



TND011NM, TND011MP

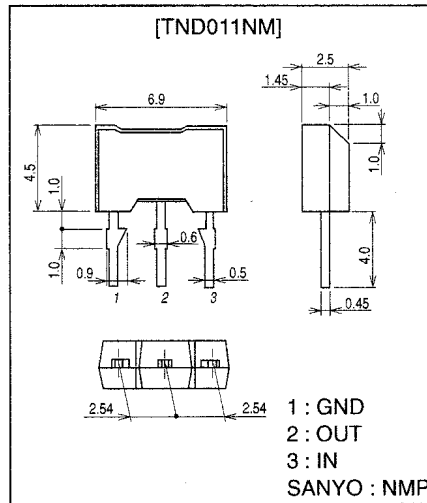
Lamp Drive Applications

Features

- N-channel MOSFET built in.
- Overcurrent protection built in.
- Reset function built in.

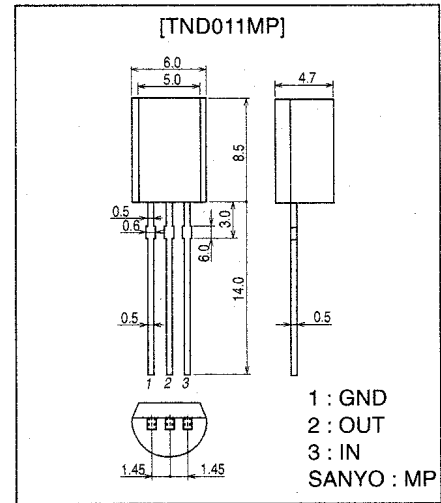
Package Dimensions

Unit:mm
2145



Package Dimensions

Unit:mm
2145



Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS(DC)}$		60	V
Output Current (Average)	$I_O(DC)$		1.5	A
Peak Output Current	I_{OP}		5	A
Input Voltage	V_{IN}		-0.5 to +6	V
Input Current	I_{IN}		±10	mA
Allowable Power Dissipation	P_D		1	W
Operating Temperature	T_{opr}		-40 to +85	°C
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V_{DSS}	$V_{IN}=0, I_O=4.5mA$	60			V
Output-OFF Current	I_{DSS1}	$V_{IN}=0, V_{DS}=60V$			4.5	mA
	I_{DSS2}	$V_{IN}=0, V_{DS}=25V$			1.5	mA
Input Voltage	V_{IH}	$V_{DD}=24V (AC), I_O=1.5A$	4.5	5	6	V
Input Voltage	V_{IL}	$V_{DD}=24V (AC), I_O=5mA$			0.8	V

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- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

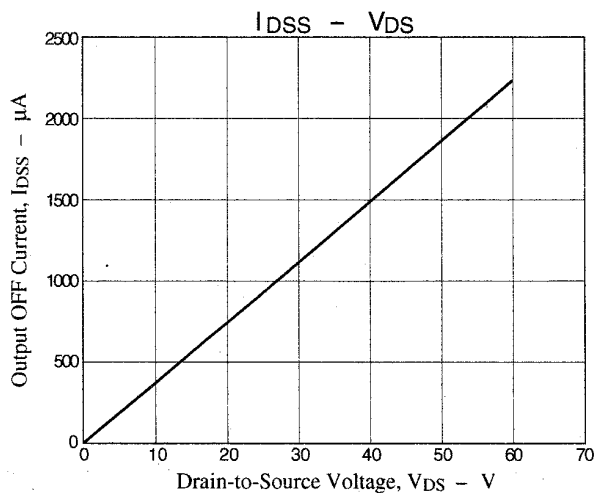
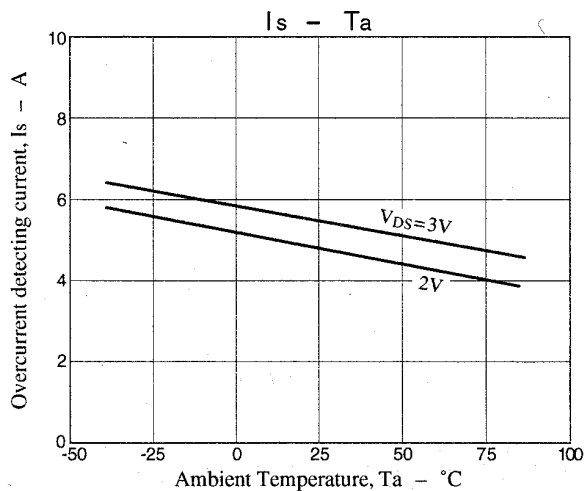
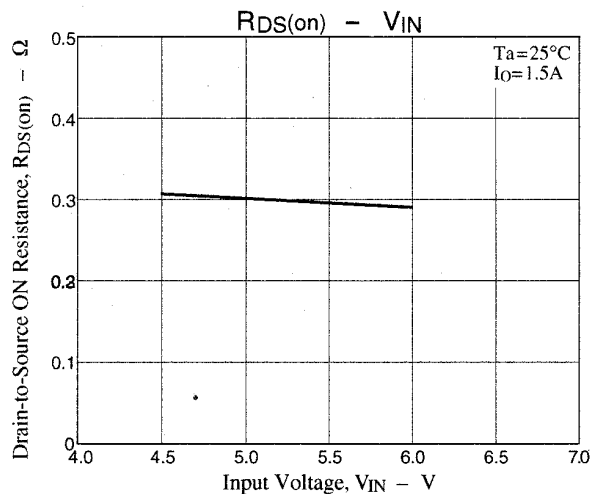
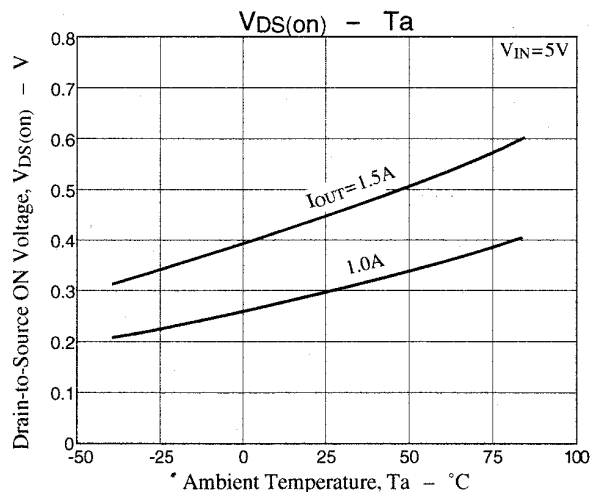
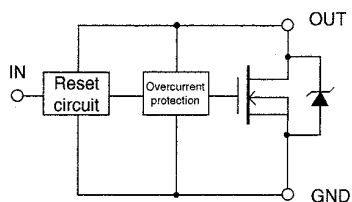
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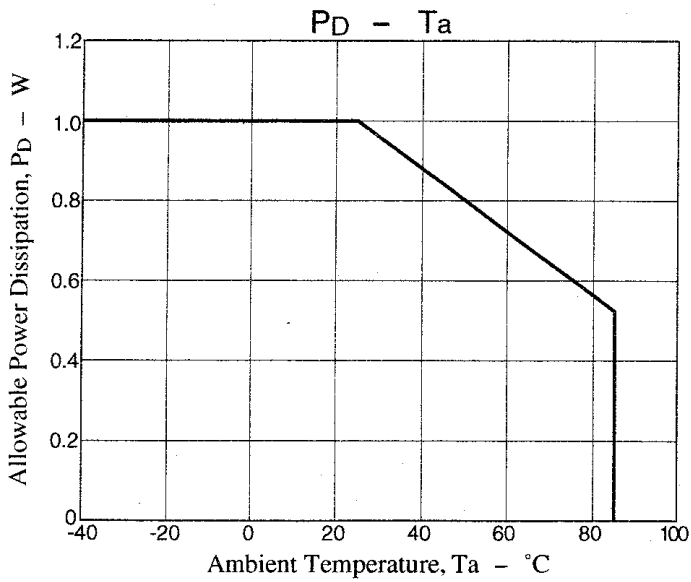
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source ON Voltage	$V_{DS(on)}$	$V_{IN}=5V, I_O=1.5A$		0.5	0.75	V
Drain-to-Source ON Resistance	$R_{DS(on)}$	$V_{IN}=5V, I_O=1.5A$			0.5	Ω
Overcurrent Detecting Current	I_s	$V_{IN}=5V$		5		A
Input Current (Output ON)	I_{IN}	$V_{IN}=5V, V_{DS(ON)} \leq 1V$			1	mA
Reset voltage	V_{RESET}^*	$V_{IN}=5V$		4.6		V

*: Output is turned off regardless of input when power supply voltage is higher than V_{RESET} .

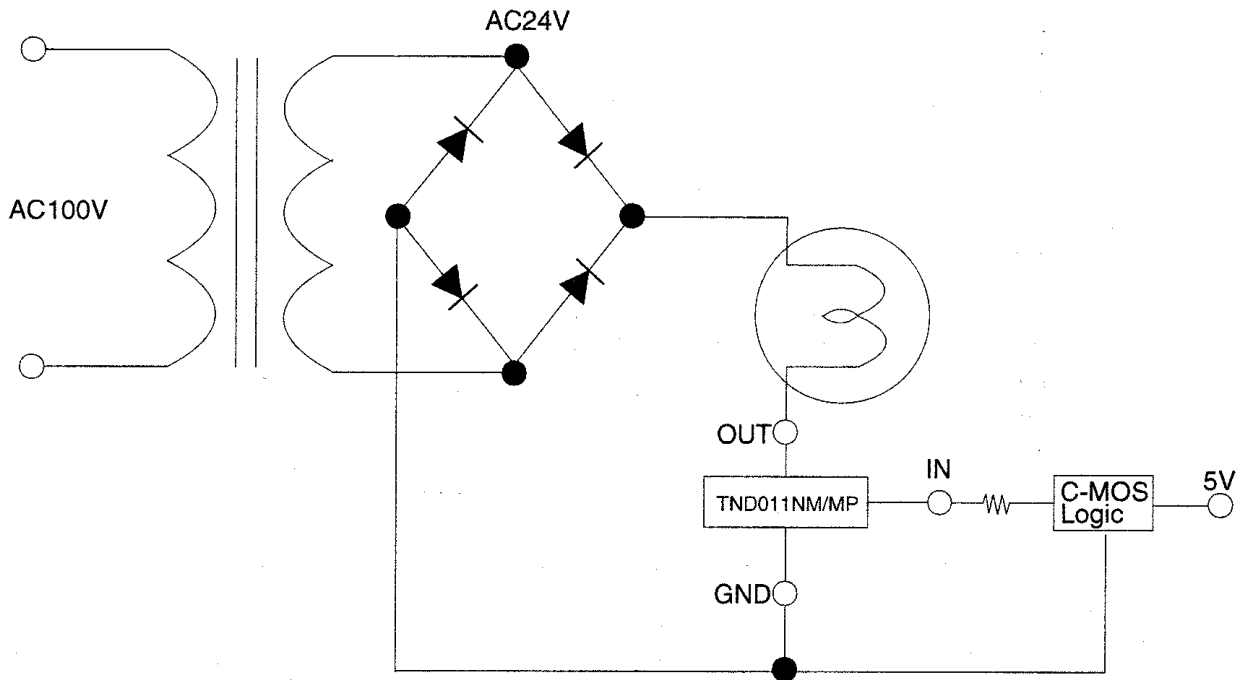
Block Diagram



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Sample Application Circuit



Operation Description

- When the input voltage exceeds 4.5V, the output power MOSFET is turned on to cause current to flow through the lamp and turn it on. At this time, if a rush current flows through the lamp, the current will be limited to about 5A by the built-in overcurrent protection circuit. When the input voltage drops below 0.8V, the output power MOSFET is turned off and the lamp is turned off.
- When the lamp load is short-circuited, output voltage becomes equal to the power supply voltage. Therefore, the reset circuit operates to turn off the output power MOSFET, protecting the power switch from destruction.