

Small Signal Transistors

TO-39 Case (Continued)



TYPE NO.	DESCRIPTION	V _{CBO} (V)	V _{CEO} (V) *V _{CER}	V _{EBO} (V)	I _{CBO} @ (μA) *I _{CEO} **I _{CEV} ***I _{CEV} ****I _{CER}	V _{CB} (V)	h _{FE}		@ I _C (mA)	@ V _{CE} (V)	V _{CE} (SAT) @ I _C (V)	f _T (MHz) *TYP	C _{ob} (pF) *TYP	t _{on} (ns) *TYP	t _{off} (ns) *TYP	NF (dB) *TYP
		MIN	MIN	MIN			MIN	MAX			MAX	MIN	MAX	MAX	MAX	MAX
BSY52	NPN AMPL/SWITCH	60	25	5.0	0.10	30	100	300	150	10	0.80	150	130*	10	--	--
BSY53	NPN AMPL/SWITCH	75	30	7.0	0.01	60	40	120	150	10	0.60	150	100*	10	--	--
BSY54	NPN AMPL/SWITCH	75	30	7.0	0.01	60	100	300	150	10	0.60	150	145*	10	--	--
BSY55	NPN AMPL/SWITCH	120	80	7.0	0.01	90	40	120	150	10	0.60	150	100*	10	--	--
BSY56	NPN AMPL/SWITCH	120	80	7.0	0.01	90	100	300	150	10	0.60	150	145*	10	--	--
BSY88	NPN AMPL/SWITCH	100	60	7.0	0.01	75	100	300	150	10	0.60	150	--	--	--	--
BUY47	NPN HIGH CURRENT	150	120	6.0	10	80	15	--	5,000	5.0	1.00	5,000	50*	80	1,000	2,000
BUY48	NPN HIGH CURRENT	200	170	6.0	10	100	15	--	5,000	5.0	1.00	5,000	50*	80	1,000	2,000
BUY49S	NPN HIGH VOLTAGE	250	200	6.0	0.1	200	40	--	500	5.0	0.20	500	50	30	300	1,000
BUY68	NPN HIGH CURRENT	100	60	6.0	1.00	60	40	250	1,000	1.0	1.00	5,000	50	80	350	750
MJ420	NPN HIGH VOLTAGE	275	250	6.0	100	275	25	250	30	20	5.00	30	15	12	--	--
MJ420S	NPN HIGH VOLTAGE	275	250	6.0	100	275	25	250	30	20	5.00	30	150	12	--	--
MJ421	NPN HIGH VOLTAGE	350	325	6.0	100	350	25	250	30	20	5.00	30	15	12	--	--
MJ421S	NPN HIGH VOLTAGE	350	325	6.0	100	350	25	250	30	20	5.00	30	15	12	--	--
MM420	NPN HIGH VOLTAGE	275	250	6.0	100	275	25	250	30	20	5.00	30	15	12	--	--
MM421	NPN HIGH VOLTAGE	350	325	6.0	100	350	25	250	30	20	5.00	30	15	12	--	--
MM3000	NPN HIGH VOLTAGE	100	100	5.0	1.00	50	20	--	10	10	--	--	150	7.0	--	--
MM3001	NPN HIGH VOLTAGE	150	150	5.0	1.00	75	20	--	10	10	--	--	150	7.0	--	--
MM3002	NPN HIGH VOLTAGE	200	200	5.0	5.00	100	20	--	10	10	--	--	150	15	--	--
MM3003	NPN HIGH VOLTAGE	250	250	5.0	5.00	100	20	--	10	10	--	--	150	15	--	--
MM3005	NPN AMPL/SWITCH	80	60	5.0	100	60	50	250	150	1.0	0.35	150	50	15	--	--
MM3006	NPN AMPL/SWITCH	100	80	5.0	100	80	50	250	200	1.0	0.35	150	50	15	--	--
MM3007	NPN AMPL/SWITCH	120	100	5.0	100	100	50	250	250	1.0	0.35	150	50	15	--	--
MM3008	NPN HIGH VOLTAGE	120	120	6.0	0.10	120	30	--	1.0	10	--	--	50	3.0	--	--
MM3009	NPN HIGH VOLTAGE	180	180	6.0	0.10	180	30	--	1.0	10	--	--	50	3.0	--	--
MM4000	PNP HIGH VOLTAGE	100	100	4.0	1.00	50	20	--	10	10	0.60	10	--	6.0	--	--
MM4001	PNP HIGH VOLTAGE	150	150	4.0	1.00	75	20	--	10	10	0.60	10	--	10	--	--
MM4002	PNP HIGH VOLTAGE	200	200	4.0	5.00	150	20	--	10	10	5.00	10	--	20	--	--
MM4003	PNP HIGH VOLTAGE	250	250	4.0	5.00	150	20	--	10	10	5.00	10	--	20	--	--
MM5415	PNP HIGH VOLTAGE	200	200	4.0	50	175	30	150	50	10	2.50	50	15	25	--	--
MM5416	PNP HIGH VOLTAGE	350	300	7.0	50	280	30	120	50	10	2.50	50	15	25	--	--
SE7001	NPN HIGHVOLTAGE	150	150	5.0	0.10	75	30	--	30	10	2.00	50	40	9.0	--	--
SE7002	NPN HIGH VOLTAGE	120	120	5.0	0.10	75	30	--	30	10	0.90	50	40	3.5	--	--
SE7056	NPN HIGH VOLTAGE	300	300	7.0	0.10	200	40	100	30	10	1.00	20	40	3.0	--	--
40327	NPN HIGH VOLTAGE	300	300*	5.0	0.10	150	40	250	20	10	--	--	--	--	--	--
40347	NPN AMPL/SWITCH	60	40	7.0	1.00****	30	20	80	450	4.0	1.00	450	--	--	--	--
40348	NPN AMPL/SWITCH	90	65	7.0	1.00****	60	30	125	300	4.0	0.75	300	--	--	--	--
40406	PNP AMPL/SWITCH	50	50	4.0	--	--	30	200	0.1	10	--	--	100*	--	--	--
40408	NPN AMPL/SWITCH	50	90	4.0	--	--	40	200	10	4.0	1.40	150	100*	--	--	--
40412	NPN HIGH VOLTAGE	250	250*	4.0	2.00***	150	40	--	30	20	0.50	10	10	10	--	--

(15-August 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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Product End of Life Notification

PDN ID:	PDN01261
Notification Date:	7/25/23
Last Buy Date:	1/25/24
Last Shipment Date	7/25/24

Summary: The following PNP transistors are discontinued and are now classified as End of Life (EOL).

Although Central Semiconductor makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Portfolio Management. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

*** All Plating types (PBFREE, TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
BFX87	N/A
BFX88	N/A
2N2904	N/A
2N2904A	N/A
2N2927	N/A
2N3072	N/A
2N3120	N/A
2N3133	N/A
40406	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. If you would like assistance, please visit <https://my.centalsemi.com/submit-inquiry?type=ER> to submit an online inquiry.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.

Mouser Electronics

Authorized Distributor

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Central Semiconductor:

[40347 PBFREE](#) [MM3007 PBFREE](#) [40348 BK PBFREE](#)