

NPC EL DRIVERS

NPC's lineup of EL drivers which initially comprised drivers for small EL displays in remote controls and mobile telephones has now expanded to include drivers for larger EL displays in PDAs and other portable information devices. The lineup also includes drivers for dual and 2-color EL displays with individual control.

All drivers provide stable EL driver functionality with high efficiency. They can be employed in a diverse range of applications by adjusting circuit components to achieve the desired balance between EL brightness and current consumption requirements.

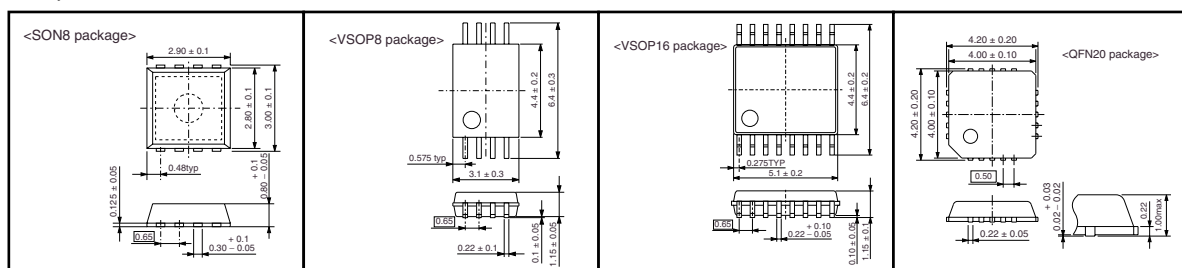
NPC EL DRIVER SUMMARY

	SM8141A	SM8141B	SM8142A	SM8142B	SM8143A	SM8144B	SM8145A
Target sheet size	to 50cm ²	to 50cm ²	to 30cm ²	to 30cm ²	to 80cm ²	to 70cm ²	to 30cm ² Double
Maximum operating current (3V/5V)	60mA/36mA (Ta = 85°C max)	60mA/36mA (Ta = 85°C max)	60mA/36mA (Ta = 85°C max)	60mA/36mA (Ta = 85°C max)	150mA/100mA (Ta = 70°C max)	100mA/60mA (Ta = 70°C max)	Total 85mA/51mA (Ta = 70°C max)
EL drive frequency range	31 to 1000Hz	31 to 1000Hz	31 to 1000Hz	31 to 1000Hz	31 to 1500Hz	31 to 1500Hz	31 to 1500Hz
Maximum EL drive voltage	200Vp-p	200Vp-p	200Vp-p	200Vp-p	200Vp-p	200Vp-p	200Vp-p
Coil drive transistor output resistance (typ)	8Ω	8Ω	8Ω	8Ω	3.5Ω	3.5Ω	8Ω
Enable function (active-HIGH)	No	Yes	No	Yes	Yes	Yes	EL1, 2 independent
Oscillator frequency set resistor	2pcs Coil drive/EL drive	1pcs	2pcs Coil drive/EL drive	1pcs	2pcs Coil drive/EL drive	1pcs	4pcs 3 Coil drive/ 1 EL drive
Number of standard components	R = 2 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 6pcs and EL	R = 1 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 5pcs and EL	R = 2 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 6pcs and EL	R = 1 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 5pcs and EL	R = 2 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 6pcs and EL	R = 1 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 5pcs and EL	R = 4 C = 2 (Include C _{bypass}) L = 1 Diode = 1 Total 8pcs and Double EL
Supply voltage range	2.0 to 5.5V	2.0 to 5.5V	1.6 to 5.5V	1.6 to 5.5V	1.6 to 5.5V	1.6 to 5.5V	1.6 to 5.5V
Package	VSOP8 ¹ /Chip	VSOP8 ² /Chip	SON8/VSOP8 ¹	SON8/VSOP8 ²	VSOP16	VSOP8 ²	QFN20
Handheld PCs	good	good	–	–	best	better	(best) ³
PDAs, Palm-sized PCs, Handheld GPS	better	better	good	good	best	best	good
Remote controllers	best	best	better	better	better	best	better
Cellular phones	best	best	best	best	good	good	best
Wristwatches, Portable audio	better	better	best	best	–	–	good

*1. Pin compatible

*2. Pin compatible

*3. Keyboard and LCD

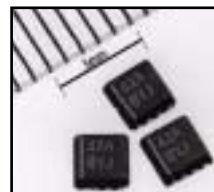


SM8141

Designed to drive EL displays of around 50cm² for devices such as remote controllers. It is available in two versions--version A has independent booster coil drive frequency and EL drive frequency adjustment control, and version B has an enable function built-in. It is supplied in 8-pin VSOP packages and in chip form.

SM8142

Designed to drive EL displays of around 30cm² for devices such as mobile telephones and portable audio players. It features low-voltage operation compared to the SM8141, thereby reducing power consumption. It is available in two versions--version A has independent booster coil drive frequency and EL drive frequency adjustment control, and version B has an enable function built-in. One package option is ultra-compact 8-pin SON (small outline non-leaded) packages, making possible the design of low-consumption, compact, thin driver circuits. It is supplied in 8-pin SON and 8-pin VSOP packages.



SM8143



Designed to drive EL displays of around 80cm² for devices such as handheld PCs and fax machines. It features greater drive capability (3V operation, 150mA maximum operating current) compared to the SM8141/SM8142, thereby delivering high brightness. It can drive white EL displays where increasing the brightness is difficult, delivering the equivalent brightness of blue/green displays. The booster coil drive frequency and EL drive frequency can be adjusted independently for optimized brightness and current consumption. The enable function allows EL lighting control without resorting to controlling the supply voltage. It is supplied in 16-pin VSOP packages.

SM8144

Designed to drive EL displays of around 70cm² for devices such as portable information terminals (PDAs, palm-sized PCs) and smart telephones. It features greater drive capability (3V operation, 100mA maximum operating current) compared to the SM8141/SM8142, and an enable function that allows EL lighting control without resorting to controlling the supply voltage. It is supplied in 8-pin VSOP packages, making possible the construction of high-brightness driver circuits with a small mounting surface area.



SM8145



Designed to drive dual independent EL displays for folding-type mobile telephones, where each EL display is around 30cm² in size. It features 4 mode operation (EL1 on, EL2 on, EL1+EL2 on, EL1+EL2 off) where the brightness can be adjusted in response to the operating mode. It is supplied in 20-pin QFN (quad flat non-leaded) packages, making possible the construction of dual EL driver circuits with a small mounting surface area.

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