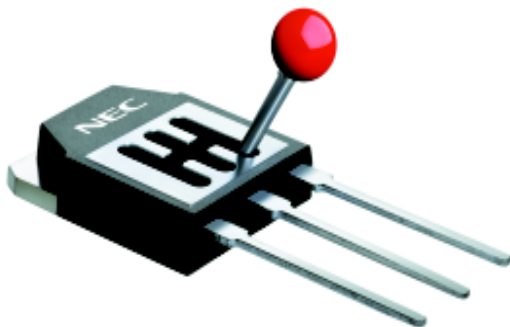


# Powerhouse



## NP-Series 4/99

- $T_{J,MAX} = 175^{\circ}C$
- Ultra low On-Resistance  $R_{DS(on)}$
- Low Gate-Charge
- Avalanche Energy rated



MOSFET by NEC:  
Well-built

**NEC**

# Our hotheads

can take the heat. Up to 175° C.



NEC's new PowerMOSFET family – the NP-series – has been designed to meet the toughest specifications in automotive applications and beyond.

The NP-series includes devices with lowest on-resistance, higher current handling capability, higher performance and outstanding reliability.

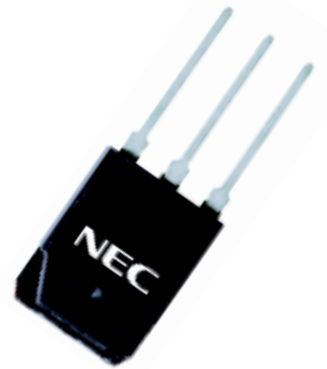
High temperature stability up to  $T_{J,MAX} = 175^{\circ}C$ ,  $R_{DS(ON)}$  max. down to 4.3 m $\Omega$ , current rating up to 88 A, improved gate charge characteristics – features like these make all the difference. All devices are tested for unclamped inductive switching and avalanche capability.

The NP-series is supplied in popular TO-220, TO251/252 and TO-262/263 packages.

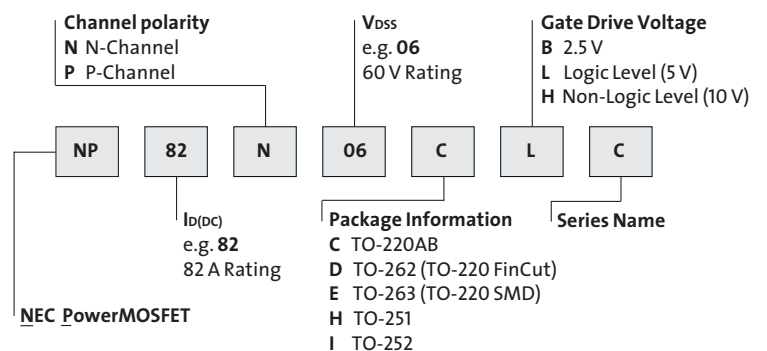
## Target Market and Applications

- **Automotive**
  - Electric Power Steering
  - Antilock Brakes
  - Electronic Shift Control
  - DC/DC Converter
  - HID-Lamp-Ballast
  - Active Rectifier for Alternator
  - Motor-Driver
- **Communication**
  - DC/DC Converter
  - Switch Mode Power Supplies
- **Industrial**
  - DC/DC Converter
  - AC/DC Converter
  - DC/AC Inverter
  - Uninterruptible Power Supplies
  - Electric Hand Tools
  - Motor-Driver
- **Computer/EDP**
  - DC/DC Converter
  - PC Motherboards
  - Notebook Power Management

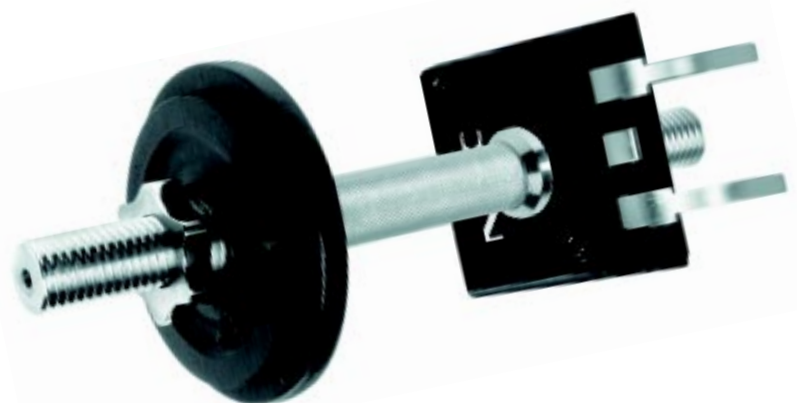
NEC NP-Series, N-Channel, 175°C								
Part No.	V <sub>DS</sub> [V]	I <sub>D</sub> [A]	P <sub>D</sub> [W] @V <sub>GS</sub> = 25°C	LL = Logic Level NL = Non Logic Level	R <sub>DS(on)</sub> [mΩ] @V <sub>GS</sub> = 10 V	R <sub>DS(on)</sub> max [mΩ] @V <sub>GS</sub> = 5 V	R <sub>DS(on)</sub> max [mΩ] @V <sub>GS</sub> = 4 V	Package
NP80N03CLE	30	80	120	LL	7	9	10@4.5 V	TO-220
NP80N03DLE	30	80	120	LL	7	9	10@4.5 V	TO-262
NP80N03ELE	30	80	120	LL	7	9	10@4.5 V	TO-263
NP80N04CHE	40	80	120	NL	8	-	-	TO-220
NP80N04DHE	40	80	120	NL	8	-	-	TO-262
NP80N04EHE	40	80	120	NL	8	-	-	TO-263
NP84N04CHE	40	84	200	NL	5.8	-	-	TO-220
NP84N04DHE	40	84	200	NL	5.8	-	-	TO-262
NP84N04EHE	40	84	200	NL	5.8	-	-	TO-263
NP86N04CHE	40	86	230	NL	4.5	-	-	TO-220
NP86N04DHE	40	86	230	NL	4.5	-	-	TO-262
NP86N04EHE	40	86	230	NL	4.5	-	-	TO-220
NP88N04CHE	40	88	288	NL	4.3	-	-	TO-220
NP88N04DHE	40	88	288	NL	4.3	-	-	TO-262
NP88N04EHE	40	88	288	NL	4.3	-	-	TO-263
NP22N055HHE	55	22	45	NL	49	-	-	TO-251
NP22N055IHE	55	22	45	NL	49	-	-	TO-252
NP22N055HLE	55	22	45	LL	47	67	70@4.5 V	TO-251
NP22N055ILE	55	22	45	LL	47	67	70@4.5 V	TO-252
NP32N055HHE	55	32	66	NL	29	-	-	TO-251
NP32N055IHE	55	32	66	NL	29	-	-	TO-252
NP40N055CHE	55	40	66	NL	28	-	-	TO-251
NP40N055DHE	55	40	66	NL	28	-	-	TO-252
NP40N055EHE	55	40	66	NL	28	-	-	TO-263
NP32N055HLE	55	32	66	LL	24	29	33@4.5 V	TO-251
NP32N055ILE	55	32	66	LL	24	29	33@4.5 V	TO-252
NP40N055CLE	55	40	66	LL	25	33	35@4.5 V	TO-220
NP40N055DLE	55	40	66	LL	25	33	35@4.5 V	TO-262
NP40N055ELE	55	40	66	LL	25	33	35@4.5 V	TO-263
NP34N055HHE	55	34	88	NL	22	-	-	TO-251
NP34N055IHE	55	34	88	NL	22	-	-	TO-251
NP34N055HLE	55	34	88	LL	20	26	27@4.5 V	TO-251
NP34N055ILE	55	34	88	LL	20	26	27@4.5 V	TO-252
NP48N055CHE	55	48	88	NL	20	-	-	TO-220
NP48N055DHE	55	48	88	NL	20	-	-	TO-262
NP48N055EHE	55	48	88	NL	20	-	-	TO-263
NP48N055CLE	55	48	88	LL	19	24	25@4.5 V	TO-220
NP48N055DLE	55	48	88	LL	19	24	25@4.5 V	TO-262
NP48N055ELE	55	48	88	LL	19	24	25@4.5 V	TO-263
NP36N055HHE	55	36	120	NL	17	-	-	TO-251
NP36N055ILE	55	36	120	NL	17	-	-	TO-252
NP36N055HLE	55	36	120	LL	15	19	20@4.5 V	TO-251
NP36N055ILE	55	36	120	LL	15	19	20@4.5 V	TO-252



### Our device ID: more than just a number

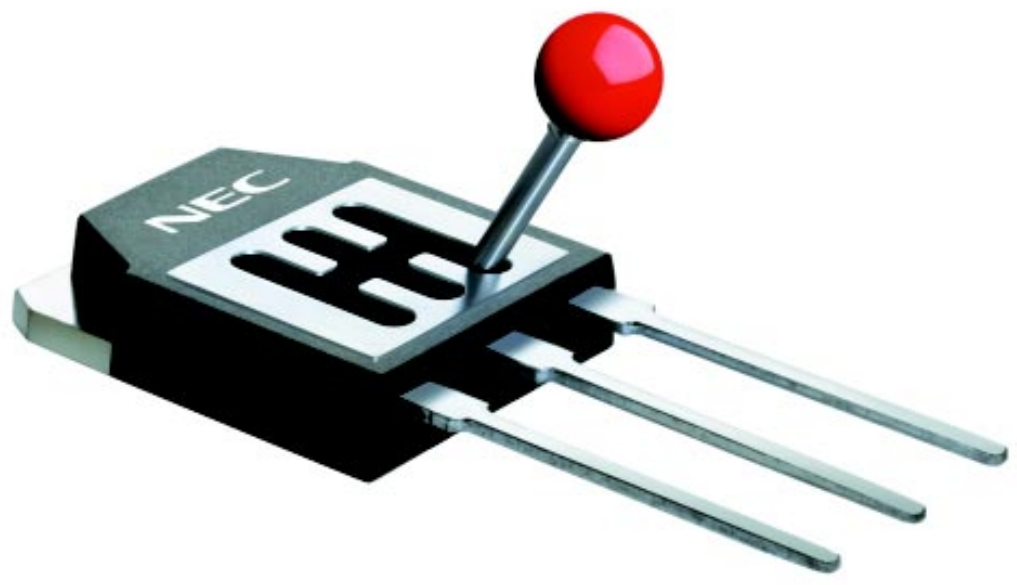
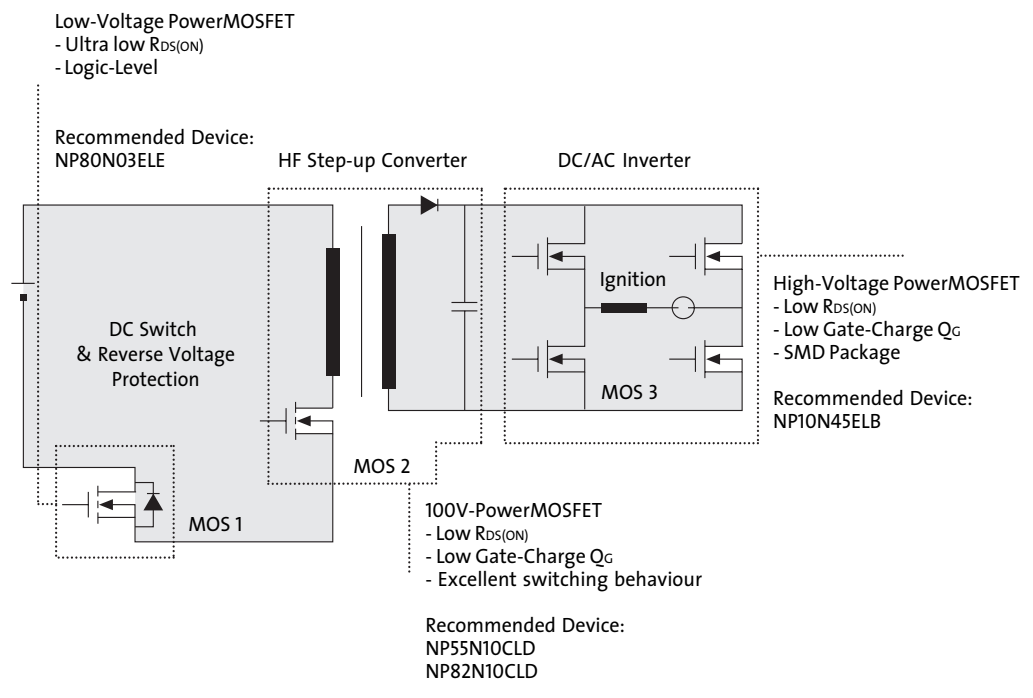


NEC NP-Series, N-Channel, 175°C								
Part No.	V <sub>DS</sub> [V]	I <sub>D</sub> [A]	P <sub>D</sub> [W] @V <sub>C</sub> = 25° C	LL = Logic Level NL = Non Logic Level	R <sub>DS(on)</sub> [mΩ] @V <sub>GS</sub> = 10 V	R <sub>DS(on)</sub> max [mΩ] @V <sub>GS</sub> = 5 V	R <sub>DS(on)</sub> max [mΩ] @V <sub>GS</sub> = 4 V	Package
NP80N055CHE	55	80	120	NL	11	-	-	TO-220
NP80N055DHE	55	80	120	NL	11	-	-	TO-262
NP80N055EHE	55	80	120	NL	11	-	-	TO-263
NP80N055CLE	55	80	120	LL	11	13	15@4.5 V	TO-220
NP80N055DLE	55	80	120	LL	11	13	15@4.5 V	TO-262
NP80N055ELE	55	80	120	LL	11	13	15@4.5 V	TO-263
NP82N055CHE	55	82	163	NL	9.3	-	-	TO-220
NP82N055DHE	55	82	163	NL	9.3	-	-	TO-262
NP82N055EHE	55	82	163	NL	9.3	-	-	TO-263
NP82N055CLE	55	82	163	LL	8.4	11	12@4.5 V	TO-220
NP82N055DLE	55	82	163	LL	8.4	11	12@4.5 V	TO-262
NP82N055ELE	55	82	163	LL	8.4	11	12@4.5 V	TO-220
NP84N055CHE	55	84	200	NL	7.7	-	-	TO-220
NP84N055DHE	55	84	200	NL	7.7	-	-	TO-262
NP84N055EHE	55	84	200	NL	7.7	-	-	TO-263
NP84N055CLE	55	84	200	LL	7	8.7	9.1@4.5 V	TO-220
NP84N055DLE	55	84	200	LL	7	8.7	9.1@4.5 V	TO-262
NP84N055ELE	55	84	200	LL	7	8.7	9.1@4.5 V	TO-263
NP88N055CHE	55	88	288	NL	5.3	-	-	TO-220
NP88N055DHE	55	88	288	NL	5.3	-	-	TO-262
NP88N055EHE	55	88	288	NL	5.3	-	-	TO-263
NP88N055CLE	55	88	288	LL	5.2	6.4	6.7@4.5 V	TO-220
NP88N055DLE	55	88	288	LL	5.2	6.4	6.7@4.5 V	TO-262
NP88N055ELE	55	88	288	LL	5.2	6.4	6.7@4.5 V	TO-263
NP12N06HLB	60	12	45	LL	100	130	150	TO-251
NP12N06ILB	60	12	45	LL	100	130	150	TO-252
NP24N06HLB	60	24	51	LL	70	90	95	TO-251
NP24N06ILB	60	24	51	LL	70	90	95	TO-252
NP40N06CLC	60	40	84	LL	27	38	40	TO-220
NP40N06DLC	60	40	84	LL	27	38	40	TO-262
NP40N06ELC	60	40	84	LL	27	38	40	TO-263
NP45N06CLC	60	45	105	LL	20	25	30@4.5 V	TO-220
NP45N06DLC	60	45	105	LL	20	25	30@4.5 V	TO-262
NP45N06ELC	60	45	105	LL	20	25	30@4.5 V	TO-263
NP24N10CLB	100	24	100	LL	80	93	100	TO-220
NP24N10DLB	100	24	100	LL	80	93	100	TO-262
NP24N10ELB	100	24	100	LL	80	93	100	TO-263
NP55N10CLD	100	55	200	LL	30	-	40@4.5 V	TO-220
NP55N10DLD	100	55	200	LL	30	-	40@4.5 V	TO-262
NP55N10ELD	100	55	200	LL	30	-	40@4.5 V	TO-263
NP82N10CLD	100	82	260	LL	20	-	28@4.5 V	TO-220
NP82N10DLD	100	82	260	LL	20	-	28@4.5 V	TO-262
NP82N10ELD	100	82	260	LL	20	-	28@4.5 V	TO-263
NP10N45CHB	450	10	184	NL	500	-	-	TO-220
NP10N45DHB	450	10	184	NL	500	-	-	TO-262
NP10N45EHB	450	10	184	NL	500	-	-	TO-263





# HID-Lamp Ballast for Car-Headlights



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