

CMN6385AM

-60V, 70mΩ typ., -3.5A P-Channel MOSFET

General Description

This MOSFET utilizes a unique structure that combines the benefits of low on-resistance with fast switching speed, making it ideal for high-efficiency power management applications.

Features

- $R_{DS(ON)} < 80\text{m}\Omega$ @ $V_{GS} = -10\text{V}$
- $R_{DS(ON)} < 120\text{m}\Omega$ @ $V_{GS} = -4.5\text{V}$
- Surface mount package
- MSL:3
- RoHS Compliant

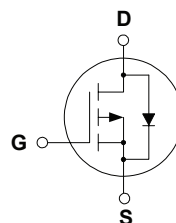
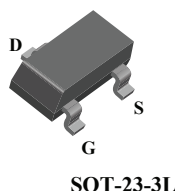
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-60V	80mΩ	-3.5A

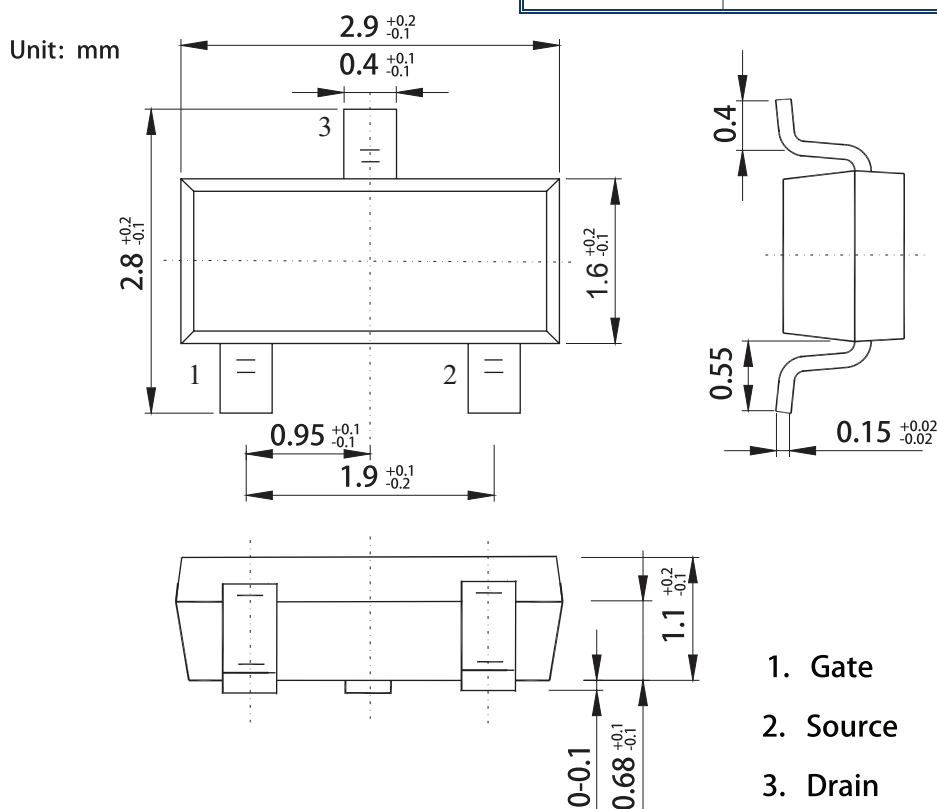
Applications

- DC-DC converters
- Relay and solenoid driving
- Power management functions
- Load switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN6385AM	SOT-23-3L	6385A



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-3.5	A
I_{DM}	Pulsed Drain Current	-10	A
$P_D@T_A=25^{\circ}\text{C}$	Total Power Dissipation	1.4	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
T_J	Operating Junction Temperature Range	150	$^{\circ}\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	89	$^{\circ}\text{C/W}$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}$, $I_D=-250\mu\text{A}$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10\text{V}$, $I_D=-2\text{A}$	---	70	80	mΩ
		$V_{GS}=-4.5\text{V}$, $I_D=-1\text{A}$	---	90	120	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu\text{A}$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60\text{V}$, $V_{GS}=0\text{V}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10\text{V}$, $I_D=-1\text{A}$	---	2.6	---	S
R_g	Gate Resistance	$V_{DS}=0\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	---	12	---	Ω
Q_g	Total Gate Charge	$I_D=-3\text{A}$	---	19	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-30\text{V}$	---	3.4	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-10\text{V}$	---	4.4	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-30\text{V}$, $R_G=3\Omega$ $I_D=-3\text{A}$, $V_{GS}=-10\text{V}$	---	5	---	ns
T_r	Rise Time		---	23	---	
$T_{d(off)}$	Turn-Off Delay Time		---	34	---	
T_f	Fall Time		---	42	---	
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	---	880	---	pF
C_{oss}	Output Capacitance		---	50	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

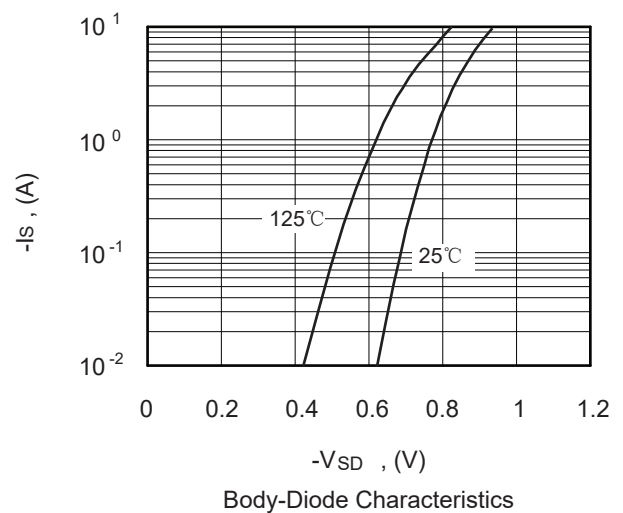
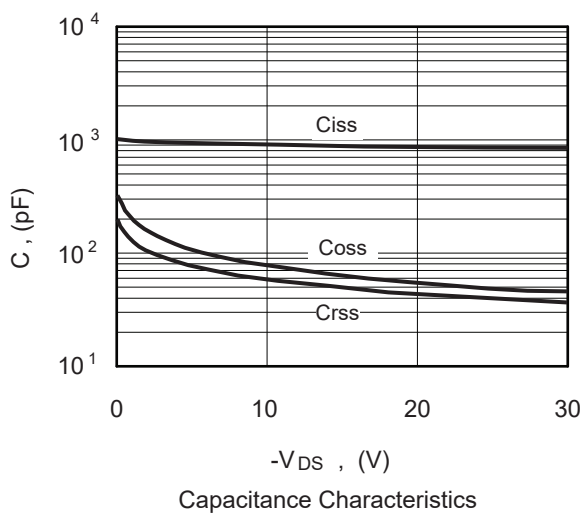
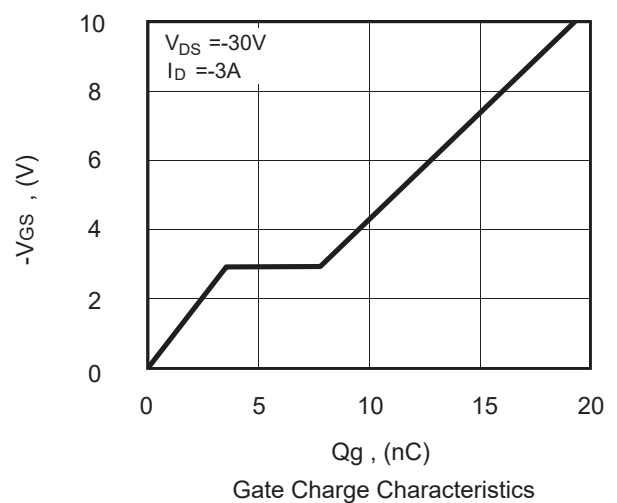
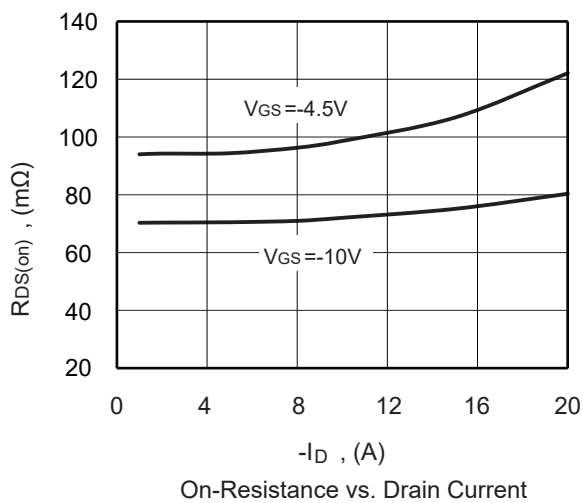
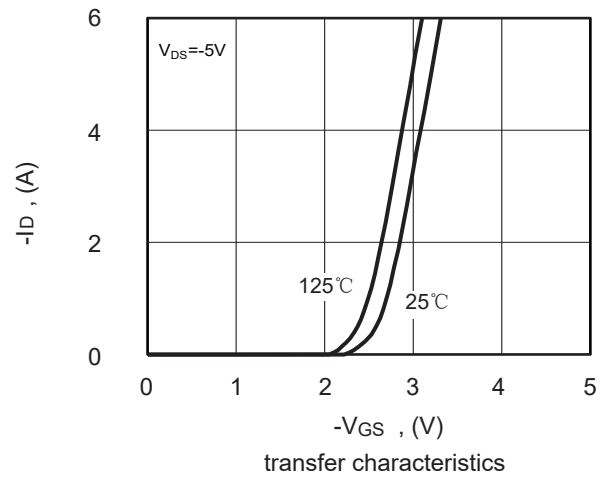
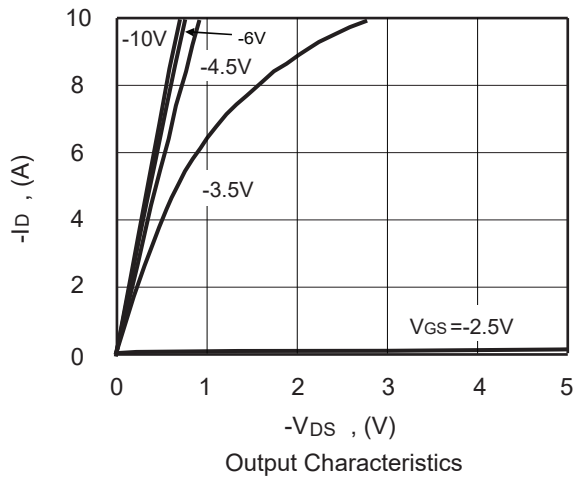
Diode Characteristics

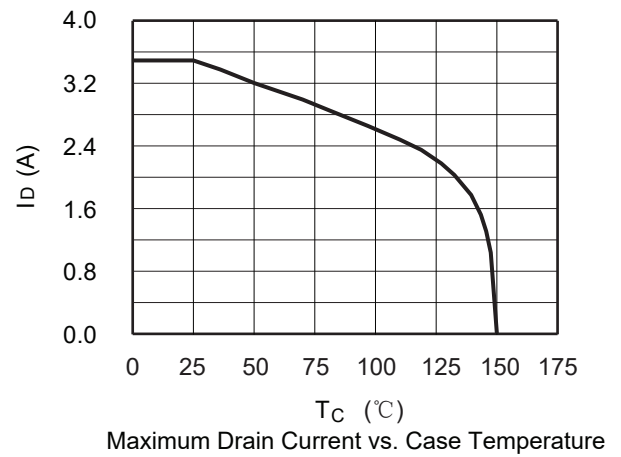
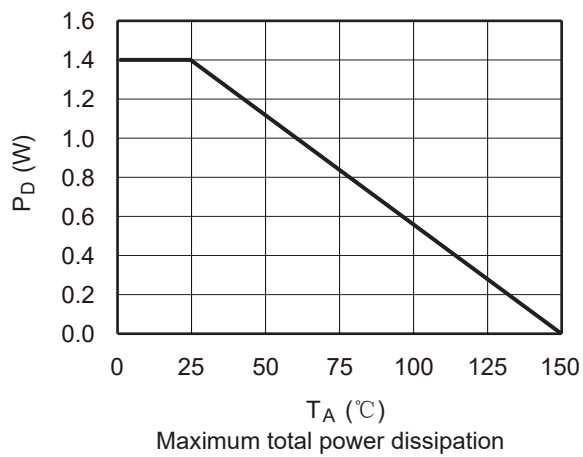
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0\text{V}$, $I_S=-1\text{A}$	---	---	-1.2	V

This product has been designed and qualified for the consumer market.

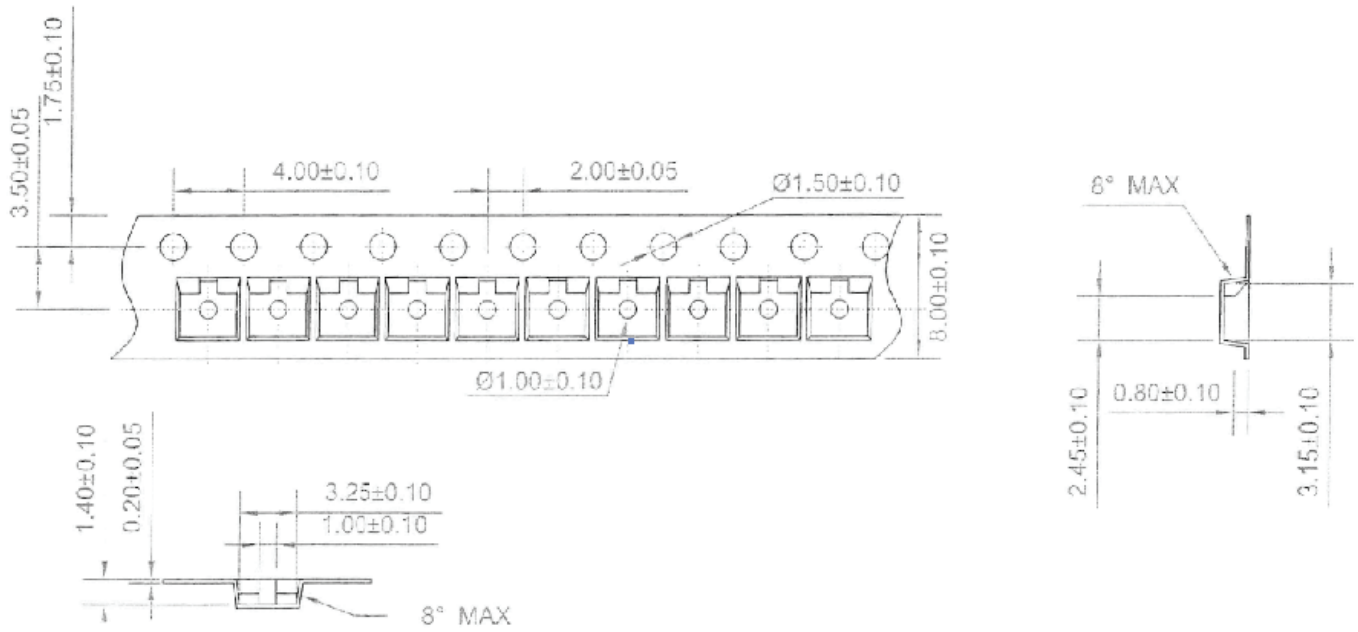
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CMOS reserves the right to improve product design, functions and reliability without notice. Please refer to the latest version of specification.

Typical Characteristics


Typical Characteristics

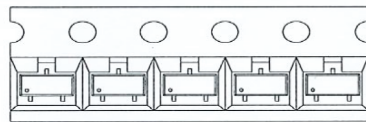
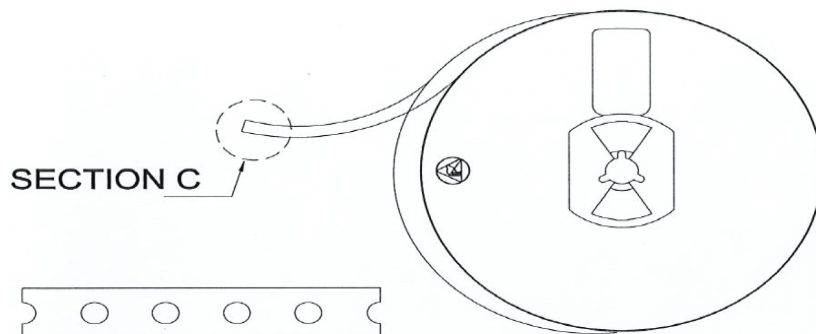
Embossed Carrier Tape Specifications



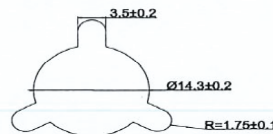
NOTE:

- 1、所有尺寸依国际EIA-481-3标准。
- 2、任意10个棘轮孔的累积误差不超过±0.2mm。
- 3、载带长度方向100mm距离的非平行度不可超过1mm。

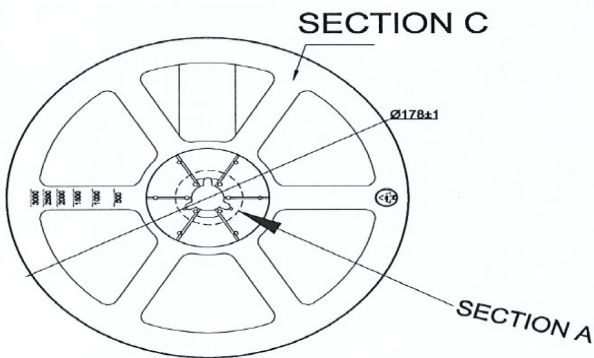
SOT-23-3L Reel



SECTION C



SECTION A



技术要求

- 1、单位: mm
- 2、蓝色塑胶轮 (旋转式)
- 3、内外不允许有毛刺
- 4、未注公差为±0.2
- 5、表面阻抗 $10^6 \sim 10^9 \Omega$
- 6、材质P.S
- 7、编带时: 起始端空位
100±5PCS; 末端空位100±5PCS