

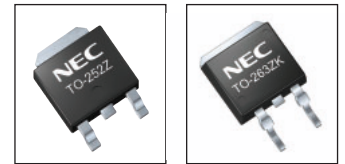
# MOSFET for LCD Backlight Inverters

Multi CCFL and EEFL have been applied in recent years for LCD TV's circuitry cost reduction purpose. In conjunction of this development trend, NEC Electronics offers low voltage MOSFET with optimal low on-state resistance that comes with high power package.

CCFL: Cold Cathode Fluorescent Lamp  
EEFL: External Electrode Fluorescent Lamp

## Features

- The MOSFET available in this application, which are ranging from  $R_{DS(on)} = 6.7 \text{ m}\Omega$  (lowest  $R_{DS(on)}$  class in the industry) to  $20 \text{ m}\Omega$  class based on customers' common requirements. These highest standard MOSFET that provide super low  $R_{DS(on)}$  achieved by one of the NEC most advance process, UMOS4.
- High Power Package (TO-252, TO-263) with excellent thermal performance. Production of Package TO-252 is expanding continuously as for fully meeting market demand including those used for PC application (CPU peripheral DC/DC converters).



TO-252

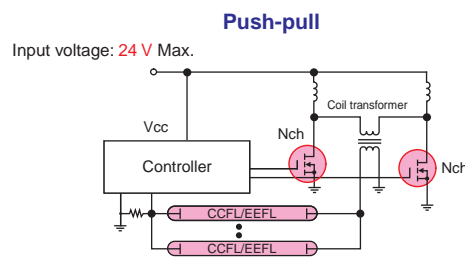
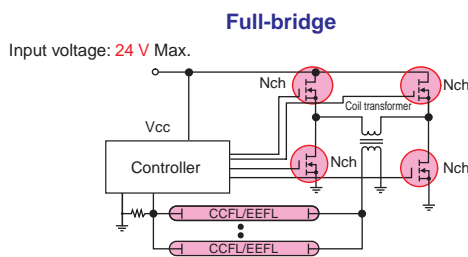
TO-263

## Application

Backlight inverters for LCD TV's

## Specifications

LCD TV, Multi CCFL and EEFL (full-bridge and push-pull circuits methods)



## Full-bridge circuit methods

- Low voltage (24 V) input -

Product	Package	V <sub>bss</sub> (V)	V <sub>gss</sub> (V)	I <sub>D</sub> (DC) (A)	R <sub>DS(on)</sub> Max. (mΩ)		C <sub>iss</sub> (pF)	Q <sub>g</sub> (nC)
					V <sub>GS</sub> = 10 V	V <sub>GS</sub> = 4.5 V		
2SK4075-ZK	TO-252	40	±20	±60	6.7	10	2900	54
2SK4075B-ZK	TO-252	40	±20	±50	7.9	10	2230	44
2SK4076-ZK	TO-252	40	±20	±35	16	25	1200	24
2SK4077-ZK	TO-252	40	±20	±20	20	35	800	18
2SK4078-ZK	TO-252	40	±20	±50	8.5	14	2300	45
2SK4078B-ZK	TO-252	40	±20	±38	8.5	13	1860	39
2SK4184-ZK	TO-263	40	±20	±50	8.5	14	2300	45

## Push-pull circuit methods

- Low voltage (24 V) input -

Product	Package	V <sub>bss</sub> (V)	V <sub>gss</sub> (V)	I <sub>D</sub> (DC) (A)	R <sub>DS(on)</sub> Max. (mΩ)		C <sub>iss</sub> (pF)	Q <sub>g</sub> (nC)
					V <sub>GS</sub> = 10 V	V <sub>GS</sub> = 4.5 V		
2SK3814-Z	TO-252	60	±20	±60	8.7	10.5	5450	95
2SK3377-Z	TO-252	60	±20	±20	44	78*	760	17
2SK3385-Z	TO-252	60	±20	±30	28	45*	1500	30
2SK3386-Z	TO-252	60	±20	±34	21	36*	2100	39
2SK3402-Z	TO-252	60	±20	±36	15	22*	3200	61
2SK3794-Z	TO-252	60	±20	±20	44	78*	760	17
2SK3899-ZK	TO-263	60	±20	±84	5.3	6.5	5500	96
2SK3900-ZP	TO-263	60	±20	±82	8.0	10	3500	65.5
2SK3901-ZK	TO-263	60	±20	±60	13	16.5	1950	40
2SK3902-ZK	TO-263	60	±20	±30	21	26	1200	25

\* V<sub>GS</sub> = 4.0 V

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