

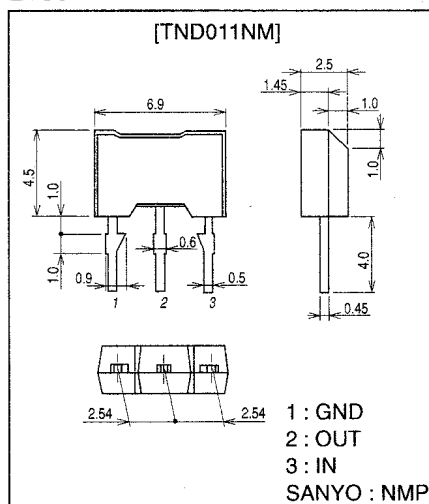
SANYO**TND011NM, TND011MP****Lamp Drive Applications****Features**

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

Package Dimensions

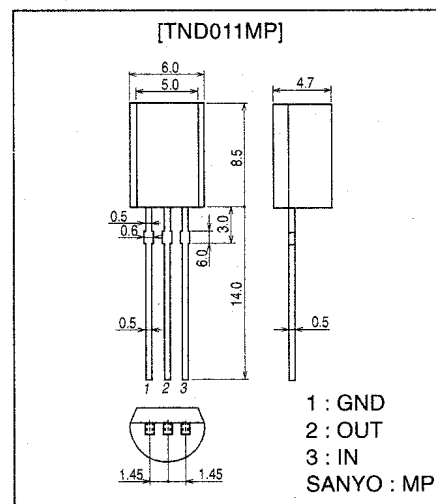
Unit:mm

2135

**Package Dimensions**

Unit:mm

2145

**Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}(\text{DC})$		60	V
Output Current (Average)	$I_O(\text{DC})$		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	$^\circ\text{C}$
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

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

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■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

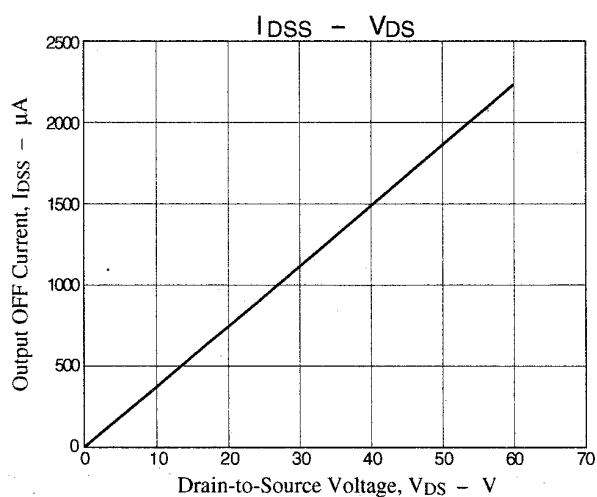
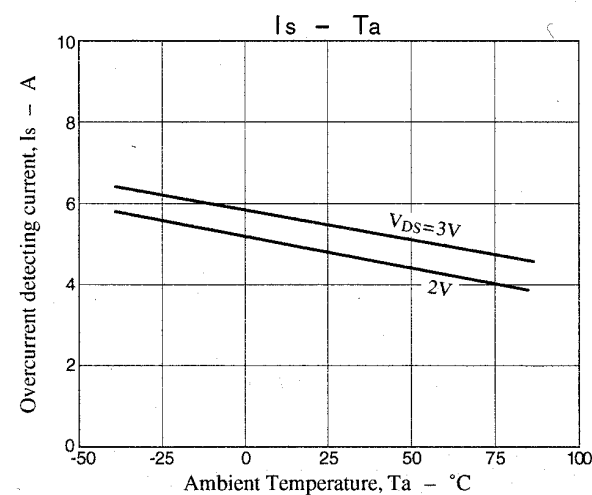
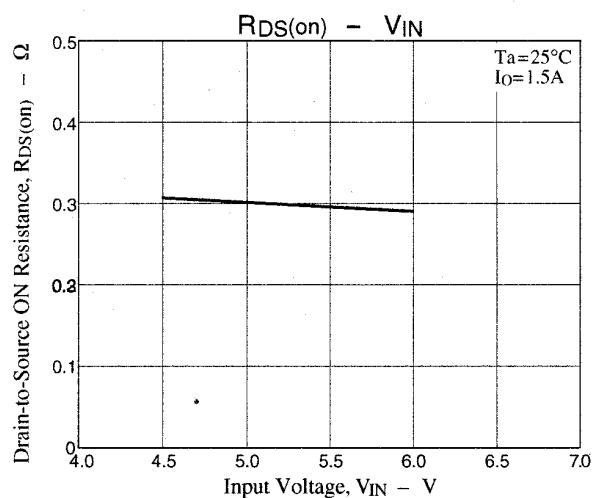
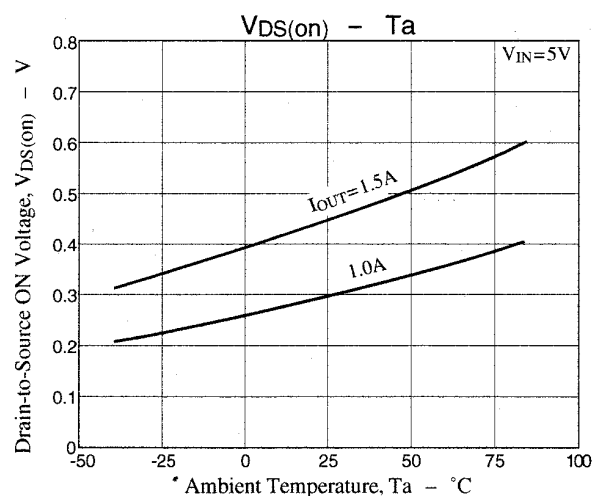
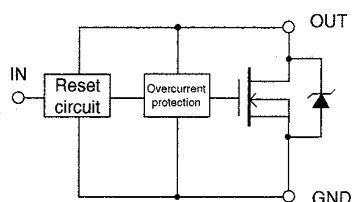
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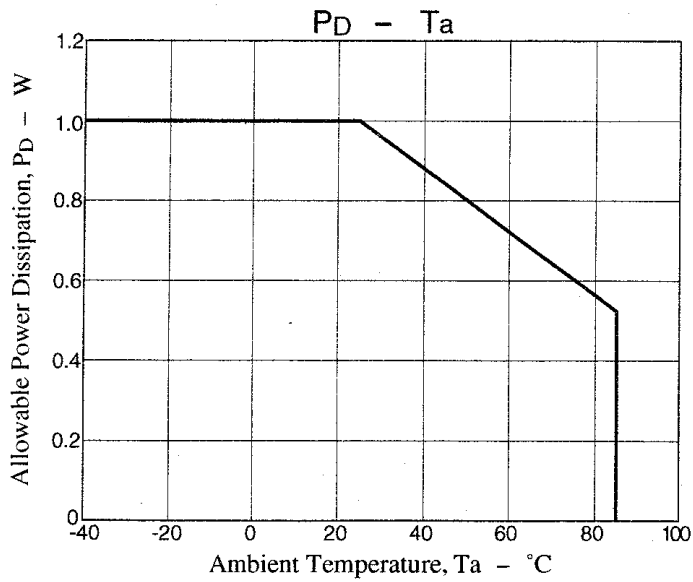
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source ON Voltage	$V_{DS(on)}$	$V_{IN}=5V, I_O=1.5A$		0.5	0.75	V
Drain-to-Source ON Resistance	$R_{DS(on)}$	$V_{IN}=5V, I_O=1.5A$			0.5	Ω
Overcurrent Detecting Current	I_s	$V_{IN}=5V$		5		A
Input Current (Output ON)	I_{IN}	$V_{IN}=5V,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

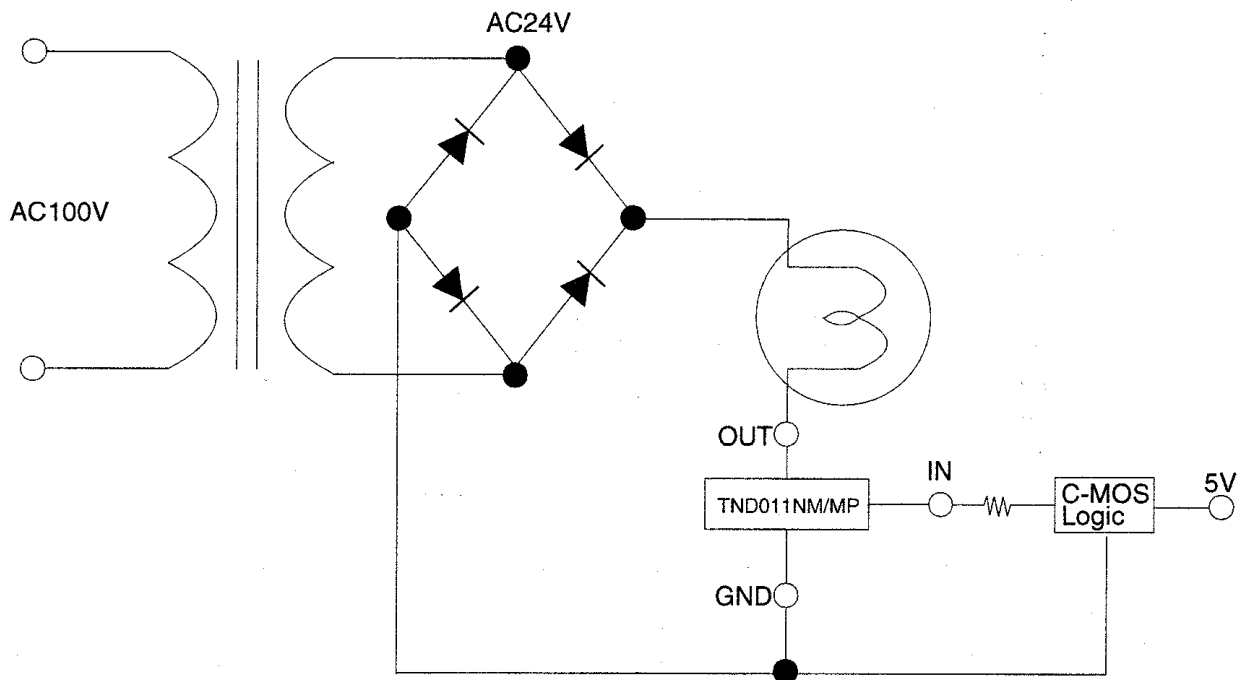
Block Diagram



TND011NM, 011MP



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.