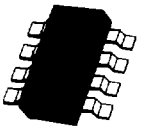
Type	BV_{DSS}	I_D	I_{DM}	P_{tot}	$V_{GS(th)}$			$R_{DS(ON)}$			Comple-ment
	V	A	A	W	Min V	Max V	at I_D mA	Max Ω	I_D A	V_{GS} V	
ZVN0545G	450	0.14	0.6	2.0	1.0	3.0	1.0	50.0	0.1	10	–
ZVN4424G	240	0.5	1.5	2.5	0.8	1.8	1.0	6.0	0.1	2.5	ZVP4424G
BSP89	240	0.34	1.0	2.0	0.8	2.0	1.0	6.0	0.34	10	–
ZVN2120G	200	0.32	2.0	2.0	1.0	3.0	1.0	10.0	0.25	10	ZVP2120G
ZVNL120G	200	0.32	2.0	2.0	0.5	1.5	1.0	10.0	0.125	3.0	–
BSP120	200	0.25	0.8	2.0	0.8	2.8	1.0	12.0	0.25	10	–
ZVNL110G	100	0.6	6.0	2.0	0.75	1.5	1.0	4.5	0.25	5.0	–
ZVN4210G	100	0.8	6.0	2.0	0.8	2.4	1.0	1.5	1.5	10	–
ZVN2110G	100	0.5	6.0	2.0	0.8	2.4	1.0	4.0	1.0	10	ZVP2110G
ZVN4206G	60	1.0	8.0	2.0	1.3	3.0	1.0	1.0	1.5	10	–
ZVN2106G	60	0.7	8.0	2.0	0.8	2.4	1.0	2.0	1.0	10	ZVP2106G

G:3b) MOSFET TRANSISTORS (P-Channel)

Pinout : 1-Gate, 2&4-Drain, 3-Source

Type	BV_{DSS}	I_D	I_{DM}	P_{tot}	$V_{GS(th)}$			$R_{DS(ON)}$			Comple-ment
	V	A	A	W	Min V	Max V	at I_D mA	Max Ω	I_D A	V_{GS} V	
ZVP4424G	-240	-0.48	-1.0	2.5	-0.7	-2.0	-1.0	11.0	-0.1	-3.5	ZVN4424G
ZVP2120G	-200	-0.2	-1.2	2.0	-1.5	-3.5	-1.0	25.0	-0.15	-10	ZVN2120G
ZVP2110G	-100	-0.31	-3.0	2.0	-1.5	-3.5	-1.0	8.0	-0.375	-10	ZVN2110G
ZVP2106G	-60	-0.45	-4.0	2.0	-1.5	-3.5	-1.0	5.0	-0.5	-10	ZVN2106G

SM8



Introduction

To meet the market requirement of smaller, less expensive end-products, a prime objective has been to reduce PCB sizes, the workload of auto-placement equipment and thus as a consequence overall production costs. To enable this transition, manufacturers of electronic components are developing smaller packages and packages containing more than one device, thereby increasing overall functionality.

In line with these demands Zetex has introduced the SM-8 surface mount package. Evolving from the industry standard SOT223 outline, the SM-8 package features a unique lead frame design which serves to increase the number of packaged components from one to two, whilst maintaining the existing physical profile of the standard outline.

The following four tables include device types representing examples of the Bipolar and MOSFET chip combinations that can be supplied in SM-8 (many more are possible). All are high performance types offering designers the potential for significant circuit loss reduction and board space savings; proving benificial in a wide range of applications including : mobile telephones, small P.S.U.s, L.C.D. backlighting, emergency lighting and DC motor drivers.

The range will be extended as market opportunities for new device combinations are identified and validated.

H:1) DUAL N-CHANNEL MOSFETS

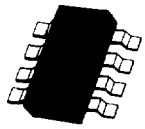
Type	BV_{DSS}	I_D	I_{DM}	$V_{GS(th)}$		@	$R_{DS(on)}$	@	
	V	A	A	min V	max V	I_D mA	max Ω	V_{GS} V	I_D A
ZDM4206N	60	1.0	8	1.3	3	1	1.0	10	1.5
ZDM4306N	60	1.3	15	1.3	3	1	0.33	10	3.0

H:2) DUAL PNP TRANSISTORS

Type	V_{CEO}	V_{CBO}	$I_{C(cont)}$	I_{CM}	$V_{CE(sat)}$			h_{FE}		
	V	V	A	A	max mV	I_C A	I_B mA	min	I_C A	V_{CE} V
ZDT717	-12	-12	-2.5	-10	-220	-2.5	-50	180	-2.5	-2
ZDT749	-25	-35	-2	-6	-500	-2	-200	75	-2	-2
ZDT705*	-120	-140	-1	-4	-1.3	-1	-1	3000	-1	-5
ZDT758	-400	-400	-0.5	-1	-0.5	-0.1	-10	50	-0.1	-5

* Darlington Transistors

SM8



H:3) DUAL NPN TRANSISTORS

Type	V_{CEO}	V_{CBO}	$I_{C(cont)}$	I_{CM}	$V_{CE(sat)}$			h_{FE}		
	V	V	A	A	max mV	I_C A	I_B mA	min	I_C A	V_{CE} V
ZDT617	15	15	3	12	200	3	50	200	3	2
ZDT1048	17.5	50	5	20	240	5	100	250	5	2
ZDT649	25	35	2	6	500	2	200	75	2	2
ZDT1049	25	80	5	20	220	4	50	200	4	2
ZDT690	45	45	2	6	500	1	5	400	1	2
ZDT619	50	50	2	6	220	2	50	200	1	2
ZDT651	60	80	2	6	500	2	200	80	1	2
ZDT1053	75	150	5	20	350	5	250	300	1	2
ZDT694	120	120	0.5	1	500	0.4	5	400	0.2	2
ZDT605 *	120	140	1	4	1500	1	1	2000	1	5

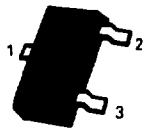
* Darlington Transistors

H:4) NPN/PNP TRANSISTOR COMBINATIONS

Type	Pol.	V_{CEO}	V_{CBO}	$I_{C(cont)}$	I_{CM}	$V_{CE(sat)}$			h_{FE}		
		V	V	A	A	max mV	I_C A	I_B mA	min	I_C A	V_{CE} V
ZDT6718	NPN	20	20	2.0	6	200	2.5	50	200	2.0	2
	PNP	-20	-20	-1.5	-6	-220	-1.5	-50	150	-2.0	-2
ZDT6790	NPN	45	45	2.0	6	500	1.0	5	150	2.0	2
	PNP	-40	-50	-2.0	-6	-450	-1.0	-10	150	-2.0	-2
ZDT6702*	NPN	60	80	2.0	4	1200	2.0	2	2000	2.0	3
	PNP	-60	-80	-2.0	-4	-1200	-2.0	-2	2000	-2.0	-3
ZDT6753	NPN	100	120	2.0	6	500	2.0	200	100	0.5	2
	PNP	-100	-120	-2.0	-6	-500	-2.0	-200	100	-0.5	-2
ZDT6705*	NPN	120	140	1.0	4	1500	1.0	1	2000	1.0	1
	PNP	-120	-140	-1.0	-4	1300	-1.0	-1	3000	-1.0	-1
ZDT6757	NPN	300	300	0.5	1	500	0.1	10	50	0.1	5
	PNP	-300	-300	-0.5	-1	-500	-0.1	-10	50	-0.1	-5

* Darlington Transistors

SOT23



ADVANCED INFORMATION

J:1a) HIGH CURRENT SCHOTTKY BARRIER DIODE (1A)

Pinout : 1-Cathode, 3-Anode

Type	V_{BR} at I_R=100μA Min V	V_F at I_F=500mA Max mV	V_F at I_F=1A Max mV	I_R @ Max μA	I_R @ V_R V	I_{FSM} Max mA	C_D at V_R=25V f=1MHz Typ pF	P_{tot} mW
ZHCS1000	30	355	440	150	30	12000	25	500

This device is currently being developed. Availability of samples and production volumes is scheduled for Q4 1996

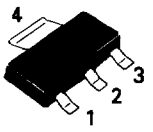
J:1b) HIGH CURRENT SCHOTTKY BARRIER DIODE (750mA)

Pinout : 1-Cathode, 3-Anode

Type	V_{BR} at I_R=100μA Min V	V_F at I_F=500mA Max mV	V_F at I_F=1A Max mV	I_R @ Max μA	I_R @ V_R V	I_{FSM} Max mA	C_D at V_R=25V f=1MHz Typ pF	P_{tot} mW
ZHCS750	30	420	540	140	30	12000	25	500

This device will be available in production volumes from July 1996.

SOT223



ADVANCED INFORMATION

J:2) HIGH CURRENT HIGH GAIN TRANSISTORS (NPN)

Pinout : 1-Base, 2&4 - Collector, 3-Emitter

Type	V_{CBO} V	V_{CEO} V	$I_{C(cont)}$ A	P_{tot} W	h_{FE} Min/Max	h_{FE} at I_C / V_{CE} A / V	$V_{CE(sat)}$ Max mV	$V_{CE(sat)}$ at I_C/I_B mA	f_T Typ MHz
FZT1053	150	75	5	2.5	300 / 1200	1 / 2	150	1000 / 50	140
					30 / -	5 / 2	350	5000 / 250	
FZT1051	150	40	5	2.5	300 / 1200	1 / 2	110	1000 / 10	155
					190 / -	4 / 2	210	4000 / 100	
FZT1049	80	25	5	2.5	300 / 1200	1 / 2	80	1000 / 10	180
					200 / -	4 / 2	220	4000 / 50	
FZT1048	50	17.5	5	2.5	300 / 1200	1 / 2	75	1000 / 10	150
					250 / -	5 / 2	350	5000 / 20	

Devices in the above table are currently in development and are scheduled for availability (SOT223 Package) Q1 '97. Provisional datasheets can be supplied upon request.

SURFACE MOUNT DEVICES

Section 3