



Single BISS transistors
Double BISS transistors
BISS RETs
BISS loadswitches
BISS high voltage

Low V_{CEsat} (BISS) transistors selection guide

These Breakthrough In Small-Signal (BISS) transistors use low- V_{CEsat} technology and are optimized for reduced power consumption and small footprint. They are available in a broad variety for dedicated solutions, including an extensive portfolio of single and double transistors, loadswitch configurations, transistors with integrated resistors, and, most notably, high-voltage formats.

Key features

- ▶ Extensive range of BISS transistors
- ▶ Low collector-emitter saturation voltage V_{CEsat}
e.g. 235 mV @ 5.8 A
- ▶ Up to 5.8 A collector current capability IC
- ▶ Up to 15 A peak collector current ICM
- ▶ High current gain hFE, even at high IC
- ▶ High voltages up to 500V

Key benefits

- ▶ Reduced heat generation of applications
- ▶ Cost reduction
- ▶ Higher circuit efficiency
- ▶ Higher PCB function density
- ▶ Enables miniaturization of end products

Key examples

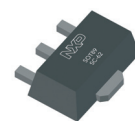
- ▶ Switch for vibrate, input-power in portable equipment
- ▶ Medium power peripheral drivers, e.g. fan, motor
- ▶ Strobe flash units for DSC and mobile phones
- ▶ Power switch for LAN and ADSL systems
- ▶ Inverter applications, e.g. TFT displays
- ▶ Medium power DC/DC conversion
- ▶ Battery chargers

Product highlights

- ▶ Smallest low V_{CEsat} transistor in the market in a SOT883 leadless package, 500mA, 15V and 40V ,
e. g. PBSS2515M
- ▶ 5.3 A series with 27 m Ω R_{CEsat} typ in SOT89 (SC-62) for DC/DC converter and power management functions, e.g. PBSS301NX
- ▶ 3rd generation 5.2 A, 60 V solution in medium power SOT223 (SC-73) package, e.g. PBSS304NZ



1.0 x 0.6 x 0.5 mm

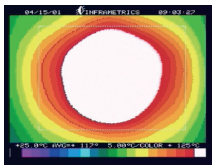


4.5 x 2.5 x 1.5 mm

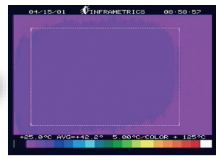


6.5 x 3.5 x 1.65 mm

65 % heat reduction by BISS transistors

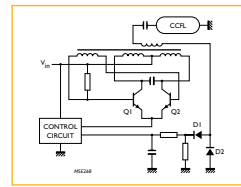


General purpose
transistor
 $T_s = 110^\circ\text{C}$

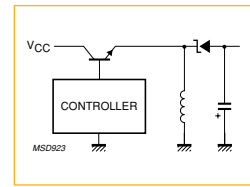


3rd generation BISS
transistor
 $T_s = 40^\circ\text{C}$

Application examples



CCFL converter
in TFT displays



DC/DC converter

Temperature profile of device surface (T_s). Comparison of a general purpose transistor and a 3rd generation BISS transistor.

Single low V_{CEsat} (BISS) transistors - NPN

V_{CE0} (V)	I_C (A)	I_{CM} (A)	h_{FE} min/typ	@ I_C (A)	@ V_{CE} (V)	R_{CEsat} typ (mΩ) @ I_C ; $I_C/I_B = 10$	R_{CEsat} typ (mΩ) @ $I_C = 0.5 \text{ A}$; $I_B = 0.05 \text{ A}$	V_{CEsat} max (mV)	@ I_C (A)	@ I_B (A)	Type	Package	Size (mm)	P_{tot} (mW) ¹⁾
15	0.5	1.0	200/325	0.01	2	360	-	250	0.5	0.05	PBSS2515M	SOT883	1.0 x 0.6	250
40	0.5	1.0	200/550	0.01	2	380	-	250	0.5	0.05	PBSS2540M	(SC-101)	x 0.5	
20	2.0	4.0	220/410	0.5	2	140	70	350	2	0.2	PBSS4220V	SOT666	1.6 x 1.2	500
40	1.0	3.0	300/-	0.5	5	150	70	440	2	0.2	PBSS4140V		x 0.55	
	2.0	3.0	300/400	0.5	5	150	70	400	2	0.2	PBSS4240V			
60	1.0	2.0	200/400	0.5	5	200	110	250	1	0.1	PBSS4160V			
15	0.5	1.0	200/425	0.01	2	300	200	250	0.5	0.05	PBSS2515E	SOT416	1.6 x 0.8	250
40	0.5	1.0	200/350	0.01	2	380	200	250	0.5	0.05	PBSS2540E	(SC-75)	x 0.77	
40	2.0	3.0	350/470	0.1	2	120	70	320	2	0.2	PBSS4240Y	SOT363	2.0 x 1.25	430
100	1.0	3.0	150/400	0.25	10	160	80	200	1	0.1	PBSS8110Y	(SC-88)	x 0.95	
40	1.0	2.0	300/440	0.5	5	240	120	500	1	0.1	PBSS4140U	SOT323	2.0 x 1.25	350
60	1.0	2.0	200/420	0.5	5	230	120	280	1	0.1	PBSS4160U	(SC-70)	x 0.95	
20	1.0	3.0	350/470	0.1	2	220	110	250	1	0.05	PBSS4120T	SOT23	2.9 x 1.3	480
	2.0	5.0	220/330	0.1	2	80	45	310	3	0.3	PBSS4320T		x 1.0	
30	1.0	3.0	300/450	0.5	2	240	120	270	1	0.05	PBSS4130T			
	2.0	3.0	300/450	0.5	2	120	70	320	2	0.2	PBSS4230T			
40	1.0	2.0	300/510	0.5	5	230	120	500	1	0.1	PMMT491A			
	2.0	2.0	300/420	0.5	5	150	130	500	1	0.1	PBSS4140T			
	2.0	3.0	300/450	0.5	2	120	70	320	2	0.2	PBSS4240T			
50	2.0	5.0	300/495	0.5	2	100	60	260	2	0.2	PBSS4350T			
60	1.0	2.0	200/350	0.5	5	200	110	250	1	0.1	PBSS4160T			
100	1.0	3.0	150/300	0.25	10	165	70	200	1	0.1	PBSS8110T			
20	4.0	15.0	300/450	0.5	2	50	30	280	4	0.4	PBSS301ND	SOT457	2.9 x 1.5	750
40	4.0	15.0	300/520	0.5	2	55	35	300	4	0.4	PBSS302ND		x 1.0	
50	3.0	5.0	200/280	0.5	2	110	65	290	2	0.2	PBSS4350D			
60	3.0	6.0	345/570	0.5	2	65	40	260	3	0.3	PBSS303ND			
80	3.0	6.0	240/360	0.5	2	67	40	255	3	0.3	PBSS304ND			
100	1.0	3.0	150/290	0.25	10	160	75	200	1	0.1	PBSS8110D			
	3.0	4.0	170/275	0.5	2	72	45	360	4	0.4	PBSS305ND			
12	5.3	10.6	300/530	0.5	2	27 ²⁾	18	200	5.3	0.265	PBSS301NX	SOT89	4.5 x 2.5	1650
20	3.0	5.0	220/390	0.5	2	85	45	310	3	0.3	PBSS4320X		x 1.5	
	5.0	10.0	300/450	0.5	2	32	35	220	5	0.5	PBSS4520X			
	5.3	10.6	300/570	0.5	2	27 ²⁾	20	200	5.3	0.265	PBSS302NX			
30	3.0	5.0	300/490	0.5	2	80	45	300	3	0.3	PBSS4330X			
	5.1	10.2	300/480	0.5	2	30 ²⁾	20	220	5.1	0.255	PBSS303NX			
40	4.0	10.0	300/500	0.5	2	40	21	355	5	0.5	PBSS4540X			
	2.0	5.0	300/-	0.5	2	160	90	320	2	0.2	PBSS4250X			
50	3.0	5.0	300/460	0.5	2	75	50	370	3	0.3	PBSS4350X			
	4.7	9.4	300/520	0.5	2	37 ²⁾	25	245	4.7	0.235	PBSS304NX			
80	4.0	10.0	250/400	0.5	2	43 ²⁾	25	230	4	0.2	PBSS4480X			
	4.6	9.2	300/470	0.5	2	37 ²⁾	25	240	4.6	0.23	PBSS305NX			
100	1.0	3.0	150/290	0.25	10	165	40	200	1	0.1	PBSS8110X			
	4.5	9.0	200/330	0.5	2	38 ²⁾	27	245	4.5	0.225	PBSS306NX			
12	5.8	11.6	300/530	0.5	2	29 ²⁾	18	235	5.8	0.29	PBSS301NZ	SOT223	6.5 x 3.5 x	1700
20	5.8	10.2	300/570	0.5	2	30 ²⁾	20	250	5.8	0.29	PBSS302NZ		1.65	
30	5.5	11.0	300/480	0.5	2	31 ²⁾	20	240	5.5	0.275	PBSS303NZ			
40	5.0	10.0	300/500	0.5	2	42	50	355	5	0.5	PBSS4540Z			
50	3.0	5.0	200/280	0.5	2	110	90	290	2	0.2	PBSS4350Z			
60	5.2	10.4	300/520	0.5	2	39 ²⁾	25	280	5.2	0.26	PBSS304NZ			
80	5.1	10.2	300/470	0.5	2	38 ²⁾	25	270	5.1	0.255	PBSS305NZ			
100	1.0	3.0	150/290	0.25	10	160	73	200	1	0.1	PBSS8110Z			
	5.1	10.2	200/330	0.5	2	43 ²⁾	27	300	5.1	0.255	PBSS306NZ			

¹⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm²

²⁾ $I_C/I_B = 20$

Single low V_{CEsat} (BISS) transistors - PNP

V_{CEO} (V)	I_C (A)	I_{CM} (A)	h_{FE} min/typ	@ I_C (A)	@ V_{CE} (V)	R_{CEsat} typ (m Ω) @ I_C ; $I_C/I_B = 10$	R_{CEsat} typ (mV) @ $I_C = 0.5$ A; $I_B = 0.05$ A	V_{CEsat} max (mV)	@ I_C (A)	@ I_B (A)	Type	Package	Size (mm)	P_{tot} (mW) ¹⁾
15	0.5	1.0	200/260	0.01	2	300	150	250	0.5	0.05	PBSS3515M	SOT883	1.0 x 0.6 x 0.5	250
40	0.5	1.0	200/380	0.01	2	440	220	350	0.5	0.05	PBSS3540M	(SC-101)		
20	2.0	4.0	220/440	0.1	2	140	75	390	2	0.2	PBSS5220V	SOT666	1.6 x 1.2 x 0.55	500
40	1.0	2.0	300/-	0.1	5	200	120	310	1	0.1	PBSS5140V			
	1.8	3.0	300/450	0.1	5	185	100	530	2	0.2	PBSS5240V			
60	1.0	2.0	150/250	0.5	5	220	120	330	1	0.1	PBSS5160V			
15	0.5	1.0	200/325	0.01	2	300	130	250	0.5	0.05	PBSS3515E	SOT416	1.6 x 0.8 x 0.77	250
40	0.5	1.0	200/380	0.01	2	440	230	350	0.5	0.05	PBSS3540E	(SC-75)		
40	2.0	3.0	300/-	0.1	2	200	110	350	2	0.2	PBSS5240Y	SOT363	2.0 x 1.25 x 0.95	430
100	1.0	3.0	150/-	0.25	5	170	93	320	1	0.1	PBSS9110Y	(SC-88)		
40	1.0	2.0	300/520	0.1	5	230	130	500	1	0.1	PBSS5140U	SOT323	2.0 x 1.25 x 0.95	350
60	1.0	2.0	150/250	0.5	5	255	135	340	1	0.1	PBSS5160U	(SC-70)		
20	1.0	2.0	300/450	0.1	2	250	125	250	1	0.05	PBSS5120T	SOT23	2.9 x 1.3 x 1.0	480
	2.0	3.0	225/-	0.5	2	115	80	225	2	0.2	PBSS5220T			
	2.0	5.0	220/420	0.5	2	75	50	210	2	0.2	PBSS5320T			
30	1.0	3.0	260/350	0.5	2	220	110	225	1	0.05	PBSS5130T			
	2.0	3.0	300/450	0.1	2	160	80	350	2	0.2	PBSS5230T			
40	1.0	2.0	300/800	0.1	5	250	130	500	1	0.1	PMMT591A			
		2.0	300/510	0.1	5	230	150	500	1	0.1	PBSS5140T			
	2.0	3.0	300/450	0.1	2	150	80	350	2	0.2	PBSS5240T			
50	2.0	3.0	200/-	0.5	2	150	90	300	2	0.1	PBSS5250T			
		5.0	200/360	0.5	2	90	55	270	2	0.2	PBSS5350T			
60	1.0	2.0	150/250	0.5	5	220	120	330	1	0.1	PBSS5160T			
100	1.0	3.0	150/350	0.5	5	170	95	320	1	0.1	PBSS9110T			
20	4.0	15.0	250/400	0.5	2	50	35	280	4	0.4	PBSS301PD	SOT457 (SC-74)	2.9 x 1.5 x 1.0	750
	3.0	5.0	200/-	0.5	2	85	80	400	3	0.3	PBSS5320D			
40	4.0	15.0	200/310	0.5	2	55	46	300	4	0.4	PBSS302PD			
50	3.0	5.0	200/300	0.5	2	120	70	300	2	0.2	PBSS5350D			
60	3.0	6.0	180/265	0.5	2	70	55	290	3	0.3	PBSS303PD			
80	3.0	5.0	155/225	0.5	2	71	55	290	3	0.3	PBSS304PD			
100	1.0	3.0	150/350	0.5	5	170	100	320	1	0.1	PBSS9110D			
	2.0	3.0	175/275	0.5	2	88	65	250	2	0.2	PBSS305PD			
12	5.3	10.6	250/400	0.5	2	28 ²⁾	20	210	5.3	0.265	PBSS301PX	SOT89 (SC-62)	4.5 x 2.5 x 1.5	1650
20	3.0	5.0	220/450	0.5	2	90	50	300	3	0.3	PBSS5320X			
	5.0	10.0	300/430	0.5	2	34	45	270	5	0.5	PBSS5520X			
	5.1	10.2	250/370	0.5	2	32 ²⁾	25	230	5.1	0.255	PBSS302PX			
30	3.0	5.0	200/380	0.5	2	80	40	320	3	0.3	PBSS5330X			
	5.1	10.2	250/400	0.5	2	32 ²⁾	25	230	5.1	0.255	PBSS303PX			
40	4.0	10.0	250/370	0.5	2	45	33	375	5	0.5	PBSS5540X			
50	2.0	5.0	200/-	0.5	2	160	90	320	2	0.2	PBSS5250X			
	3.0	5.0	200/375	0.5	2	120	60	390	3	0.3	PBSS5350X			
60	4.2	8.4	200/295	0.5	2	53 ²⁾	35	310	4.2	0.21	PBSS304PX			
80	4.0	10.0	200/300	0.5	2	50	35	380	5	0.5	PBSS5480X			
		8.0	200/280	0.5	2	43	36	240	4	0.4	PBSS305PX			
100	1.0	3.0	150/350	0.5	5	170	90	320	1	0.1	PBSS9110X			
	3.7	7.4	200/300	0.5	2	52	45	300	4	0.4	PBSS306PX			
12	5.7	11.4	250/400	0.5	2	30 ²⁾	20	245	5.7	0.285	PBSS301PZ	SOT223 (SC-73)	6.5 x 3.5 x 1.65	1700
20	5.5	11.0	250/370	0.5	2	34 ²⁾	25	265	5.5	0.275	PBSS302PZ			
30	5.3	10.6	250/400	0.5	2	35 ²⁾	25	265	5.3	0.265	PBSS303PZ			
40	5.0	10.0	250/350	0.5	2	55	80	160	2	0.2	PBSS5540Z			
50	3.0	5.0	200/300	0.5	2	120	70	300	2	0.2	PBSS5350Z			
60	4.5	9.0	200/295	0.5	2	59 ²⁾	35	375	4.5	0.225	PBSS304PZ			
80	4.5	9.0	200/280	0.5	2	69 ²⁾	36	450	4.5	0.225	PBSS305PZ			
100	1.0	3.0	150/-	0.5	5	170	90	320	1	0.1	PBSS9110Z			
	4.1	8.2	200/300	0.5	5	57	45	325	4.1	0.41	PBSS306PZ			

¹⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm²

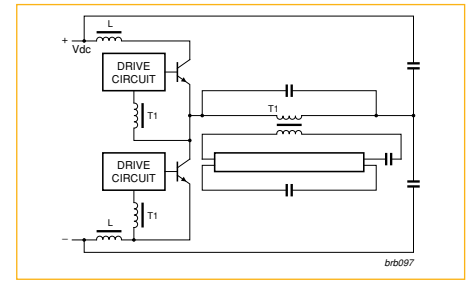
²⁾ $I_C/I_B = 20$

BISS high voltage low V_{CEsat} transistors

Package				SOT223 (SC-73)	SOT89 (SC-62)	SOT23
Size (mm)				6.5 x 3.5 x 1.65	4.5 x 2.5 x 1.5	2.9 x 1.3 x 1.0
P _{tot} (mW)				1700	1300	250
	$V_{CESM}^{(1)}$ (V)	V_{CEO} (V)	I_C (A)			
NPN	-	150	1	PBHV8115Z	<i>PBHV8115X</i>	PBHV8115T
	500	400	0.5	PBHV8540Z	<i>PBHV8540X</i>	PBHV8540T
PNP	-	150	1	PBHV9115Z	<i>PBHV9115X</i>	PBHV9115T
	500	400	0.25	PBHV9040Z	<i>PBHV9040X</i>	PBHV9040T



¹⁾ Collector-emitter peak voltage

Types in ***PBHV8115X*** represent products in development

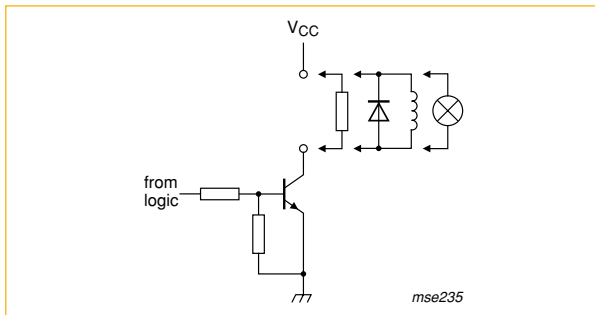


Current fed half bridge ballast

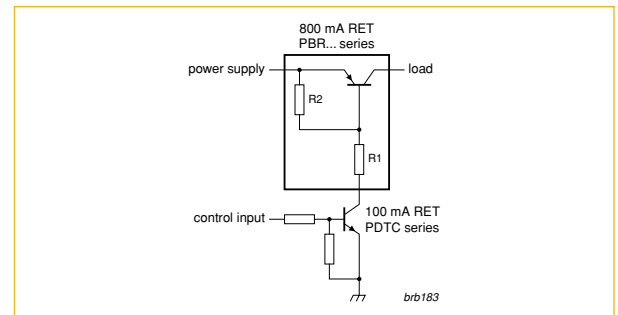
BISS RETs

Package								SOT23
Size (mm)								2.9 x 1.3 x 1.0
P _{tot} (mW)								250
Polarity		V _{CEO} (V)	I _{ORM} (mA) ¹⁾	I _O (mA)		R1 (kΩ)	R2 (kΩ)	
NPN		40	800	600	R1 = R2	1	1	PBRN113ET
						2.2	2.2	PBRN123ET
					R1 ≠ R2	1	10	PBRN113ZT
						2.2	10	PBRN123YT
PNP		40	800	600	R1 = R2	1	1	PBRP113ET
						2.2	2.2	PBRP123ET
					R1 ≠ R2	1	10	PBRP113ZT
						2.2	10	PBRP123YT

¹⁾ repetitive peak output current



RETs to switch loads up to 800 mA



RET combination to build an 800 mA loadswitch

Double low V_{CEsat} (BISS) transistors

V_{CEO} (V)	I_C (A)	Polarity	h_{FE} min	@ I_C (A)	@ V_{CE} (V)	V_{CEsat} typ (mV) @ $I_C = 0.5$ A; $I_B = 0.05$ A	V_{CEsat} max (mV)	@ I_C (A)	@ I_B (A)	Type	Package	Size (mm)	P _{tot} (mW)
15	0.5	2 x PNP	200	0.01	2	170 ¹⁾	250	0.5	0.05	PBSS3515VS	SOT666	1.6 x 1.2 x 0.55	500 ²⁾
		NPN/PNP	200	0.01	2	170 ¹⁾	250	0.5	0.05	PBSS2515VPN			
		2 x NPN	200	0.01	2	170 ¹⁾	250	0.5	0.05	PBSS2515VS			
15	0.5	NPN/PNP	200	0.01	2	170 ¹⁾	250	0.5	0.05	PBSS2515YPN	SOT363 (SC-88)	2.0 x 1.25 x 0.95	430 ²⁾
40	1.0	NPN/PNP	300/250	0.5	5	130/150	500	1	0.1	PBSS4140DPN	SOT457 (SC-74)	2.9 x 1.5 x 1.0	700 ³⁾
	2.0	NPN/PNP	300/250	0.5	5	80/100	400/530	2	0.2	PBSS4240DPN			
		2 x NPN	200	0.5	5	115	250	1	0.1	PBSS4160DS			
60	1.0	2 x PNP	150	0.5	5	120	330	1	0.1	PBSS5160DS	SOT96 (SO8)	4.9 x 3.9 x 1.75	1430 ⁴⁾
		NPN/PNP	200/150	0.5	5	115/120	250/330	1	0.1	PBSS4160DPN			
		2 x NPN	300	0.5	2	50	340	2.7	0.27	PBSS4350SS			
50	2.7	2 x PNP	200	0.5	2	60	370	2.7	0.27	PBSS5350SS	SOT96 (SO8)	4.9 x 3.9 x 1.75	1430 ⁴⁾
		NPN/PNP	300/200	0.5	2	50/60	340/370	2.7	0.27	PBSS4350SPN			

¹⁾ @ $I_C = 0.5$ A; $I_B = 0.025$ A

²⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm²

³⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm²

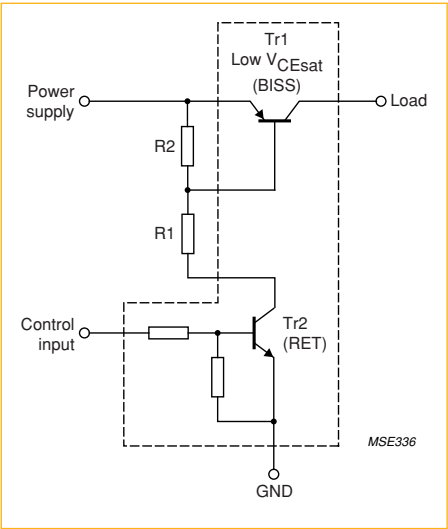
⁴⁾ Device mounted on a ceramic PCB, Al₂O₃, standard footprint

BISS Loadswitches

Package				SOT96 (SO8)	SOT457 (SC-74)	SOT363 (SC-88)	SOT666
Size (mm)				4.9 x 3.9 x 1.75	2.9 x 1.5 x 1.0	2.0 x 1.25 x 0.95	1.6 x 1.2 x 0.55
P _{tot} (mW)				1430 ¹⁾	600 ¹⁾	300 ²⁾	300 ²⁾
V _{CEO} (V)	I _C (A)	V _{CEsat} max (mV) @ I _C = 0.5 A	R1, R2 (kΩ)				
15	0.5	250	2.2			PBLS1501Y	PBLS1501V
			4.7			PBLS1502Y	PBLS1502V
			10			PBLS1503Y	PBLS1503V
			22			PBLS1504Y	PBLS1504V
20	1	150	2.2		PBLS2001D		
			4.7		PBLS2002D		
			10		PBLS2003D		
			22		PBLS2004D		
	3	75	2.2	PBLS2001S			
			4.7	PBLS2002S			
			10	PBLS2003S			
40	0.5	350	2.2			PBLS4001Y	PBLS4001V
			4.7			PBLS4002Y	PBLS4002V
			10			PBLS4003Y	PBLS4003V
			22			PBLS4004Y	PBLS4004V
			47			PBLS4005Y	PBLS4005V
	1	170	2.2		PBLS4001D		
			4.7		PBLS4002D		
			10		PBLS4003D		
			22		PBLS4004D		
			47		PBLS4005D		
60	1	180	2.2		PBLS6001D		
			4.7		PBLS6002D		
			10		PBLS6003D		
			22		PBLS6004D		
			47		PBLS6005D		

1) Device mounted on a ceramic PCB, Al₂O₃, standard footprint

2) Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint



BISS Loadswitch

Cross reference table

Industry type	NXP cross	Industry type	NXP cross	Industry type	NXP cross
FMMT459	PBHV8540T	ZXT10P20DE6	PBSS301PD	ZXTP07012EFF	PBSS5320T
FMMT489	PBSS4140T	ZXT13N15DE6	PBSS301PD	ZXTP07040DFF	PBSS5350T
FMMT491	PBSS4160T	ZXT13P12DE6	PBSS301PD	ZXTP19020CFF	PBSS5320T
FMMT491A	PBSS4160T	ZXT13P20DE6	PBSS301PD	ZXTP19040CFF	PBSS5350T
FMMT589	PBSS5140T	ZXT1M322	PBSS301PD	ZXTP19060CFF	PBSS5350T
FMMT591	PBSS5160T	ZXT2M322	PBSS301PD	ZXTP19100CFF	PBSS9110T
FMMT591A	PBSS5140T	ZXT3M322	PBSS302PD	ZXTP2006E6	PBSS301PD
FMMT617	PBSS4320T	ZXTAM322	PBSS301ND	ZXTP2008G	PBSS303PZ
FMMT618	PBSS4320T	ZXTBM322	PBSS301ND	ZXTP2008Z	PBSS303PX
FMMT619	PBSS4350T	ZXTC2045E6	PBSS4240DPN	ZXTP2009Z	PBSS304PX
FMMT624	PBHV8115T	ZXTCM322	PBSS303ND	ZXTP2012G	PBSS304PZ
FMMT625	PBHV8115T	ZXTD4591E6	PBSS4160DPN	ZXTP2012Z	PBSS304PX
FMMT717	PBSS5320T	ZXTD6717E6	PBSS4240DPN	ZXTP2013G	PBSS306PZ
FMMT718	PBSS5320T	ZXTN07045EFF	PBSS4350T	ZXTP2013Z	PBSS306PX
FMMT720	PBSS5350T	ZXTN19055DZ	PBSS304NX	ZXTP2014G	PBHV9115Z
FMMT722	PBSS9110T	ZXTN19060CFF	PBSS4160T	ZXTP2014Z	PBHV9115X
FMMT723	PBSS9110T	ZXTN19100CFF	PBSS8110T	ZXTP2039F	PBSS5160T
FMMTL618	PBSS4320T	ZXTN2005G	PBSS303NZ	ZXTP2041F	PBSS5140T
FMMTL718	PBSS5220T	ZXTN2005Z	PBSS303NX	ZXTP23140BFH	PBHV9115T
FZT1048A	PBSS302NZ	ZXTN2007G	PBSS303NZ	ZXTP25015DFH	PBSS5320T
FZT1049A	PBSS303NZ	ZXTN2007Z	PBSS303NX	ZXTP25020BFH	PBSS5320T
FZT1147A	PBSS301PZ	ZXTN2010G	PBSS304NZ	ZXTP25020CFH	PBSS5320T
FZT493	PBSS8110Z	ZXTN2010Z	PBSS304NX	ZXTP25020DFH	PBSS5320T
FZT788B	PBSS5350Z	ZXTN2011G	PBSS306NZ	ZXTP25040DFH	PBSS5350T
FZT968	PBSS301PZ	ZXTN2011Z	PBSS306NX	ZXTP25040DFL	PBSS5350T
ZUMT717	PBSS5140U	ZXTN2038F	PBSS4160T	ZXTP25060BFH	PBSS5350T
ZXT10N20DE6	PBSS301ND	ZXTN2040F	PBSS4140T	ZXTP25100BFH	PBSS9110T
ZXT10P12DE6	PBSS301PD	ZXTN25040DZ	PBSS4540X	ZXTP25140BFH	PBHV9115T